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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
<b>2017-18</b>			
Differential Equations	FCBS 0102	2016	Skill Development(Students will know about the modelling of different engineering application )
Linear Algebra & Vector	FCBS 0103	2016	Skill Development(Students will know about modelling of problems related to system of equations in engineering application)
Electricity and Magnetism	FCBS0404	2016	Skill development ( Students will develop the skill of identifying circuit elements and operating different electrical circuits)
Basic Mechanics and Properties of Matter	FCBS0405	2016	Employability (knowledge enhancement)
Optics and Optical Fibers	FCBS0406	2016	Employability (knowledge enhancement)
Industrial Chemistry	FCBS0402	2016	Employability-: Preparation of soap, dyes and oil analysis ,Analysis of cement Skill-All Practices
Environmental Science	FCBS 0101	2016	Employability-Environment and its multidisciplinary nature, Biodiversity and its conservation, Causes, effects and control measures of pollution.
Foundations of English Communication	FCHU1201	2016	Skill Development(Students will develop basic interpersonal communication skill (BICS) )
Communicative Practice Laboratory -1	FCHU1202	2016	Skill Development(Students will enhance their communication skills in English both academic and professional context)
Business Communication	FCHU1203	2016	Skill Development(Students will enhance their communication skills in English in business context)

*Anita Patil*

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Communicative Practice Laboratory-II	FCHU1204	2016	Skill Development(Students will enhance their communication skills in English both academic and professional context)
Corporate Readiness Laboratory	FCHU1205	2016	Skill Development(Students will develop professional communication skill)
IT Enabled Communication	FCHU1206	2016	Skill Development(Students will enhance their communicative competency through the use of technology)
Career Communication	FCHU1207	2016	Skill Development(Students will enhance their communicative competency in professional career)
Personality Development	FCHU1208	2016	Skill Development(Students will learn basic etiquette in professional sphere )
Seminar and Technical Writing	FCHU1209	2016	Skill Development(Students will learn the convention followed in academic and technical writing )
Professional Etiquette	FCHU1210	2016	Skill Development(Students will learn basic etiquette in professional sphere )
Creative Writing	FCHU1211	2016	Skill Development(Students will enhance their competency level using innovative method for creative writing)
English for Competition (GRE/GMAT/TOEFL/IELTS)	FCHU1212	2016	Skill Development(Students will enhance their competency level to compete with students of global standard)
Life Skills Development (LSD) – I	FCHU0210	2016	Skill Development(Students will develop life skill including time management skill, personality and others)
Life Skills Development (LSD) – II	FCHU0211	2016	Skill Development(Students will develop life skill including time



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			management skill, personality and others)
Life Skills Development (LSD) - III	FCHU0212	2016	Skill Development(Students will develop life skill including time management skill, personality and others)
Economics	FCMG0101	2016	Skill Development (to provide students with a basic understanding of the economic principles, methodologies and analytical tools that can be used in business decision making problems ) Employability & Entrepreneurship (Student shall understand and apply the impact of economic policies on managerial decision-making by providing an understanding of fiscal policy, and national and global economic issues affecting business.)
Accounting & Finance	FCMG0102	2016	Skill Development-Students will be able to create, balance and deliver a budget and use budget information for planning and decision purposes; Employability & Entrepreneurship (Students to Undertake various costing techniques and information for planning and decision-making)
Management Processes and OB	FCMG0103	2016	Skill Development-Students shall be able to analyze and compare different models used to explain individual behavior; Employability & Entrepreneurship (Students shall be able to resolve conflict, motivate the employees, handle stress and communicate



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			effectively and manage diversified workforce in workplace)
Production and Operation Management	FCMG0104	2016	Skill Development (Acquire a working understanding of the roles/functions of production management in the context of business enterprise.) Employability & Entrepreneurship (Student can use specialized knowledge in Operations Management to solve business processes )
Marketing Management	FCMG0105	2016	Skill Development (Students will learn the application of various marketing tools for solving business problems). Employability and Entrepreneurship (students will acquire and develop the marketing skills to be a successful marketing person )
Introduction to Research	FCMG0108	2016	Skill Development (Students will be able to understand the process of doing a research). Employability and Entrepreneurship (Students will be able to write a research report. )
Indian Society and Culture	FCMG0113	2016	Skill Development (Students will be familiarized with the science and technology policies that would benefit modern India). Employability and Entrepreneurship (Students would develop an idea about the socio-cultural environment in which they would be working as scientists, researchers and entrepreneurs. )



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Disaster Management	FCMG1201	2016	Skill Development (students would begin to understand the relationship between vulnerability, disasters, disaster prevention, risk reduction and the basic understanding of the research methodology for risk reduction measures.). Employability and Entrepreneurship (Students would develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity )
Material Sciences	ENFC0102	2017	Employability and Skill development (Students will be able to identify materials for engineering use. Students will be able to select best materials for a specific design and production.)
Basic Electronics	FCEN0102	2016	Skill development ( Students will develop the skill on various technology of electronics engineering )
Signals & Systems	FCEN0103	2016	Skill Development Understand mathematical description and representation of continuous and discrete time signals and systems. Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system. Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms. Understand the limitations of



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			Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain. Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event.
Digital Electronic Circuits	FCEN0104	2016	Skill Development and Employability (It's an important subject in the curriculum. It's also equivalently important for facing interviews in industry.)
Basic Electrical Engineering	FCEN0105	2016	Skill Development ( Students will get the skill to design devices and systems using electrical components such as resistors, capacitors, transistors, etc.
Electrical Machines – I	FCEN0106	2016	Skill Development ( Students will get the skill to analyze about the principle of operation & performance of rotating electrical machine like DC Motor, DC Generator, and Transformer
Analog and Digital Electronics	FCEN 0107	2016	Skill Development and Employability (It's an important subject in the curriculum. It's also equivalently important for facing interviews in industry.)
Workshop Technology	FCEN0108	2016	Skill development ( students will be able to can suggest suitable manufacturing technique for given component.)
Engineering Mechanics	FCEN0109	2016	Skill development (To provide the student with a thorough



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			understanding of concept, drawing and free body diagrams.)
Thermal Engineering	FCEN0110	2016	Skill development (Students will be able to prepare energy balance sheet will be able to understand various processes of thermodynamic cycles Will be familiar with the steam table which will further help them in advanced thermodynamics for understanding power cycles)
Basic Electronics Laboratory	FCEN0202	2016	Skill Development Students would be able to understand and interpret the specifications, Shall be able to select optimal design topologies, Shall be able to interpret datasheets and thus select appropriate components and devices, Shall be able to design an electronic system/sub-system and validate its performance by simulating the same
Signals and Systems Laboratory	FCEN0203	2016	Skill Development Understand use of different transforms and analyze signals and systems in the time/frequency domain, Capable of calibrating and resolving different frequencies existing in any signal
Digital Electronic Circuits Laboratory	FCEN0204	2016	Skill Development Design and implement Digital Logic hardware circuit to test performance and application
Electronics Workshop – I	FCEN0205	2016	Skill Development Design and implement different electronics circuits in hardware to



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			test performance and application
Basic Electrical Engineering Lab	FCEN0206	2016	Skill Development(Students will get the skill to perform the experiments based on basic concepts of electrical science.
Electrical Workshop Practice	FCEN0207	2016	Skill development( Students will Enhance their skill of operating electrical instruments, hand tools and power tools)
Basic Electrical Simulation Lab	FCEN0208	2016	Skill development( Students will Develop a skill to construct and analyze a practical electrical circuits without having practical knowledge)
Electrical Machines-I Lab	FCEN0209	2016	Skill Development(Students will get the skill to perform the experiments based on DC machines and Transformers.
Analog and Digital Electronics Lab	FCEN0210	2016	Skill Development and Employability (It's an important subject in the curriculum. It's also equivalently important for facing interviews in industry.)
Automation Lab (PLC)	FCEN0211	2016	Skill development(Students will be able to use a number of PLC programming languages to develop control solutions.)
Geometric Drawing	FCEN0212	2016	Skill development(Students will be able to Demonstrate use of CAD in Civil Construction, basic knowledge of operating software & commands, and benefit of civil developments in the construction industry. Do 2d &3d drafting /design with AUTO CAD software.)





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Electrical Load Survey	FCEN0304	2016	Skill development(Students will be skilled enough to carry out load survey and energy auditing on his/her own.)
Basic Fluid Mechanics	FCEN0401	2016	Skill development(• After completion of the course, the students will able to evaluate finite difference/volume schemes on model problems of computational fluid dynamics. • Students will learn to develop steady state mechanical energy balance equation for fluid flow systems, estimate pressure drop in fluid flow systems)
Introduction to Programming in C	FCEN0402	2016	Skill And Employability(Case study to be given to students on uses of C program for development of various real time applications like online examination system, online quiz competition etc. )
Object Oriented Programming Using C++	FCEN0403	2016	Skill And Employability(Case study to be given to students on uses of C++ program for development of various real time applications like online examination system, online quiz competition etc. )
Database Management System	FCEN0404	2016	Skill And Employability( Hands on training on Client/Server Architecture- System Structure , Instance and schema, Data Models, Types of DBMS Query Processing and Optimization: Evaluation of Relational algebra expressions-Query Equivalence-Transaction Processing: Built in SQL functions, Sub Queries-Joins-DCL – TCL- Views – Sequences – Index – Locks PL/SQL Basics –



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			Exceptions – Cursors - Stored Functions – Triggers Case study in industrial standards of Database Management)
Building Materials & Construction	FCEN0406	2016	Skill development(Knowledge: Able to learn basic theory about main building- and construction materials. Skills: Able to make right and well-founded choice of materials. General competence: Understand how properties of materials that are important in engineering can be related to the characteristics of the material.)
Basic Surveying	FCEN0407	2016	Skill development(Doing centering, leveling & measuring coordinate points of area and calculation, transfer to data from Total station to software spectrum link Doing field work using of simple machine parts such as Total – Station, Auto- level)
Python Programming	ENFC0411	2017	Skill and Employability (Case study to be given to students on uses of python program for development of various real time applications. )
Programming for Problem solving– Java	ENFC0412	2017	Skill And Employability(Understands the concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)
Electrical Circuit Drawing (AutoCAD)	FCEN0603	2016	Skill development(Students will know the use of AutoCAD



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			Software and will develop skill of designing generalized electrical Machine blueprint)
Software Development Methodologies	ENFC1404	2017	Skill (Students get to apply software engineering principles and techniques learnt to a real-life project topic of their choice in a contemporary domain and design-implement novel solution by working together as a team. )
Estimation & Quantity Surveying	CECC0201	2017	Skill development(Students will be able to Estimating, brick calculations & cost for different materials, foundation & footing calculations. Gain knowledge about how to schedule & estimate different construction works both manually and using software.)
Concrete Technology	CECC0412	2017	Skill development(Demonstrate test and analysis of cement, aggregate, sand, effect of water cement ratio. Prepare concrete, carry out simple formwork and reinforcement with the application of modern Power Tools. Prepare reinforcement of different R.C.C. members i,e, Foundation, beams, columns, slabs, Retaining Wall, etc. Erect scaffolding and make the intricate formwork at different locations. Prepare a bar bending schedule and demonstrate bar bending and



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			calculate the estimated quantity of materials.)
Geotechnical Engineering - I	CCCE0401	2015	Skill development (To obtain knowledge about soil properties and methods of soil properties determination in the laboratory, using field tests and considering comparable experience. Basic stability and deformation problems. Principle of spread and deep foundation design. To understand fundamental knowledge of geotechnical works for soil improvement, interaction of structure and subsoil. Basic design methods for excavation and foundation pits with dewatering and sealing systems)
Advanced Surveying	CCCE0407	2015	Employability(• Students will gain knowledge about the structure of spatial data including file associations, attribute tables, Metadata, coordinate systems, and projections. • To develop software skills in programs used for map production in the modern cartographic workflow.)
Foundation Engineering	CECC0402	2017	Skill development (Upon successful completion of the course, students are expected to be able to design different retaining structures and foundations in different conditions)
Highway Engineering	CCCE0402	2015	Skill development (Carry out the geometric design of the highways. Identify the properties of the materials used in highway



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			<p>construction and determine the properties in a laboratory. Perform pavement design for highways. Understand the traffic management)</p>
Water supply & Sanitary Engineering	CCCE0403	2015	<p>Skill development (the principles of water treatment units and the design of the treatment units. the principles of waste water treatment and the design of treatment units. the distribution network of the drinking water and the treated waste water. to treat the waste water and reuse to make an eco-friendly environment.)</p>
Hydrology & Irrigation	CECC0405	2017	<p>Entrepreneurship: knowledge of irrigation implementation on hydrology, water power and water quality along with acquaintance of planning, design, construction and application of irrigation/hydraulic structures in management of surface and subsurface water.</p> <ul style="list-style-type: none"> <li>• Project oriented skills shall be gained by students to work efficiently in survey, planning, design and construction in irrigation sector.</li> </ul> <p>Understand the accelerated flight performance Understand takeoff and landing performance Effectively use and understand stability for Aircraft. Able to understand the process of aerodynamic designing)</p>



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Quality Control and Risk Management in Construction	CECC0414	2017	<p>Entrepreneurship(Students will be able to work with the latest trend of the construction industry needs.</p> <p>Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.</p> <p>Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning.</p> <p>Students will plan various projects relating to advanced building technology with trust.</p> <p>Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant.</p> <p>Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Computer Aided Design of Steel structure	CECC0407	2017	<p>Skill development(to gain the knowledge of Steel design calculation with relevant Indian Standards</p> <ul style="list-style-type: none"> <li>To acquire skill of converting clients requirement to structural drawing and BOM by using STADD.PRO)</li> </ul>
Computer Aided Design of Concrete Structures)	CECC0408	2017	<p>Skill development(To gain the knowledge of RCC design calculation with relevant Indian Standards</p> <ul style="list-style-type: none"> <li>To acquire skill of converting clients requirement to structural</li> </ul>



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			drawing and BOM by using STADD.Pro.)
Strength of Material	MECC0411	2017	Employability(Students will acquire knowledge and skill to analyze the effect of force and motion on rigid bodies to solve engineering problems through application of basic laws of mechanics.)
Hydraulics & Hydraulic Machine	CCCE0102	2015	Skill Development (Analyze the boundary layer flows and methods of controlling the separation of Boundary layer. b. Determine the lift and drag forces on bodies c. Design channels of best economic section and channels flowing at uniform depth. d. Solve the canal transition problems and the hydraulic jump computations. e. Understand the working principles of centrifugal pumps, reciprocating pumps and turbines (impulse and reaction). f. Determine the dimensions of the Pelton wheel bucket and those of Francis turbine.)
Quality Control in Construction Industry	DECP0411	2015	Skill Development (Generate quality control schedule for different projects in construction industry. Prepare quality control inspection check lists for selected civil engineering structures. Carryout the field and laboratory tests for quality assessment in construction industry)



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Geotechnical Investigations	DECP0412	2015	<p>Skill Development (Plan geotechnical investigations before constructing a structure. Conduct the laboratory and field tests as a part of geotechnical investigations. Analyze the geotechnical investigation test data and prepare a report for selected categories of structures)</p>
Safety & Risk Management in Construction Industry	DECP0413	2015	<p>Skill Development (Plan a set of constructional activities eliminating risk in execution of a constructional activity. Carry out the constructional activities in civil engineering works following prescribed safety measures. Realize the necessity and significance of insurance in construction industry)</p>
Construction Equipment Management	DECP0414	2015	<p>Skill Development (Identify the particular equipment to be used in the construction project they will undertake. Prepare plans for economic management of the equipment in the projects they undertake)</p>
Pre-Fabricated Structures	DECP0211	2015	<p>Skill Development (Become knowledgeable regarding the processes of planning, production, storage, transportation and site installation of various prefabricated units pertaining to a civil engineering construction project)</p>
Repairs, Renovation, Rehabilitation of Buildings	DECP0611	2015	<p>Skill Development (Become knowledgeable regarding the</p>





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			processes of planning, production, storage, transportation and site installation of various prefabricated units pertaining to a civil engineering construction project)
MS Project 7 Based Design Project	DECP0311	2015	Employability (Identify various activities of a construction project and the critical path for executing the same. Carry out a major project and prepare a document that contains all aspects of a construction project.)
Project	DEET0300	2015	Employability (a. Simple Residential Building with GF + FF b. Auditorium with Gallery and Indoor Sports Building c. Box Culvert / Pipe Culvert d. Water Tank e. Two lane highway.)
Internship	DEET0800	2015	Employability (Skill development course)
Computer Graphics	DEPD0231	2015	Skill Development (learning software which helps to draw complicated drawings and also helps in producing detail drawings in proper scale. Learning software which helps to better visualize complicated forms and also helps in producing photo realistic images of those 3D forms)
Architectural Design	DEPD0232	2015	Skill Development (be able to do the design of any building by not only considering the plan but also the climate of the area.)



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Computer Aided Design of Advanced Concrete Structures	DEPD0431	2015	Skill development(To gain the knowledge of RCC design calculation with relevant Indian Standards <ul style="list-style-type: none"> <li>To acquire skill of converting clients requirement to structural drawing and BOM by using STADD.Pro.)</li> </ul>
Computer Aided Design of Advanced Steel Structures	DEPD0433	2015	Skill development(to gain the knowledge of Steel design calculation with relevant Indian Standards <ul style="list-style-type: none"> <li>To acquire skill of converting clients requirement to structural drawing and BOM by using STADD.PRO)</li> </ul>
Design of Earthquake Resistant Structures	DEPD0132	2015	Skill development(To gain the knowledge of RCC design calculation with relevant Indian Standards <ul style="list-style-type: none"> <li>To acquire skill of converting clients requirement to structural drawing and BOM by using STADD.Pro.)</li> </ul>
Design Project	DEPD0331	2015	Skill Development (Bridge / Culvert Project (Topics to be covered in Project) b. Hydroelectric Project c. Commercial / Hospital / Educational Complex Project d. Industrial steel structure building/ steel structure office buildings)
Remote Sensing and Image Processing	DESP0921	2015	Skill development(• Students will gain knowledge of basic concepts of remote sensing, aerial photogrammetry. <ul style="list-style-type: none"> <li>Students will gain knowledge of applications different satellites</li> </ul>



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			imagery, image classification techniques and image analysis and interpretation.)
Surveying for Civil Projects	DESP0922	2015	Skill development (to do live projected Related to Dams, Railways, Highways, Water resources using GIS.)
GIS & Digital Cartography	DESP0923	2015	Skill development(• Students will gain knowledge about the structure of spatial data including file associations, attribute tables, Metadata, coordinate systems, and projections. • To develop software skills in programs used for map production in the modern cartographic workflow.)
LIDAR Application	DESP0221	2015	Skill development(• Students will gain knowledge about LIDAR and its application. • Students will be more skilled in CATIA Civil module )
Smart City Planning	DESP0621	2015	Emphyability (designing the city features including park, garden etc. Course Outcomes: After completion of this course students will be able to design and plan a twin city model of an area. Students will get more knowledge on designing of building, road, drainage etc. through Autodesk Infracore)
Design Project ( RS & GIS based Natural Disaster management project)	DESP0321	2015	Skill development(• Students will gain knowledge about the structure of spatial data including file associations, attribute tables,



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			Metadata, coordinate systems, and projections. • To develop software skills in programs used for map production in the modern cartographic workflow.)
Data Structures using C	CCCS0401	2015	Skill (Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems using C
Design and Analysis of Algorithms	CCCS0402	2015	Skill( Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems. )
Advance Database Management System	CCCS0403	2015	Skill And Employability( Hands on training on Client/Server Architecture- System Structure , Instance and schema, Data Models, Types of DBMS Query Processing and Optimization: Evaluation of Relational algebra expressions-Query Equivalence- Transaction Processing: Built in SQL functions, Sub Queries-Joins-



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			DCL – TCL- Views – Sequences – Index – Locks PL/SQL Basics – Exceptions – Cursors - Stored Functions – Triggers Case study in industrial standards of Database Management)
Computer Networking	CCCS0104	2015	Skill( Identify the different types of network topologies and protocols. Identify the different types of network devices and their functions within network. Understand and building the skills of subletting and routing mechanisms. Create an opportunity for the job as a network administrator )
Software Engineering	CCCS0105	2015	Skill (Students get to apply software engineering principles and techniques learnt to a real-life project topic of their choice in a contemporary domain and design-implement novel solution by working together as a team. )
Building of Cloud Infrastructure	DECT0901	2015	Skill And Employability( Analyze and Understanding the functioning of different components involved in Amazon web services. Acquire cloud technology skill which helps students in getting jobs in different MNCs)
Deployment Architecture -I	DECT0902	2015	Skill And Employability(Ability to evaluate cloud application requirements and make architectural recommendations for implementation, deployment



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			and provisioning applications on AWS)
Deployment Architecture - II	DECT0903	2015	Skill And Employability(Ability to evaluate cloud application requirements and make architectural recommendations for implementation, deployment and provisioning applications on AWS)
Advanced Networking	DECT0904	2015	Skill And Employability(Students had Implemented various VPC,VPN and optimization of network cost and also Understand and building the skills of sub-netting and routing mechanisms)
Problem Solving through Coding	DEST0201	2015	Skill And Employability(Obtain skills to solve problems involving text, numbers and graphics, producing a top-level plan with refinements.)
Linux and Lamp Administration	DEST0402	2015	Skill And Employability(Obtain skills in Linux server administration. Content includes LINUX and Web server installation, system startup/shutdown, hardware configuration, disk and file system structure, package management, TCP/IP networking, system management and security, X-Windows usage and configuration, user management )
Testing and Test Automation	DEST0403	2015	Skill And Employability( students had applied various modern software testing processes in



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			relation to software development and project management)
Python for Data Science and Machine Learning	DEML0201	2015	Skill And Employability(Implement ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able to solve problems in areas computational finance, image processing and computer vision, energy and natural language processing.)
Supervised and Unsupervised Machine Learning	DEML0401	2015	Skill And Employability(Implement several ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able to solve problems in areas computational finance, image processing and computer vision, energy and natural language processing.)
ML Techniques in Image Processing	DEML0202	2015	Skill And Employability(Implemented different Real life Projects in the field of medical and Agricultural image processing)
Introduction to IT Networking & Security	DEIS0121	2015	Skill And Employability(To understand, design and implement appropriate security technologies and policies to protect computers and digital information)
Advanced Networking	DEIS0421	2015	Skill And Employability( Understand and explain Data Communications System and its components and Identify the



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			different types of network topologies and protocols. Enumerate the layers of the OSI model and TCP/IP and explain the functions of each layer, identify the different types of network devices and their functions within a network )
White Hat Hacking Techniques and Tools	DEIS0422	2015	Skill And Employability( Information technologies skill like vulnerabilities, defense-in-depth, penetration testing, the methodology for pen testing/ethical hacking, vulnerability management, incident management, and creating and implementing a security policy will be understood)
Information Technology Infrastructure Library	DEIS0122	2015	Skill And Employability( Obtain the skill about IT Service Management best practices, generic concepts, key principles, gain a comprehensive understanding of the purpose and scope of service strategy, service design, service transition, service operations, and Continual Service Improvement)
Network Security Audit of an Organisation	DEIS0221	2015	Skill And Employability(To perform an IT Network security audit of an organization and prepare a detailed report identifying different weakness of the architecture)
Introduction to Unity Game Engine	DEAR0241	2015	Skill And Employability(End to End Game Development Pipeline)





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Game Assets & Object	DEAR0641	2015	Skill And Employability(Able to built different models, assets and objects like temple, park, agriculture field etc..)
Game Animation & Scripting	DEAR0642	2015	Skill And Employability(Able to built game environment)
Building Game Environment	DEAR0643	2015	Skill And Employability(Able to design different cartoon animations and UI)
Analog Electronic Circuits	CCEC0101	2015	Skill Development and Employability ( Its an important subject in the curriculum. Its also equivalently important for facing interviews in industry.)
Network Analysis and Synthesis	CCEC0102	2015	Skill Development Applying network topology concepts in the formulation and solution of electric network problems. Applying two-port network analysis in the design and analysis of filter and attenuator networks. Identifying the properties and characteristics of network functions, and verify the mathematical constraints for their physical realization. Synthesizing passive one-port networks using standard Foster and Cauer forms.
Control Systems Engineering	CCEC0103	2015	Skill Development Categorize different types of system and identify a set of algebraic equations to represent and model a complicated system into a more simplified form. Characterize any system in Laplace domain to illustrate different specification of the



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			system using transfer function concept
Electromagnetic Field Theory and Transmission Lines	ECCC0101	2017	Skill Development This subject is a base subject for wireless communication, Antenna Engineering and other advanced communication based subject.
VLSI Design	ECCC0407	2017	Employability (Design combinational and sequential circuit using CMOS logic Enhancement of complex digital VLSI logic design skill of students which will help them to complete any project work undertaken in higher semesters. Perform back-end physical design)
Analog Communication Systems	ECCC0405	2017	Employability (Familiar with analog radio transmitters and receivers Verify the Noise performance of different Modulation Techniques)
Digital Communication Systems	ECCC0406	2017	Employability (Illustrate the classification of channels, Entropy coding methods and different types of Error control codes along with their encoding/decoding algorithms. Examine the Performance of different Digital Carrier Modulation schemes of Coherent and Non-coherent type based on Probability of error)
ARM Processor Based System Design	ECCC0408	2017	Employability (Understand the architecture of ARM Processor Implement real



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			time projects using 32 bits ARM Processor)
Embedded Software and Development	ECCC0409	2017	Employability The fundamentals of embedded system hardware and firmware design explored. Concepts for embedded processor selection, hardware/firmware partitioning, circuit design, circuit layout, circuit debugging, development tools, firmware architecture, firmware design, and firmware debugging.
Microwave and Radar Communications	ECCC0410	2017	Employability (Integrate the concept of bunching and velocity modulation to summarize the operation of micro wave tubes and the high frequency limitations of conventional tubes. Analyze the principle, operation and characteristics of different Radars and its applications)
Antenna and Wave Propagation	ECCC0411	2017	Employability (Analyze antenna parameters Evaluate the features and analyze the radiation pattern of antennas by using simulation tools Compare wave propagation techniques and illustrate the radio wave behavior in different modes of communications)
Analog Electronic Circuits Laboratory	CCEC0201	2017	Skill Development and Employability (Its an important subject in the curriculum. Its also equivalently important for facing interviews in industry.)



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Electronics Workshop-II	CCEC0601	2015	Skill Development Design and implement different electronics circuits in hardware to test performance and application.
Mobile Communication: MIMO-OFDM	DECS0431	2015	Skill Development and Employability Emerging issues for implementing MIMO wireless channels. Different fading channel distributions in multipath wireless channel. OSTBC design for multiple antenna system. Computation of performance parameters of MIMO wireless system
Microwave Engineering and Antenna Design	DECS0432	2015	Employability (Analyze antenna parameters Evaluate the features and analyze the radiation pattern of antennas by using simulation tools Compare wave propagation techniques and illustrate the radio wave behavior in different modes of communications)
CCNA Routing and Switching	DECS0234	2015	Skill Development and Employability Install, operate, and troubleshoot a medium-sized network, including connecting to a WAN and implementing network security. Describe the effects of new technologies such as IoT, IWAN, and SDN on network evolution
4G LTE Communication Technology	DECS0435	2015	Skill Development and Employability Understand the system architecture and the functional standard specified in LTE 4G.



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Analyze the role of LTE radio interface protocols and EPS Data convergence protocols to set up, reconfigure and release data and voice from users.
Cell Site and BTS Operation & Maintenance	DECS0236	2015	Employability (Adhere and conduct site PM (preventive maintenance) and Task Reporting planes, as per organization's Norms . This will lead employment in BTS operation & maintenance engineering. )
RF Planning and Drive Test	DECS0237	2015	Employability (Students will develop skill on GSM RF Planning tool, Use of mapping software's like Map info/Google KLM, drive test tool TEMS and NEMO Tool for 4G LTE optimization with field exposure This will lead employment as RF engineer)
Advanced C Programming & Data Structure	DEES0411	2015	Employability Provides the knowledge of basic data structures and their implementations. Gives understanding for importance of data structures in context of writing efficient programs. Develops skills to apply appropriate data structures in problem solving.
Real Time Operating System & VXWORKS	DEES0413	2015	Skill Developemnt and Employability Provide a basic understanding of Real-Time Requirements To understand the complexities of RTOS scheduling and synchronization. To learn how to



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			configure, boot, test and deploy real-time embedded systems. To give students the confidence to apply these concepts to their next RTOS project
Model Based System Design	DEES0414	2015	Skill Development and Employability Build mathematical models for components in a system. Follow a process of continuous refinement and improvement to generate accurate models. Connect component models together to model a larger more complex system. Set up and run Model-in-the-Loop Simulations (MIL). Set up and run real-time simulations for a physical system. Set up and run Hardware-in-the-Loop Simulations (HIL). Apply basic control algorithms to a real physical system. Deploy a control algorithm on a real-time target. Apply verification and validation methods to a model of a physical system. Use Design of Experiment methods to create models of physical systems.
Linux: Kernel Programming and Device Driver	DEES0415	2015	Skill Development and Employability Configure, compile, and install a Linux kernel/kernel module from sources. Navigate and read the Linux kernel sources. Understand and use correctly the Linux kernel internal services needed by devices drivers, including mutual exclusion, memory mapping, kernel memory allocation,



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			interrupt handling, timekeeping, and scheduling. Design and implement a kernel module. Modify, or design and implement a device driver. Measure the performance of what you have modified or implemented.
Internet of Things	DEES0416	2015	Employability, Skill development (Understand the meaning of the Internet of Things and its importance. Examine future market opportunities that can be discovered by IoT. Study of wireless sensor network protocols.)
Digital System Design using VERILOG	DEVL0421	2015	Skill Development, Entrepreneurship (Pursue a bright career as a RTL design and verification Engineer and Verilog Programmer in VLSI industry which leads to Employability)
FPGA Architecture and Design	DEVL0122	2015	Employability (Handle different FPGA architecture which results Employability)
HDL Synthesis and System Architecture	DEVL0423	2015	Employability (RTL level synthesis of digital circuits, Optimization of architecture, Solve timing issues which leads to Employability in different industrial sectors.)
VLSI Test Principle and Testable Design	DEVL0127	2015	Employability (Develop test pattern generation algorithm Develop different DFT techniques. Do memory testing. Develop boundary scan. Pursue



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			career as VLSI test engineer results in Employability.)
Electrical Machine-II	CCEE0102	2015	Skill development ( Students will develop the SKILL about various rotating machine like Alternator, Synchronous Motor, 3 phase IM, 1 phase IM etc.)
Electrical Measurement & Instrumentation	CCEE0103	2015	Skill development ( Students will develop the SKILL about various bridges used to measure R, L, C and measuring instruments like Galvanometer, Potentiometer, CT & PT )
Control Systems	CCEE0104	2015	Skill development ( Students will develop the SKILL related to time domain and frequency domain analysis, root locus, bode plot, nyquist plot etc.)
Transmission & Distribution	CCEE0105	2015	Skill development ( Students will develop the SKILL related to various electrical power transmission and distribution schemes available in India.)
Power Electronics	CCEE0106	2015	Skill development ( Students will develop the SKILL about various power electronics devices like rectifier, Inverter, Chopper, AC voltage controller, Cycloconverter etc)
Micro Processors & Micro Controllers	CCEE0109	2015	Skill development ( Students will develop the SKILL related to various microprocessors and microcontrollers used in electronics circuits)
Network Theory Lab	CCEE0201	2015	Skill development ( Students will develop the SKILL related to verify different theorems practically)
Electrical Machine-II Lab	CCEE0202	2015	Skill development ( Students will develop the SKILL to perform





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			various experiments related to Alternator, Synchronous motor, 1 phase and 3 phase IM etc)
Measurement & Instrumentation Lab	CCEE0203	2015	Skill development ( Students will develop the SKILL about experiments related to bridges used to measure R, L, C and measuring instruments like Galvanometer, Potentiometer, CT & PT )
Control Systems lab	CCEE0204	2015	Skill development ( Students will develop the SKILL to perform experiments based on various control system. )
Power Electronics Lab	CCEE0205	2015	Skill development ( Students will develop the SKILL about various experiments related to rectifier, Inverter, Chopper, AC voltage controller, Cycloconverter under different load condition)
Introduction to Linux	CCEE0207	2015	Employability(Students will familiarize with LINUX Operating system)
Micro Processors & MicroControllers Lab	CCEE0208	2015	Skill development ( Students will develop the SKILL related to experiments on various operations of microprocessors and microcontrollers used in electronics circuits)
General PLC	DEIA0111	2015	Skill development(Students will develop skill of designing Automatic Control System using PLC)
Basic Electrical (Automation based) and Panel Designing	DEIA0211	2015	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using relevant software & hardware tools)



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Variable Frequency Drive	DEIA0212	2015	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using relevant software & hardware tools)
Allen Bradley SLC 500	DEIA0413	2015	Skill development (Students will gain Functional skill set with hands-on; on System Automation by using relevant software & hardware tools)
Siemens S7-300	DEIA0414	2015	Skill development (Students will gain Functional skill set with hands-on; on System Automation by using relevant software & hardware tools)
SCADA Schneider Wonderware InTouch and Win CC Flexible	DEIA0415	2015	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using SCADA-Schneider-Wonderware In Touch tools)
Schneider MODICON TSX-Micro, GE Versamax- Microplus	DEIA0416	2015	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using Allen Bradley Micrologix1000, Siemens S7-300 tools)
HMI-Allen Bradley-Panel View C600	DEIA0213	2015	Skill development (Students will gain Functional skill set with hands-on; on PLC based Automation System by using HMI-Allen Bradley-Panel View C600 tools)
Overview of Transmission System	DEOM0131	2015	Skill Development ( Students will develop different transmission scheme with software application)



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Overview of Distribution System	DEOM0132	2015	Skill Development ( Students will develop different distribution scheme with software application)
Power and Distribution Transformer Operation and Testing	DEOM0431	2015	Skill Development ( Students will develop skill set with hands on training & practice on Type & Routine test of distribution transformer upto 33KV class)
System Protection and Auxiliaries	DEOM0432	2015	Skill Development ( Students will develop different protection scheme with hardware & software integration)
Construction Details of HT and LT lines, Cables and Testing	DEOM0433	2015	Skill Development ( Students will develop skill set with hands on training & practice on Routine test of LT & HT Line Cable upto 33KV class)
Safety Practice and First Aid	DEOM0231	2015	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques)
Electrical System Layout and Drawing	DEOM0232	2015	Skill Development ( Students will develop different electrical system layout with software application)
Power system market, economics and energy audit	DEOM0434	2015	Employability (Student will learn power market operation & energy audit process with hands on practice which will lead them to placement in power & energy trading company)
Design of transformer core	DETD0121	2015	Skill Development ( Students will Manufacture three phase Distribution Transformer of 11KV class as per BIS specification)
Design of transformer winding	DETD0122	2015	Skill Development ( Students will Manufacture three phase



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			Distribution Transformer of 11KV class as per BIS specification)
Design of transformer tank & Accessories	DETD0123	2015	Skill Development ( Students will Manufacture three phase Distribution Transformer of 11KV class as per BIS specification)
Testing and Commissioning	DETD0421	2015	Skill Development ( Students will develop skill set with hands on training & practice on Type & Routine test of distribution transformer upto 33KV class)
Safety and protection	DETD0422	2015	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques & operation of protection schemes in transformer)
Transformer Repair & Maintenance	DETD0423	2015	Skill Development ( Students will develop skill set with hands on training & practice on Repair & Maintenance of distribution transformer upto 33KV class)
Renewable Energy Sources and Technology	DERE0161	2015	Skill Development (Students will learn and develop the different technologies of renewable energy Sources)
Solar Photovoltaic Technology	DERE0162	2015	Skill Development (Students will learn and develop the different technologies of Solar photovoltaic)
Solar Thermal Technology	DERE0163	2015	Skill Development (Students will learn and develop the hybrid generations that combines the solar photovoltaic along with the Thermal power generations)
Solar Systems for Buildings	DERE0464	2015	Skill Development (Students will learn and develop the roof top solar generation system)



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Solar Power Plant	DERE0465	2015	Skill Development (Students will learn the principle of solar power plant)
Decentralized and Smart Power Grids	DERE0466	2015	Skill Development (Students will learn the principle of solar power plant)
Solar Photovoltaic Laboratory	DERE0267	2015	Skill development (Students will gain the knowledge with hands-on; on different smart power grids like wind, solar by using relevant software & hardware tools)
Solar Thermal Laboratory	DERE0268	2015	Skill Development (Students will develop hands-on, on different solar related live product/project)
Theory of Machines	CCME0405	2015	Skill And Employability ( Student will learn how to analyze the motions of mechanisms, design mechanisms)
Manufacturing Technology 1	MECC0401	2017	Skill And Employability (Students will have Knowledge and Skills to Understand Actual Manufacturing Processes used in Industry and will be Able to Correlate a Specific Process with the Part / Component being Produced. Students will be Able to Select the Most Optimum Manufacturing Process for a Specific Product Design and Application.)
Manufacturing Technology 2	MECC0402	2017	Skill And Employability (Students will be Able to Do Process Planning, Develop CNC Part Programs. Students will have Knowledge and Skills to Operate CNC Machines.)
Finite Element Analysis	MECC0404	2017	Skill And Employability (Students will be Able to Deploy Practical and Industrial Approach using FEA)



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			towards Solving Engineering Problems)
Internal Combustion Engines	MECC0406	2017	Skill And Employability (Students will be able to test internal combustion engines for various performance parameters using engine test rigs.Students will be able to carry out emission tests using various types of fuels commonly used in internal combustion engines.)
Renewable Energy Systems	MECC0408	2017	Skill (To have a knowledge of energy scene in India. To acquire the skill of analyzing and designing renewable energy systems. To expose the students about energy demand and supply situation in India.)
Fluid Power	MECC0409	2017	Skill (Students will be able to identify various elements used in fluid power systems and will be able to deliver fluid power circuit diagrams.)
Mechanics of Machines	MECC0410	2017	Skill (Students will have knowledge and skills to analyze, design and develop mechanisms suiting specific applications. Students will have knowledge skills to study and understand working of complex mechanisms and machines enabling them to safely operate and maintain such installations.)
Fluid Mechanics and Heat Transfer	MECC0414	2017	Skill And Employability (Students will be able to Analyze and Design various Equipment used in Industry using Principles of Fluid Mechanics and Heat Transfer.)



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Jigs and Fixtures	DECM0101	2015	Employability and Skill development (Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Process Planning and Cost Estimation	DECM0102	2015	Employability and Skill development (Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Conventional Machining for Cylindrical Shape Component	DECM0201	2015	Employability and Skill development (Makes student Industry ready through hands-on education. Provides required industrial experience within the



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Conventional Machining for Prismatic Shape Component	DECM0202	2015	Employability and Skill development (Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
CNC Machining	DECM0601	2015	Employability and Skill development (Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling





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			learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Non-Traditional Machining and 3D Printing	DECM0602	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Wood Engineering	DECM0203	2015	Employability and Skill development (Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes



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			and machineries. Strengthens the Industrial-Institutional partnership.)
Introduction to Refrigeration & HVAC	DERC0101	2015	Employability and Skill development (This helps student to have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air conditioning and Refrigeration Technology so that they will be able to properly equipped to take up gainful employment in this sector.)
Control System for Refrigeration & Air Conditioning	DERC0201	2015	Employability and Skill development(This helps student to have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air conditioning and Refrigeration Technology so that they will be able to properly equipped to take up gainful employment in this sector.)
Design and Maintenance of Automobile Air Conditioning	DERC0202	2015	Employability and Skill development (This helps student to have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air conditioning and Refrigeration Technology so that they will be



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			able to properly equipped to take up gainful employment in this sector.)
Maintenance and Testing of Refrigerator	DERC0203	2015	Employability and Skill development (This helps student to have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air conditioning and Refrigeration Technology so that they will be able to properly equipped to take up gainful employment in this sector.)
Maintenance and Testing of Coolers, Window and Split AC	DERC0204	2015	Employability and Skill development (This helps student to have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air conditioning and Refrigeration Technology so that they will be able to properly equipped to take up gainful employment in this sector.)
Design and Maintenance of Central Air Conditioning Plant	DERC0401	2015	Employability and Skill development (This helps student to have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air



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			conditioning and Refrigeration Technology so that they will be able to properly equipped to take up gainful employment in this sector.)
Design and Maintenance of Cold Storage	DERC0102	2015	Employability and Skill development (This helps student to have acquired relevant appropriate and adequate technical knowledge together with the professional skills and competencies in the field of Air conditioning and Refrigeration Technology so that they will be able to properly equipped to take up gainful employment in this sector.)
Joining Processes & Technology	DEWD0401	2015	Employability and Skill development (This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry. Skill certification will make the candidate recognized in national and international levels in the industry as qualified welding inspector.)
Arc Welding, Gas Welding & Brazing	DEWD0201	2015	Employability and Skill development (This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry. Skill certification will make the candidate recognized in national and international levels in the industry as qualified welding inspector.)



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Metal Transfer & Weld Metallurgy	DEWD0402	2015	Employability and Skill development (This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry. Skill certification will make the candidate recognized in national and international levels in the industry as qualified welding inspector.)
Design of Welded Joints	DEWD0101	2015	Employability and Skill development (This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry. Skill certification will make the candidate recognized in national and international levels in the industry as qualified welding inspector.)
Welding of Stainless Steel, Aluminum, Copper, Cast Iron and Hard Surfacing	DEWD0601	2015	Employability and Skill development (This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry. Skill certification will make the candidate recognized in national and international levels in the industry as qualified welding inspector.)
Testing of Welded Joints (DT, NDT & Microstructure)	DEWD0602	2015	Employability and Skill development (This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry. Skill certification will make the candidate recognized in national and international levels in the



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			industry as qualified welding inspector.)
Introduction to Automobile Engineering	DEAE0101	2015	Employability and Skill development (This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Subsystems of Automobile	DEAE0401	2015	Employability and Skill development (This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Design and Maintenance of Electric Vehicles	DEAE0402	2015	Employability and Skill development (This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Entrepreneurship Opportunities in Automobile Trade	DEAE0102	2015	Employability and Skill development (This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in



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			automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Maintenance of 4 Wheeler	DEAE0201	2015	Employability and Skill development (This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Maintenance of 2 Wheeler	DEAE0202	2015	Employability and Skill development (This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Operation and Maintenance of Diesel Forklift and Hydraulic Equipment's	DEAE0203	2015	Employability and Skill development (This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Fundamentals of Microprocessor and Microcontroller	DEOC0111	2015	Employability Basic concept of digital fundamentals to Microprocessor based personal computer system. identify a detailed s/w & h/w



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			structure of the Microprocessor, illustrate how the different peripherals (8255, 8253 etc.) are interfaced with Microprocessor, distinguish and analyze the properties of Microprocessors & Microcontrollers, analyze the data transfer information through serial & parallel ports.
Satellite Communication System	DEOC0112	2015	Employability The fundamentals of satellite communication. To provide them with a sound understanding of how a satellite communication system successfully transfers information from one earth station to another. To expose them to examples of applications and tradeoffs that typically occur in engineering system design, and to ask them to apply the knowledge in design problems
Radar System Engineering	DEOC0113	2015	Employability Compare working of different types of radars. Analyze the statistical parameters of Noise and Radar cross section of targets. Distinguish the fixed and moving targets using different types of radar systems. Explain various techniques employed in radar receivers for detection of signals in noise. Observe the variation in parameters of radar system by the estimation of noise figure & noise temperature. Identify the different types of display devices & duplexers





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Transmission Lines and Waveguides	DEOC0114	2015	Employability Discuss the fundamental concepts of wave propagation in Transmission Lines and Wave Guides. Analyze the line parameters and various losses in transmission lines. Apply smith chart for line parameter and impedance calculations. Evaluate the characteristics of parallel plane and rectangular wave guides. Evaluate the characteristics of Circular waveguides. Evaluate the characteristics of resonators.
Power System Generation	DEOC0121	2015	Skill development ( Students will learn the SKILL of generating electrical powers from different sources used in Power System)
Electromagnetic theory	DEOC0122	2015	Employability Knowledge of, physical interpretation, and ability to apply Maxwell's equations to determine field waves, potential waves, energy and charge conservation conditions. Experimental measurement of voltages induced by time varying magnetic flux. Flux determination.
Power Plant Engineering	DEOC0131	2015	Skill development (Students will be able to work out the problems related to power plant engineering. Students will be able to understand the basics of power plant design.)
Basic Metallurgy	DEOC0134	2015	Employability and Skill development (Understand the correlation between processing,



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			structure and properties of metals. Ensure production of metallic components for use in consumer or engineering products)
PCB Fabrication and Circuit Prototyping	DEOC0211	2015	Employability To design and fabricate PCB for prototyping as well as in Industrial Production environment. This will help students to innovate faster with electronics technology.
Fiber Optics Technology	DEOC0212	2015	Employability Recognize and classify the structures of Optical fiber and types. Discuss the channel impairments like losses and dispersion. Analyze various coupling losses. Classify the Optical sources and detectors and to discuss their principle. Familiar with Design considerations of fiber optic systems. To perform characteristics of optical fiber, sources and detectors, design as well as conduct experiments in software and hardware, analyze the results to provide valid conclusions.
MATLAB for Engineers	DEOC0213	2015	Employability Able to use Mat lab for interactive computations. Familiar with memory and file management in Mat lab. Able to generate plots and export this for use in reports and presentations. Able to program scripts and functions using the Mat lab development environment.



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Basic Electrical Maintenance	DEOC0221	2015	Skill development(This course will enable students to safely undertake electrical maintenance of domestic and Industrial appliances)
Automotive Electrician	DEOC0222	2015	Skill development(Student will acquire the skills to identify and solve problems related to electrical parts (harness) of the vehicle)
Advanced power electronics	DEOC0421	2015	Skill development (Students will gain Functional skill set with hands-on; on Advance Applications in Power Electronics by using relevant tools)
Electrical Drives	DEOC0422	2015	Skill development (Students will gain Functional skill set related to different DC & AC drives.)
Advance Control System	DEOC0423	2015	Skill development (Students will gain Functional skill related to control theory, Advanced process control (APC) that refers to a broad range of techniques and technologies implemented within industrial process control systems
Advanced Structural Analysis	ISSD1101	2016	Skill development(• Skill in developing computer program for the structural analysis of two-dimensional frames. • To obtain some experience in the use of modern structural analysis programs.)
Structural Dynamics	ISSD1102	2016	Skill development(To provide basic knowledge of mathematics, science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system,



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			component or process as per needs and specifications when subjected to dynamic loads.)
Theory of Elasticity & Plasticity	ISSD1103	2016	Skill development (• Ability to apply the knowledge of mathematics, science and engineering with Elasticity concept to solve problems in two Dimensional Problems in Polar Coordinates. • To provide the students with basic skill of plasticity concept applicable in structural systems)
Architectural Design	ISSD1104	2016	"Skill development(Provide skill with a well-educated workforce that is ready and able to perform valuable architectural and construction engineering and managerial services immediately after graduation The ideas / concepts learned in Basic Design and other related subjects have to be carried forward into the architectural design now envisaged. The exercises may be taken up as mentioned herein.)"
Computer Graphics (2D & 3D Drafting)	ISSD1106	2016	Skill development(At the end of the course, the students have a skill and employability to: Event driven I/O and callback programming & typical structure of an interactive, real-time computer graphics program • 2&3D transformations, homogeneous co-ordinates, post-multiplication • Modelling and instantiation)



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Civil Engg. MATLAB Lab	ISSD1107	2016	Employability (Differential equations and its application to engineering problems Soft computing applications to engineering problems)
Finite Element Method	ISSE1201	2016	"Skill development(• Enable the students to identify, formulate and skill to engineering problems related to one, two and three Dimensional structures subjected to static loads. • To show the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to wrong analysis)"
Design of Prestressed Concrete Structures	ISSE1202	2016	Skill development(Skill to control of the losses involved of pre-stressing concrete and ability to justify advantages and disadvantage.)
Concrete Technology	ISSE1203	2016	Skill development(• To study and understand various types of technology added in concrete • Have a skill to develop in design of various grades of concrete)
Research Methodology	ISRM1201	2016	"Skill development (1. Skill to research problem formulation. 2. Analyze research related information 3. Follow research ethics 4. Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.)"
3D Modeling using ANSYS and CATIA	ISSE1205	2016	Skill development(Introduction to Engineering Design Different



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			types of Numerical Methods & Applications, Practical Applications of FEA, Basics of finite element method (FEM),)
Prefabricated Structures or Pre-engineered Buildings	ISSE1206	2016	"Skill development(• Grasp of the construction methods using these elements have the skill of the construction methods using these prefabricated elements)"
Renovation and Retrofitting of green structures	ISSE1207	2016	"Skill development(1. Skill to research problem formulation. 2. Analyze research related information 3. Follow research ethics 4. Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.)""
Advanced Construction Materials	ISSE1208	2016	"Skill development(• To study the polymers in civil engineering construction • To study the corrosion of concrete in various environments)"
Soil Dynamics and Geotechnical Earthquake Engineering	ISSE1209	2016	Skill development(Develop skill in applying theory of vibrations to basic facets of soil behavior under dynamic loading together with the exposure of the fundamental principles of wave propagation in engineering example)
Evolution of Management Thought	MGGM1101	2011	Application of Basic management principles- Skill development
Basic Communication Skills	MGGM1102	2011	Competence in oral, written, and visual communication: Employability, Use current technology Practical's - Skill development



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Managerial Economics	MGGM1104	2014	Analysis of demand, supply, production, market; Application of different economic paradigms using Microeconomics concepts- Employability
Managerial Computing	MGIT1101	2011	MS Word, Excel, power point- Skill development
Accounting for Managers	MGFM1101	2011	Preparation of financial statement, preparation of cost sheet and financial analysis of financial statements: Employability & Entrepreneurship
Marketing Management	MGMK1101	2011	Interpretation complex marketing issues facing by a variety of enterprises: Employability & Entrepreneurship
Organizational Behavior	MGGM1105	2011	Analyze and compare different models of Human Behavior - Employability, Entrepreneurship
Management Information Systems	MGIT1202	2011	Utilize Management Information Systems in achieving business competitive advantage - Skill development
Communication Perspective of Management	MGGM1206	2011	Write business proposals and reports- Skill development
Human Resource Management	MGHR1201	2011	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability & Entrepreneurship
Management & Market Research	MGGM1207	2011	Applying marketing research into the broader strategic planning process, with reference to existing theories, concepts and models from within the program: Employability & Entrepreneurship
Financial Management	MGFM1202	2011	Application of concepts of financial management,



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			investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship
Production & Operations Management	MGOM1201	2011	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship
Economic Environment of Business	MGGM1208	2014	Analysis of economic policy and environment-Employability, Entrepreneurship
Summer Internship Programmed	MGGM1211	2011	To make self-disciplined, self-motivated and integrate theory and practice- Skill development
Strategic Management and Ethics (Core)	MGGM2318	2015	Conduct analysis of competitive situations of the enterprise and introduction of ethical practices - Employability, Entrepreneurship
Sales and Distribution Management (Elective)	MGMK2302	2011	Manage and enhance the sales force productivity and performance: Employability & Entrepreneurship
Logistics and Supply Chain Management (Elective)	MGOM2302	2011	Analyzing the manufacturing operations of a firm- Employability, Entrepreneurship
Legal Environment for Enterprise	MGGM2315	2011	Analyze business issues and to understand broader legal issues- Employability, Entrepreneurship
Project Management	MGGM2316	2011	Describe a project life cycle, identify the resources needed for each stage, develop a project scope - Employability, Entrepreneurship
Live Project	MGEL2401	2015	To make self-disciplined, self-motivated and integrate theory and practice- Skill development
GIS and Participatory Planning	MGEL2403	2015	Identification of the resources needed, develop a project scope





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			utilizing GIS technology- Skill development
Rural Marketing	MGMK2312	2015	Able to successfully enter the rural market for promotion of his products and services: Employability & Entrepreneurship;
Services Marketing	MGMK2313	2015	Able to deliver services successfully Employability & Entrepreneurship
Customer Relationship Management	MGMK2314	2015	Formulate and assess strategic, operational and tactical CRM decisions: Employability & Entrepreneurship
Consumer Behavior	MGMK2305	2011	Detect the relevance of consumer behavior to the entire marketing process, the nature and stages of consumers' decision making and the factors influencing consumers' choices: Employability & Entrepreneurship;
Brand Management and Marcomm	MGMK2306	2011	Appraise key issues in managing brand portfolio and making strategic branding decisions: Employability & Entrepreneurship
B2B Marketing	MGMK2307	2011	Effective B2B marketing strategy design and execution: Employability & Entrepreneurship;
Retail Management	MGMK2315	2011	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
International Marketing	MGMK2316	2015	Assess an organization's ability to enter and compete in international markets: Employability
Social Marketing	MGMK2310	2011	Develop a strategic plan for identifying opportunities for



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			implementing social marketing in a company:Employability & Entrepreneurship
Digital Marketing	MGMK2311	2015	Apply various concepts and importance of digital marketing - Visualize various application in diverse areas of sales & marketing - Entrepreneurship;
GIS for Marketing	MGMK2317	2015	Develop customer marketing applications such as acquisition, marketing, messaging, purchasing, and retention: Employability & Entrepreneurship;
Advanced Managerial Accounting	MGFM2310	2015	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship;
Financial Derivatives	MGFM2311	2015	Competent in derivative products such as forward, future, option & swap and to make on line trading on futures and options: Employability & Entrepreneurship;
Financial Institutions, Markets & Services	MGFM2305	2011	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;
Commercial Banking and ALM	MGFM2306	2011	Use techniques for Asset/Liability Management for smooth operation of the Bank. This will help in employability in Banking Sector - Employability & Entrepreneurship
Insurance & Risk Management	MGFM2307	2011	Use techniques for identifying, measuring and managing the risk - Employability & Entrepreneurship



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Security Analysis And Portfolio Management	MGFM2308	2011	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal & Financing	MGFM2309	2014	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Corporate Restructuring	MGFM2312	2015	Use techniques of Financial Corporate valuation and Engineering - Employability & Entrepreneurship
Financial Planning and Wealth Management	MGFM2313	2015	Use methods to determine the ways of personal tax planning, retirement and estate planning for an individual and design a financial plan -Employability & Entrepreneurship
Current Asset Management	MGFM2314	2015	Evaluate comparative current asset management policies and their impact on the firm's profitability, liquidity, risk and operating flexibility: Employability & Entrepreneurship;
Service Operations Management	MGOM2303	2011	Carry out optimal inventory management- Employability, Entrepreneurship
Total Quality Management	MGOM2311	2011	Use statistical approach for quality control, ISO and QS certification process- Employability, Entrepreneurship & Skill development



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Technology Management	MGOM2312	2015	Technology adaptation and technology transfer- Employability, Entrepreneurship
Purchase and Materials Management	MGOM2305	2011	Develop materials requirement planning technique, handle issues related to overstocking and under stocking- Employability, Entrepreneurship
Environment & Industrial Safety	MGOM2306	2011	Formulate or design a system, process, procedure, or program to meet desired safety needs- Employability, Entrepreneurship
Business Process Re-engineering & Simulation	MGOM2307	2011	Model and develop improved business processes that require IT and organizational redesign- Skill development
Enterprise Resource Planning	MGOM2308	2011	Develop Generic Model of ERP and Implementation of General ERP Methodology- Employability, Entrepreneurship & Skill development
Production Planning and Inventory Control	MGOM2309	2011	Develop Production planning and handle control issues in both service and manufacturing industries- Employability, Entrepreneurship
Supply Chain Modelling	MGOM2310	2011	Value creation and revamping supply chains for becoming competitive in the market- Employability, Entrepreneurship
Organization Change and Development	MGHR2305	2011	Bring out appropriate changes in the organization and becoming a change agent- Employability, Entrepreneurship
Knowledge Management	MGHR2308	2011	Critically apply theories and models to organizations for success- Employability, Entrepreneurship



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Human Resource Planning and Sourcing	MGHR2312	2015	Development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes- Employability, Entrepreneurship
Training and Development	MGHR2311	2011	Assess, design and implement various methods, techniques and sources of training- Employability & Skill development
Leadership Development	MGHR2313	2015	Develop critical thinking skills and lead the organization- Employability, Entrepreneurship
Organization Structure and Design	MGHR2310	2014	Designing effective organizational structure keeping in view business strategies - Employability, Entrepreneurship
Rural Immersion Programmed (Practice)	MGRM2305	2015	Carry out participatory planning with the community, develop strategies for intervention - Employability & Skill development
Sustainable Livelihood System	MGRM2306	2015	Introduce and train people on alternative livelihood options- Employability, Entrepreneurship & Skill development
Public System Management	MGRM2307	2015	Comprehend and apply the basic principles of public administration model - Employability, Skill development
Natural Resource Management	MGRM2309	2015	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve management objectives- Employability and Entrepreneurship
Social Entrepreneurship	MGRM2310	2015	Students will be able to establish social enterprises- Entrepreneurship



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Gender and Development	MGRM2311	2015	Utilize the different tools and techniques for gender planning, analysis and evaluation in the development sector- Employability
Hospital Administration	MGHM230 1	2017	Create policy and processes and execute decisions in compliance with the legal, regulatory and ethical considerations inherent in managing healthcare systems and organizations- Employability
Management Information Systems for Hospital	MGHM230 2	2017	Analyze existing systems and design technology solutions appropriate to the hospital- Employability & Skill development
Management of Out-Patient Department	MGHM230 3	2017	Deal the issues effectively in emergency services, can plan, organize and supervise the activities of Minor Operation Theatre, Manage treatments of referral & cross referral cases- Employability & Skill development
Risk and Disaster Management	MGHM230 4	2017	Handle Security Management Effectively in Hospitals, Control and Prevent hospitals from getting infected, Plan and design fire protection in hospitals, Handel radioactive waste collection and disposal in hospitals- Employability
Legal and Ethical Issues for Hospitals	MGHM230 6	2017	Handle medico-legal issues effectively, Ensure appropriate patient relationship, Handle trade unions - Employability
Project Management in Health Care	MGHM230 8	2017	Plan and implement health sector projects, Carry out feasibility analysis of health sector projects, Carry out demand analysis in health care sector- Employability



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Marketing of Hospital Services	MGHM2309	2017	Handle challenges in hospital services marketing, Design new hospital services, Engage appropriate channels for hospital service marketing, Use marketing communication with technical knowledge- Employability, Entrepreneurship
Patient Care and Behavior	MGHM2311	2017	Motivate patients and instrumental in shaping positive attitude towards hospital, Carry out audit on patient behaviors, Handle the role of hospital administrator effectively- Employability & Skill development
Web Traffic Generation	MBDM2201	2017	Increase traffic in any website, Popularizing websites- Employability, Entrepreneurship & Skill development
Link Building & e-WoM	MBDM2202	2017	Increase links through web, Building relationships through the web- Employability, Entrepreneurship & Skill development
Social Media Marketing	MBDM2203	2017	Develop effective social media marketing strategies for various types of industries and businesses- Employability, Entrepreneurship & Skill development
Branded Content and the Future of Media	MBDM2204	2017	Develop and market branded contents, Employability,
Ideas, Brands and Business	MBDM2205	2017	Make strategic branding decisions- Employability, Entrepreneurship
Brand Planning and Consumer Insights	MBDM2206	2017	Design and execute intelligent and innovative research studies to scan the environment, identify consumer insights, and use those



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			insights to manage the brand- Employability, Entrepreneurship
Digital Strategies and Planning	MBDM2207	2017	Create a digital marketing plan and budget; identify suitable measures to set objectives and evaluate digital marketing - Employability & Entrepreneurship;
Mobile & E-Mail Marketing	MBDM2208	2017	Ability for technology adoption, various devices, changing nature of services and ecosystems - Skill development
Search Engine Optimization	MBDM2209	2017	Able to improve sales volume through search engine optimization - Skill development
Search Engine Marketing	MBDM2210	2017	Able to improve sales volume through Google AdWords and other elements of Search Ad - Skill development
Technology of e-Commerce	MBDM2211	2017	Able to integrate distributed database technologies within the internet architecture - Skill development
Online Reputation Management	MBDM2212	2017	Ability to give a structure of quality websites and portals - Skill development
Web Content Writing	MBDM2214	2017	Ability to develop creativity and creating quality content- Skill development
Affiliate Marketing	MBDM2213	2017	Able to structure quality web designing for affiliate marketing - Skill development
Basics of Data Warehousing and Business Intelligence	MGDA1106	2016	Able to make better business decisions by using Data warehousing business intelligence tool- Skill Development
Advance Business Communication	MGDA1209	2016	Able to make better business communication- Employability & Entrepreneurship





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Information System in Business	MGDA1210	2016	Analyze actions affecting the business as well as prepare cost estimates and forecasts- Employability & Entrepreneurship
ETL , Data modeling and Cube Design	MGDA1215	2016	Able to analyze data objects and figuring out the relationships between them- Employability and Skill development
Data Visualization with Power BI and Tableau	MGDA1216	2016	Able to represent data visualization for business analytics- Skill development
Unstructured Data Analytics & Machine Learning	MGDA1213	2016	Make data-driven recommendations and decisions based on only the input data- Skill development
Advanced Data Modelling & Mining with R	MGDA1214	2016	Use the tool to clean, analyze, and graph data- Skill Development
Project (Project Mode in Organization)	MGDA1200	2016	It will enable learner to easily cope up with harsh industry or startup environments- Employability & Entrepreneurship
Operations Research	MBDM1202	2017	Manage and enhance the sales force productivity and performance: Employability & Entrepreneurship
Development Project Management Planning Tools and Techniques-I	MGDM 1102	2014	Carry out Appraisal, Planning, and Monitoring & Evaluation and impact assessment of development projects - Employability, Entrepreneurship
IT Enabled Communication	MGDM 1103	2014	Use IT tools for effective communication - Skill development
Micro and Macro Economics	MGDM 1104	2014	Application of different economic paradigms using Microeconomics concepts- Employability



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Development Marketing	MGDM 1105	2014	Able to make appropriate decision in development marketing-Employability
Accounting for Development Manager	MGDM 1106	2014	Preparation and analyze of financial statements - Employability & Entrepreneurship
Development Project Management Planning Tools and Techniques-II	MGDM 1202	2014	Carry out Appraisal, Planning, and Monitoring & Evaluation and impact assessment of development projects - Employability, Entrepreneurship
Integrated Development Communication	MGDM 1203	2014	Communicate appropriately using tools for development - Employability
Rural Entrepreneurship Development	MGDM 1204	2014	Write business proposals for rural enterprise development-Employability, Entrepreneurship
Social Enterprise Promotion	MGDM 1205	2014	Creating social relevant enterprises.-Entrepreneurship
Financial Management for Development Manager	MGDM 1206	2014	Handle financial management, investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship;
Rural and Community Group Behavior	MGDM 1207	2014	Observe and analyze social issues and dynamics at rural level, design appropriate intervention for effective community group behavior towards implementation of development schemes - Employability,
Organizing Conference –I	MGDM 1221	2014	Learning skills for organizing events - Employability,
Internship-I	MGDM 2331	2014	To apply and evaluate the learned concepts, theories in real time situations-Employability, Entrepreneurship & Skill development



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Internship-II	MGDM 2332	2014	To apply and evaluate the learned concepts, theories in real time situations-Employability & Skill development
Internship-III	MGDM 2333	2014	To apply and evaluate the learned concepts, theories in real time situations-Employability & Skill development
Gender Mainstreaming for Development	MGDM 2301	2014	Being sensitive to gender issues in the society, analyze the facets of Gender and its role for development - Employability & Skill development
Skill Building and Employability Training	MGDM 2302	2014	Understand the skill ecosystem and its dimensions, Effectiveness measurement of skill training initiatives - Employability
Financial Inclusion & Micro-finance	MGDM 2303	2014	To appraise the scenario of financial inclusion in the country , acquire skills to operate in Micro Finance sector - Employability, Entrepreneurship
Rural Haat & Market Analysis	MGDM 2304	2014	Develop skills for assessing rural markets - Employability, Entrepreneurship & Skill development
Agri-Business Management	MGDM 2305	2014	Apply principles of management for food and agri business sector, develop projects on agri business by collecting and analyzing data-Employability & Entrepreneurship;
HR Issues and Capacity Building of Development Organizations	MGDM 2306	2014	Analyze the key areas related to administering the human related issues such as motivation, compensation, appraisal, career planning, diversity, ethics, and training in development organizations-Employability



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Mini Bharat Darshan	MGDM 2351	2014	Develop Interventions and analyze the factors for effective interventions - Employability, Entrepreneurship
Internship-IV	MGDM 2431	2014	To apply and evaluate the learned concepts, theories at real time situations-Employability, Skill development
Internship-V	MGDM 2432	2014	To apply and evaluate the learned concepts, theories at real time situations-Employability, Skill development
Internship-VI	MGDM 2433	2014	To apply and evaluate the learned concepts, theories at real time situations-Employability, Skill development
Sustainable Development	MGDM 2401	2014	Critically analyze the social, environmental, and economic dimensions of sustainability - Employability, Entrepreneurship
Understanding & communicating to rural consumers	MGDM 2404	2014	Develop skills to communicate with rural consumers effectively-Employability & Entrepreneurship
Natural Resource Management	MGDM 2406	2014	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve management objectives- Employability and Entrepreneurship
Organizing Conference –II	MGDM 2421	2014	Learning skills for promoting events- Skill development
Principles of Management	MGAM1101	2017	Application of Basic management principles- Skill development
ICT in Agriculture	MGAM1102	2017	Applications of information & Community technology in various fields of agriculture and



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			promoting the applications of ICT in agriculture - Skill development
Economic Environment for Agriculture	MGAM1204	2017	Developing aggregate capacity plans and agricultural policies for sustainable agricultural development, risk management strategies and MPS in operation environments- Employability,
Study of an Organization	MGAM2101	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship
Field Intervention/(Ag. Development Action)	MGAM2102	2017	To apply and appraise concepts and theories learnt at the field- Employability & Entrepreneurship
Disaster Management	MGAM2106	2017	To build skills and abilities in analyzing potential effects of disasters and the strategies to avert the disasters: Employability
Post-harvest and Processing Management	MGAM2108	2017	Carry out Interdisciplinary approach to post-harvest management including biology, agricultural sciences, and management, Employability,
Live-stock Management	MGAM2203	2017	Manage animals for food and fiber production: Employability & Entrepreneurship
Agri-export and WTO	MGAM2204	2017	Analyze export markets and trade related aspects related to WTO agreements and impact on the welfare of the people: Employability, Entrepreneurship
Contract Farming	MGAM2206	2017	Develops strategies for fostering contract farming, legal aspects and skill development in planning and setting up of contracting operations : Employability
Advertising and Mass Communication	MGAM2208	2014	Introduce basic concepts of advertising and communication



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			and different types of media, media laws, various forms of advertising and their role in society: Employability,
Commodity Market and Trading	MGAM2209	2017	Develop plans to minimize risk through trade strategies: Employability, Entrepreneurship
Social Entrepreneurship	MGAM2210	2017	Promotes social enterprises Skill development
Basic Financial Accounting	BBAR1102	2015	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Management Principles and Applications	BBAR1103	2016	Application of Basic management principles in organizations- Employability
Micro Economics	BBAR1104	2015	Utilize micro economic concepts and techniques to take business decisions Employability & Entrepreneurship
Computer application in business	BBAR1105	2016	Identify and utilize appropriate technology for effective decision-making and improved performance- Skill Development
Organizational Behavior	BBAR1202	2015	Analyze and compare different models of Human Behavior - Employability, Entrepreneurship
Business Statistics	BBAR1203	2016	Use statistical tools for managerial decision-making- Employability, Entrepreneurship
Macro Economics	BBAR1204	2015	Apply macroeconomic perspective to solve business issues and take appropriate policy decision-Employability & Entrepreneurship
MS EXCEL	BBAR1205	2016	Use Microsoft Excel for data analysis-Skill Development



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Human Resource Management	BBAR2101	2015	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability & Entrepreneurship
Principles of Marketing	BBAR2102	2016	Solving marketing issues faced by a variety of enterprises : Employability & Entrepreneurship;
Cost & Management Accounting	BBAR2103	2016	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship
Production & Operation Management	BBAR2105	2015	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship
Research Methodology	BBAR2201	2015	Application of modern analytical tools and techniques for management decision making, research designing, sampling, analysis of data, hypothesis formulation and testing- Employability, Entrepreneurship
Operation Research	BBAR2202	2015	Develop a report that describes the model and the solving technique, analyze the results and propose recommendations in language understandable to the decision-making processes in Management - Employability, Entrepreneurship
Financial Management	BBAR2203	2016	Application of concepts of financial management, investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship
Tally and ERP	BBAR2205	2016	Preparation of financial statement of different types of



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			organizations with Tally: Skill development
Financial Institution and Markets	BBAR3101	2016	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;
Business Law for managers	BBAR3102	2016	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters- Employability & Entrepreneurship
Summer Internship	BBAR3103	2016	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Business Policy	BBAR3201	2016	Discuss and define the factors that shape the SWOT analysis of a firm and develop an environment appraisal that will lead to formulation of strategic plans: Employability & Entrepreneurship; Analyze the suitability of strategies that firms have developed in the real world scenario to achieve valuable outcomes: Skill Development
Entrepreneurship Development	BBAR3202	2016	Develop business plan, assess the various opportunities and constraints for new business, develop entrepreneurial traits- Entrepreneurship
SPSS	BBAR3203	2016	Use SPSS for analyzing data and define a variety of statistical variables-Skill Development
International Finance	BBAF3101	2016	Use techniques for managing the financial issues in international environment - Employability





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Investment Banking & Financial Services	BBAF3102	2016	Use techniques for raising funds from capital market and from different sources- Employability
Investment Analysis & Portfolio Management	BBAF3103	2016	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal	BBAF3104	2016	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Business Analysis & Valuation	BBAF3105	2016	Analyze and interpret the financial statements for various decision making purposes: Employability & Entrepreneurship
Strategic Corporate Finance	BBAF3107	2016	Use valuation principles, tools & techniques, the link between valuation and corporate finance, management buy-outs valuing real assets in the presence of risk: tracking portfolios and real asset valuation- Employability
Research Project	BBAF3108	2016	Identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship
Consumer Behavior	BBAM3101	2016	Apply the concepts and theories covered in the course to devise effective solutions: Skill Development
Advertising & Brand Management	BBAM3103	2016	Appraise key issues in managing brand portfolio and making strategic branding and advertising



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			decisions: Employability & Entrepreneurship
Retail Management	BBAM3104	2016	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
Distribution & Supply Chain Management	BBAM3105	2016	Design and implement distribution channel strategy: Employability, Entrepreneurship
Marketing of Services	BBAM3106	2016	Design service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of customer service offerings: Employability
International Marketing	BBAM3107	2016	Assess an organization's ability to enter and compete in international markets: Employability & Entrepreneurship;
Research Project	BBAM3108	2016	Identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship
Hospitality management	BBAM3109	2016	Create policy and processes and execute decisions in compliance with the legal, regulatory and ethical considerations inherent in managing organizations in hospitality sector- Employability
HRD : Systems & Strategies	BBAH3101	2016	Prepare strategies for development of human resources in organizations- Employability
Training & Development	BBAH3102	2016	Prepare training calendar and training contents by analyzing the need-Employability
Management of Industrial Relations	BBAH3103	2016	Plan policies towards Labor Welfare and maintain sound Industrial Relations-Employability, Entrepreneurship



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Performance & Compensation Management	BBAH3104	2016	Fixing performance standards and performance indicators that reflect the employees range of responsibilities, Designing a pay structure- Employability, Entrepreneurship
Counselling & Negotiation Skills for Managers	BBAH3105	2016	Negotiation with business enterprises- Employability, Entrepreneurship
Cross Cultural HRM	BBAH3106	2016	Diversity management respecting the culture of employees- Employability, Entrepreneurship
Talent & Knowledge Management	BBAH3107	2016	Develop knowledge management process in the organization- Employability
Research Project	BBAH3108	2016	Identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship
International Trade Policy & Strategy	BBAB3101	2016	Analyze new opportunities in international trade, global supply and value chains, investment agreements, trade in services, competition policy and regional economic integration- Employability
Global Business Environment	BBAB3102	2016	Analyze the key decisions that multinational firms make in relation to the choice of markets and entry strategies- Employability
International Accounting & Reporting System	BBAB3105	2016	Prepare the mandatory financial statements, according to the IFRS- Employability
Multinational Business Finance	BBAB3106	2016	Can handle – Problems and issues in foreign investment, Manage payment settlements- Employability



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Research Project	BBAB3108	2016	Identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship
Financial Accounting I	BCFA1102	2017	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Business Mathematics	BBAR1106	2017	Data analysis using mathematical function- Employability & Entrepreneurship
Business Economics	BCFA1104	2017	Apply macroeconomic perspective to solve business problems-Employability & Entrepreneurship
Business Law	BCOR1202	2017	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters-Employability & Entrepreneurship
Business Environment	BBAR1206	2017	Analyze business environment and take appropriate decision Employability and Entrepreneurship
Financial Accounting II	BCFA1207	2017	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Indirect Taxes / GST	BBAR2107	2017	Calculate and file GST, levy and collection of tax, input tax credit, IGST act GSTN etc.: Employability & Entrepreneurship
Tally.ERP 9	BBAR2109	2017	Preparation of financial statement of different types of organizations with Tally: Skill development
Cost & Management Accounting	BBAR2110	2017	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Corporate Law	BBAR2108	2017	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters- Employability & Entrepreneurship
E-Commerce	BBAR2209	2017	carry out entrepreneurial activities electronically (E-commerce) Employability
Advanced Excel	BBAR2208	2017	Utilize advance features of Ms-excel in the day to day activities of the business,alsofor improved decision making and performance- Skill development
Auditing	BBAR2210	2017	Identify the areas of fraud and errors in the accounts and take corrective actions while presenting the audit report: Employability
Business Ethics & Governance	BBAR2206	2017	Introduction of ethical practices in business - Employability, Entrepreneurship
Corporate Accounting	BBAR3109	2017	Develop Accounting procedures used in corporates and the strategies involved in the corporate decisions.: Employability & Entrepreneurship
Financial Market Operation	BBAR3110	2017	Analyze Money market,Capital market, its instruments and apply the same in organizations- Employability
On Job Internship-I	BBAR3111	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
On Job Internship-II	BBAR3211	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability,



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Entrepreneurship & Skill development
Communication Research and Advanced Research Methods	CCMC0909	2016	Analyze data with techniques of social science, media research - Skill development, Employability
Digital Media	CCMC0910	2016	Students will be able to Competence skills in modern media and will be able to analyze advertising, Marketing, social networking and using social media for different purposes. - Skill development and Entrepreneurship
International Communication	CCMC0911	2016	Skill development: The historical dimensions of international communication and the role of culture in international communication scenario.
Cultural Studies	CCMC0912	2016	Skill development; Competence in the process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures
Radio and TV Program Production	CCMC0914	2016	Skills development in audiovisual production techniques, camera handling and planning and producing programs for television and Radio.
Internship	CCMC0801	2016	Employability : Industry setup and will be able to working in a real environment by understanding the industry constraints and this will help them to develop their professional skills.
Project	CCMC0301	2016	Skill development in television and radio program production.
Animation	DCMC0601	2016	Ability to create quality animation performance through a creative and professional portfolio using



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			principles of animation. Will help in Employability and Skill development
Radio Jockeying	DCMC0602	2016	Skill development in aggregate capacity to develop the skills of a Radio Jockey.
TV Anchoring	DCMC0603	2016	Skill development in the aggregate capacity to develop the skills of a Television Anchor.
Fashion Photography	DCMC0604	2016	Skill development: Developing competency for professional fashion photography.
Media literacy and Film Appreciation	DCMC0605	2016	Skill development: Competence in different aspects of Film and will be able to analyze film as an art and develop the competency for critical analysis of media content.
Page to Television	DCMC0606	2016	Skill development: Competence in the process from initial stage to on air television content.
Web Content Development	DCMC0607	2016	Skill development: Competence in Content development for web site or digital media.
Basics in Computer Application	DCMC0608	2016	Skill Development: Competence in MS-office and other software.
Theatre Film and Television	DCMC0609	2016	Students will be able to develop skills in different aspects of Film and will be able to analyze film as an art. Skill Development and Employability
Gaming	DCMC0610	2016	Skill development: Competence in the skills of game development.
Communication in History and History of Communication	FCMC0901	2016	Utilize the skill in communication of the students- Skill development and students can able to work in new communication technologies at



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			different points of time- Employability
Introduction to Communication Theory	CCMC0901	2016	Use the Communication skill and able to differentiate between different forms and types of communication and Competence of audience research traditions - Skill development
Introduction to Electronic Media	FCMC0902	2016	Competence in Print and Electronic Media and can work in Print and Electronic Media industry-Skill development
Introduction to Print Media	CCMC0902	2016	Student will able to get employment on print media- Employability
Media, Communications and Culture	FCMC0903	2016	Enhance the skill of student can analyze process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures- Skill development
Organizational Communications	CCMC0903	2016	Develop the skill on role of communication in organizational system-Skill development
Development Communication	CCMC0904	2016	Students will make strategy designing and campaign designing skill and able to develop contents for development purposes.-Skill development
Gender and Communication	CCMC0905	2016	Students will enhance their skill and able to raise gender issues and role of media in it-Skill development
Intercultural Communication	CCMC0906	2016	Competence on intercultural communication and culture influences the communication process across societies and the role of culture to influence





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			nonverbal communication-Skill development
Communication, Culture and Popular Art	CCMC0907	2016	Develop the skill on Media, Culture and Society relationship. Skill development
Media Institutions policy and Ethics	CCMC0908	2016	Develop the skill on ethical dimensions for the media content.-Skill development
Internship	DCMC0800	2016	Improve competency for the work in a real environment by understanding the industry constraints-Employability, developing professional skills.- Skill development
Final Project	DCMC0300	2016	Skill development;Analysing Media issues and analysis of media content.
Mathematical Physics	MSCP1101	2017	Skill - Tensors: Tensor analysis, Pseudo-tensors, Dual tensors. Gamma function and Beta Function, Fourier Transforms:Fourier Transforms, Properties of Fourier Transforms, Convolution Theorem. Partial differential equations (PDEs):Second order PDEs, Classification of PDEs, Laplace equation, Fourier's Heat flow equation, Wave equation. Green's Functions: One-dimensional problems, Qualitative idea of Green's functions in 2- and 3-dimentionions.
Classical Mechanics	MSCP1102	2017	Employability - Variational principle, Central force problem, Canonical transformations, Poisson Bracket, Hamiltonian-Jacobi Theory and transition to



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			Quantum mechanics, Small Oscillations.
Quantum Physics I	MSCP1103	2017	Employability - Angular Momentum, The Hydrogen Atom, Perturbation Theory.
Computational Physics	MSCP1203	2017	Skill - Learning several numerical differentiation and integral methods to solve physical problems. Problems are solved using programming.
Electronics Devices Lab	MSCP1205	2017	Skill - Experiments done on electronic devices like Junction Diodes, Zener Diode, BJT, FET, OPAMP, Rectifiers circuits etc.
Quantum Physics II	MSCP2303	2017	Employability - Variational Methods, WKB Approximation, Time Dependent Perturbation Theory, Scattering Theory.
Introduction to Research	MSRM5101	2017	Skill - Research Process, Data Analysis, Building Mathematical Models, Documentation and Presentation.
Advanced Physical Chemistry I	MSCC1101	2017	Employability-Chemical Dynamics ,Adsorption,Electrochemistry, Enterperneurship-Micelles,
Polymer Chemistry	MSCC1104	2017	Employability-Kinetics of melting, crystal morphology, free volume, distribution of molecular size, stoichiometric imbalance. X-ray diffraction study, Microscopy,Price - Alfrey equation, Flory - Huggins theory, polymer fractionation, Mark - Houwink - Sakurada equation, diffusion coefficient and friction factor,Power Law for pseudo plastic liquids, effect of shearing forces, segmental friction factor, Bueche theory. Skill-Thermal



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			analysis and physical testing, Polymer Processing- I&II, Elastic deformation, shear modulus and compliances, Maxwell model, Voigt model, dynamic viscoelasticity, molecular theory for viscoelasticity - Rouse model, Mechanical properties
Advanced Inorganic Chemistry III	MSCC2301	2017	Skill-Instrumental Method of Analysis, Raman Spectroscopy, Homogeneous and Heterogeneous Catalysis, Displacement and Isomerization reaction. Hydrogenation, Hydroformylation, Wacker (Smidt) Process, Olefin Metathesis, Fischer-Tropsch synthesis, Zeigler-Natta polymerization, Water gas reaction Employability- Mechanism of Substitution Reactions, Electron Transfer Reactions
Seminar	MSCS2401	2017	Skill-To creat a research mind in students
Chemistry Laboratory 4	MSCC2403	2017	Skill-Instrumental Methods of Analysis Lab
MATHEMATICAL MODELLING	MSMA 4701	2017	Skill- Mathematical modelling through ordinary differential equations of first order. Employability - Mathematical modelling through the systems of ordinary differential equations
DIFFERENTIAL GEOMETRY	MSMA 4705	2017	Employability - Fundamental Triads, Curves, Serret-Frenet Formulae, Curvatures and torsion of a curve at a point.



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ADVANCED CALCULUS	MSMA 4802	2017	Skill- Derivatives of functions on $R^n$ , Differentiation of composite functions Employability - Set functions, Transformations and Multiple integrals
FLUID DYNAMICS – I	MSMA 4804	2017	Employability - Fundamental equations of the flow of viscous compressible fluids
ADVANCED NUMERICAL ANALYSIS	MSMA 5202	2017	Employability -Eigen values and Eigen Vectors: Basic power method, Rayleigh Quotient, Shifted power method
FORTRAN-95 PROGRAMME	BSMA2002	2017	skill- Learn fundamental concepts of FORTRAN-95 and able to translate scientific and engineering problems into machine understandable.
Microbiology	MSBO1101	2017	Higher studies/Employability- Students learn on preparation and sterilization of media, plating, slanting of media, isolation of bacteria in pure culture
Plant Diversity	MSBO1102	2017	Higher studies/Skill-Pursue higher studies and enhance their skill on culture, maintenance of cyanobacteria, use of cyanobacteria as biofertilizer, algae in the environment, agriculture, biotechnology and industry
Cell Biology	MSBO1103	2017	Employability-Perform comparative karyotypic analysis, techniques like extraction and separation of DNA by gel electrophoresis, squashing technique for the study of different stages of mitosis and meiosis



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Plant Ecology	MSBO1104	2017	Employability-Practical on biodiversity measurement by different indices, calculation and problem solving.
Botany Laboratory-I	MSBO1105	2017	Employability/Skill-Acquire general idea on instruments used in microbiology laboratory
Genetics and Molecular Biology	MSBO1201	2017	Higher studies/Skill- Students can isolate plant DNA & quantification of extracted DNA by spectrophotometric method, plasmid DNA isolation and techniques and DNA sequencing.
Biostatistics and Instrumentation	MSBO1203	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy and data analysis using chi square test, student t test etc.
Environmental Pollution and Management	MSBO1204	2017	Employability-Testing water and soil quality, practicals on Phytoremediation and pollution management.
Systematics and Pathology	MSBO2301	2017	Employability-Identification of plants, plant diseases and control measures
Natural Resource Management and Utilization	MSBO2302	2017	Skill/ Employability- Bioresource management.
Embryology and Anatomy	MSBO2303	2017	Skill-Gain practical knowledge on anatomical identifications of plant parts
Techniques of Tissue Culture	MSBO2304	2017	Entrepreneurship- Practicle on Production of synthetic seeds, Techniques of surface sterilization and plant regeneration via organ culture
Scientific visit	MSBP2301	2017	Skill- Observe and get knowledge on various fields of research in science in different scientific organization.



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Plant Biotechnology and Bioinformatics	MSBO2401	2017	Entrepreneurship/Employability- Practicle on Production of synthetic seeds, Techniques of surface sterilization and plant regeneration via organ culture
Eco toxicology & Waste Management	MSBO2402	2017	Employability-Practicle on E-waste management, smart waste management; landfilling-biological processes, leachate control and treatment, site management
Microbial Technology & Physiology	MSBO2403	2017	Employability-Perform fermentation technology, Food processing technology
Project/Dissertation	MSBP2401	2017	Employability- Problem analysis by opting the project work, findings and presentation
Seminar	MSBS2401	2017	Skill-Build up confidence to present their research paper in Conferences/Seminars
Bio-fertilizer	MSLS1001	2017	Skill- Isolation of Rhizobium or Azotobacter from plant root nodules& rhizosphere, Identification of soil cyanobacteria from different soil samples. Preparation of culture media. Crop development using azolla as abiofertiliser.
Tools and Techniques in Biosciences	MSLS1002	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy etc.
Medical Diagnostics	MSLS1005	2017	Skill-Perform experiment on stool ,sputum and semen ,urine, blood analysis and and problem solution.
Biosystematics and Taxonomy	MSZO1102	2017	Employability - . History of Classification Trends in



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			<p>biosystematics: Chemotaxonomy cytotaxonomy and molecular taxonomy, ,Taxonomic procedures: Taxonomic collections, preservation, curation, process of identification. Taxonomic keys, different types of keys, their merits and demerits. Taxonomic categories. Evaluation of biodiversity indices Evaluation of Shannon. Weiner Index, International code of Zoological Nomenclature (ICZN): , Hardy-Weinberg law of genetic equilibrium, . Trends in Evolution Molecular Evolution Gene evolution, Evolution of gene families. Assessment of molecular variation</p>
Cell & Molecular Biology	MSZO1103	2017	<p>Employability - Cell Signaling: Signalling molecules and signal receptors, second messengers, G protein coupled receptors, activation of gene transcription by G protein coupled receptors, Lampbrush chromosome, Polytene chromosome, telocentric chromosome, Interphase chromatin, Euchromatin and Heterochromatin, karyotype and its significance Cell cycle: Molecular models and events. Regulators and checkpoints in cell cycle, DNA synthesis by reverse transcription, DNA Repair: mismatch repair, base excision, nucleotide excision, direct repair,</p>



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			SOS repair, Prokaryotic and eukaryotic translation.
Biochemistry	MSZO1104	2017	Employability - Carbohydrate metabolism: Glycolysis, TCA cycle, pentose-phosphate pathway. Gluconeogenesis, glycogen metabolism, regulation of carbohydrate metabolism, Oxidative phosphorylation, electron transport and ATP synthesis, Enzymes: General properties, nomenclature and classification, extraction and assay Michaelis-Menten kinetics and its significance, Brigg's-Halden modification, determination of Vmax and Km, Mechanism of enzyme action: general acid-base catalysis, covalent catalysis, metal catalysis Mechanism of action of RNase, Lysozyme and Chymotrypsin, Coenzymes and vitamins, Enzyme inhibition: competitive, non-competitive inhibition, determination of Ki, allosteric regulation, covalent modification
Microbiology	MSZO1202	2017	Skill - General features of Archaea, Structure, Nutrition and Reproduction of Eubacteria, Genetic recombination in bacteria (Transformation, Conjugation and Transduction), General features and pathogenicity of mycoplasma, Rickttsia and Spirochaetes. Plant virus- TMV, structure, transmission, pathogenicity and replication Animal viruses - HIV, structure,





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			<p>transmission, pathogenicity and replication Treatment and prevention by anti-virals and vaccine,, Microbial toxins: types, mode of actions and pathogenicity. Bacterial toxins: Endo and exotoxins, fungal toxins: toxins of Aspergillum, Penicillium, Fusarium and Alternaria Algal toxins: cyanotoxins and dinotoxins.</p> <p>Chemotherapeutic agents: antibiotics and their mode of action; bacterial drugs (Penicillin, fluoroquinolones, tetracycline and aminoglycosides)</p>
Genetics	MSZO1203	2017	<p>Skill - Sex chromosomes, Chromosomal sex determination: XX-XY, XX-XO and ZZ-ZW systems, Compound sex chromosome, Meiotic behaviour of chromosomes: Primary &amp; Secondary non-disjunction, Genic balance theory of sex determination, Sex determination in humans and Drosophila with special reference to SRY and sex lethal genes, Sex determination in plants with special reference to Melandrium, Linkage groups: Complete and incomplete linkage ,Crossing over: Relationship between genetic and cytological crossing over, Relationship between crossing over and chaisma formation, molecular mechanism of crossing over, Mitotic Recombination,</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Recombination within gene. Structural and numerical alterations in chromosomes: Spontaneous and induced mutations, physical and chemical mutagens, chromosomal aberrations, meiotic behavior of deletion, duplication, inversion and translocation. Euploids and aneuploids-classification, origin, induction, role of polyploidy in evolution and practical significance in crop improvement.</p>
Immunology and Cancer Biology	MSZO1204	2017	<p>Employability - Antigen – Antibody interaction (Antibody affinity, Radial and Double immune diffusion, Radioimmunoassay, ELISA- Indirect, Direct, Sandwich, ELISPOT, Competitive, Western blotting), Major histocompatibility complex and MHC restriction, Antigen Processing and Presentation, Generation of humoral and cell mediated immune response, BCR and TCR, generation of diversity, Complement system(Classical, Alternate and lectin pathway), Cytokines- Types and their role in immune regulation, Activation and regulation of B and T lymphocytes, Cell-mediated cytotoxicity and Antibody dependent cell mediated cytotoxicity, Hypersensitivity, Autoimmunity and Transplantation., Role of</p>



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			carcinogens and DNA repair in cancer
Zoology Laboratory-II	MSZO1205	2017	Skill - 1. Study of Museum Specimen 2. Study of anatomical slides 3. Detection of genetically disorder. 4. Estimation of gram +ve & -ve bacteria 5. Method & techniques of Bacterial culture 6. Study of immunological method 7. Study of different Parasitic forms. 8. Identification of parasitic forms 9. Antigen-Antibody Interaction (Haemoagglutination assay) 10. Identification of histological slides of lymphoid tissue 11. Immunization Protocol Demonstration of Thioglycolate induced peritonitis (cell infiltration and Inflammatory exudates) 12. Sessional work (Internal evaluate)
Physiology & Endocrinology	MSZO2301	2017	Skill - The heart: cardiac cycle & its regulation, pulmonary ventilation, respiratory surface & gas exchange, regulation of respiration, transport of gases, acid base balance. Excretory system: Urine formation, glomerular filtration, tubular function, renal Mechanism of concentrating & diluting urine General organization of central nervous



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			<p>system, Type of neuronal cells, Structure and function of neuron and glia, Chemical messengers, Hormones &amp; their feedback systems, Mechanism of hormone action (fixed membrane-and mobile receptor mechanisms), hormonal signalling, Pineal, Thymus &amp; gastrointestinal hormones, Anatomy, chemistry and biological action of adenohipophysial</p> <p>&amp; neurohipophysial hormones, Thyroid gland: Anatomy, biosynthesis &amp; function of thyroid hormones, Parathyroid gland: Anatomy &amp; function of parathyroid hormone.</p> <p>Endocrine pancreas: Anatomy, Biosynthesis, chemistry &amp; functions of pancreatic hormones, Adrenal gland:</p> <p>Anatomy, biosynthesis, functions of cortical &amp; medullary Hormones, Gonads: Anatomy and biological actions of gonadal hormones.</p>
Animal Biotechnology	MSZO2302	2017	<p>Skill - Animal cell and tissue culture technology: Cell culture laboratory design and equipment, Media and reagents,</p> <p>Different types of cell culture, application, scale up Biotechnology in improvement of livestock: Fish breeding,</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Androgenesis and Gynogenesis in fish, Polyploidy in fish, Gene manipulation in aquaculture.</p> <p>Reproductive biotechnology: Cryopreservation and Cryoprotection and gamete banking, Assisted reproductive technology, In vitro fertilization and embryo transfer, ICSI, Sperm sexing, Vermi-culture and Vermicomposting for alternative sustainable agriculture. Soil fauna in soil formation &amp; fertility, Organic farming, Fish culture in flow through system and recirculation technology., Medical Biotechnology: Disease diagnostic markers, Gene therapy, Mechanism of gene therapy (antisense, virus mediated, immunotherapy, stem cell therapy), Drug delivery and targeting, Forensic Biotechnology,</p>
Ecotoxicology	MSZO2303	2017	<p>Employability - Productivity, Production and analysis. Recycling and reuse technologies for solid and liquid wastes and their role in environmental conservation. Remote sensing –basic concepts and applications of remote sensing techniques in environmental conservation. Environmental indicators and their role in environmental balance., , Vehicular exhaust pollution causes and remedies, Noise</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>pollution, Toxicity testing principles, hazards, risks and their control methods., Food toxicants and their control methods, Public Health Hazards due to environmental disasters, Pesticides, types, nature and their effects on environment, Important heavy metals and their role in environment, Agrochemical use and misuse, alternatives, Occupational Health Hazards and their Control</p>
Zoology Laboratory-III	MSZO2305	2017	<p>Skill - 1. Study of T.S,V.S,L.S of different mammalian organ            2. Detection of protein ,carbohydrate, lipid            3. Tissue culture            4. Gel Electrophoresis, Blotting            5. DATA interpreting            6. Estimation of toxic in Water Sample            7. Various tools &amp; techniques            8. Estimation of DNA            9. Estimation of RNA            10. Separation of proteins, lipids &amp; nucleic acids from tissues and their quantification            11. Isolation of genomic DNA from animal tissue/blood            12. Agarose gel electrophoresis of DNA            13. SDS PAGE (Demonstration)            14. Microscopy, Microtomy and Histological techniques.            15. Isolation of Mitochondria            9. WBC &amp; RBC counting            16. Estimation of haemoglobin            17. Study of slides of endocrine</p>



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			glands 18. Chromatographic separation of biomolecules (Amino acids /sugars/lipid)
Developmental Biology	MSZO2401	2017	Skill - Primordial germ cells, Spermatogenesis, Oogenesis, Fertilization: Ultrastructure of sperm and ovum, biochemical aspects of fertilization, Cell-cell interaction and cell signalling during morphogenesis in early embryo:, Ageing: Mitochondrial control of ageing, insulin pathway control of ageing and possible relation to oxygen radicals, "Ageless" animals and environmental control of ageing, senescence & cell death, Application of developmental biology in medicine and animal husbandry: In vitro fertilization and embryo transfer, embryo sexing, Gene expression and human disease: Inborn errors of nuclear RNA processing, inborn errors of translation, Teratogenesis: Environmental assaults on human development, teratogenic agents like alcohol, retinoic acid etc.
Instrumentation & Biophysics	MSZO2402	2017	Skill - Principle of operation and Instrumentation of Light, Fluorescence and Electron Microscopes Ultraviolet-visible absorption spectroscopy: Principle, Instrumentation and application, Fluorescence spectrophotometry: Principle, Instrumentation and application



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			<p>Radioisotope techniques: Nature of radioactivity, isotopes in biochemistry, measurement of radioactivity (carbon dating, Geiger-Muller counting and liquid scintillation counting). Principles of electrochemical techniques: Electrochemical cells and reactions, potentiometry and voltametry, the pH electrode. Centrifugation techniques: Basic principles of sedimentation, Types of centrifuges, Types of rotors, Methods in preparatory ultracentrifugation (differential and density gradient centrifugation). Chromatographic techniques: Principles of chromatography (Adsorption and Partition chromatography), planar chromatography (Paper and Thin-layer chromatography), Column chromatography (Gas chromatography, Gel exclusion/permeation chromatography, Ion exchange chromatography, Affinity chromatography, HPLC). Electrophoretic techniques: General principles, support media, electrophoresis of proteins (SDS-PAGE, native gels, gradient gels, isoelectric focusing gels and two dimensional gels), electrophoresis of nucleic acids (Agarose, pulse-field and sequencing gels). Blotting techniques (Southern, northern</p>





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>and western blotting). Biophysics: pH meter and measurement of Ph, Paper chromatography of amino acids, mixtures, identification of unknown amino acids and sugars, Gel filtration chromatography (Separation of starch from glucose), Thin layer chromatography of amino acids and sugar, Serum electrophoresis, Determination of absorption coefficient and concentration of unknown solutions by calibration curve using a coloured solution, Absorption spectrum of a coloured solution (KMnO<sub>4</sub>), Drawings using camera lucida</p>
Environment and Pollution Management	MSZO2403	2017	<p>Employability - biomass production, biotechnology for generation of biogas , Classification, formation, survey and land capability, soil structure and profile, soil reaction and buffering, Management and remediation of soil pollution, management and decontamination of saline, acidic, alkaline and mine waste soil, management of water logged, sandy and peat soil, degradation of organic pollutants in soil environment, ex situ and in situ bioremediation of contaminated soil: biopile, bioventing, biosparging and bio slurping., Pollutants in air: Major air pollutants; oxides of nitrogen, sulphur and carbon-sources,</p>



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			effects and environmental reactions, particulate air pollutants; methods of air pollution control, particle settling chamber, inertial separator, cyclone filters, electrostatic precipitators, gaseous pollutant control-scrubber, absorbers, thermal decomposers, biological filters
Environmental Science	FCBS0101	2016	Employability - Environmental Science
Thermal Physics	BSPH1201	2016	Employability - Laws of Thermodynamics, Carnot engine & efficiency. Carnot's Theorem. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Applications of Second Law of thermodynamics, Entropy, Thermodynamic Potentials, Kinetic Theory of Gases, Molecular Collisions, Real Gases. Skill- Thermal Physics Lab
Elements of Modern Physics	BSPH2402	2017	Employability - Radioactivity, Fission and Fusion, Lasers. Skill - Elements of Modern Physics Lab
Experimental Techniques	BSPH3503	2017	Employability - Experiments are done on, Thermostat, ultrasonic transducer, Calibrate Semiconductor type temperature sensor (AD590, LM35, or LM75), Create vacuum in a small chamber using a mechanical (rotary) pump and measure the chamber pressure using a



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>pressure gauge, design and study the Sample and Hold Circuit, Design and analyze the Clippers and Clampers circuits using junction diode etc enables them to become Lab Technician.</p> <p>Enterprenuership - Transducers &amp; industrial instrumentation, Digital Multimeter, Sensors</p> <p>Skill - Experimental Techniques Lab</p>
<p>Embedded systems- Introduction to Microcontroller</p>	<p>BSPH3504</p>	<p>2017</p>	<p>Employability - Embedded system, microprocessors, 8051 microcontroller, 8051 I/O port programming, Interfacing 8051 microcontroller to peripherals, Embedded system design and development.</p> <p>Enterprenuership - 8051 I/O port programming, Interfacing 8051 microcontroller to peripherals, Embedded system design and development.</p> <p>Skill - Embedded System: Introduction to Microcontrollers Lab.</p>
<p>Advanced Mathematical Physics-II</p>	<p>BSPH3507</p>	<p>2017</p>	<p>Employability -</p> <p>Enterprenuership -</p> <p>Skill -</p>
<p>Communication System</p>	<p>BSPH3604</p>	<p>2017</p>	<p>Employability - Communication and Navigation systems, Satellite Communication, Mobile Telephony System, mobile communication network,</p> <p>Enterprenuership - Mobile Telephony System, mobile communication network,</p> <p>Skill - Communication Electronics Lab</p>



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Physics Workshop Skills	BSPH2001	2017	Skill - Experiments are done to learn different measurement methods, different types of welding, drilling, cutting metal sheets, milling, drilling etc. Learn to work with several electrical circuits and instruments.
Electrical circuits and Network Skills	BSPH2003	2017	Skill - Experiments done to understand and analyze circuits and networks, to design circuits and networks involving various electrical instruments.
Basic Instrumentation Skills	BSPH2004	2017	Skill - Designing and implementing systems utilizing analog / digital control devices and learn to take measurements using digital and analog instruments. Experiments are done to learn about CRO, Q meter, LCR circuit and Oscilloscope.
Applied Optics	BSPH2005	2017	Skill - Learning about different light sources, detectors, holography and photonics.
Inorganic chemistry-I	BSCH1101	2017	Skill- Wave mechanics and Inorganic Chemistry-I Lab , enterpreneurship-Atomic Structure-2,Periodicity of Elements-1&2, Employability-Chemical Bonding-1&2, Oxidation-Reduction
Physical Chemistry-I	BSCH1102	2017	Employability-Gaseous state 1 &2 , enterpreneurship-Liquid state:,gaseous state-3,Solid state,Ionic Equilibria-1&2, Skill-bravis lattices,Qualitative treatment of acid - base, Physical Chemistry Practice
Physical Chemistry-II	BSCH1202	2017	Employability-Chemical Thermodynamics,Second Law of



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			Thermodynamics, Third Law of thermodynamics, Systems of Variable Composition, Dilute solutions . Enterperneurship-Chemical Equilibrium, Thermochemistry. Skill-Physical Chemistry-II Practice
Inorganic chemistry-II	BSCH2301	2017	Skill-General Principles of Metallurgy-1,-Inorganic Chemistry Practice. Employability-Acids and Bases, Chemistry of s and p Block Elements-1, Boric acid and borates, boron nitrides, borohydrides (diborane) carboranes and graphitic compounds, silanes, Chemistry of s and p Block Elements-3, preparation and properties of Clathrates, Inorganic Polymers .
Inorganic Chemistry-III	BSCH2401	2017	Employability-Coordination Chemistry-1&2, Transition Elements, Lanthanoids and Actinoids. Skill-separation of lanthanides, Bioinorganic Chemistry-1,2 and Inorganic Chemistry Practice
Physical Chemistry-IV	BSCH2403	2017	Employability-Electrical & Magnetic Properties of Atoms and Molecules and Application . Skill-Electrochemistry :II, Physical Chemistry Practice. Enterperneurship-Electrochemistry :I
Industrial Chemicals and Environment	BSCH3503	2017	Employability-Industrial Gases and Inorganic Chemicals, Inorganic Chemicals, Energy & Environment, Biocatalysis. Skill-Environment and its segments, Water Pollution, Industrial



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			effluents from the following industries and their treatment, Industrial Chemicals & Environment practice.
Research Methodology for Chemistry	BSCH3603	2017	Skill-Methods of Scientific Research and Writing Scientific Papers-II, Chemical Safety and Ethical Handling of Chemicals, Safe storage and use of hazardous chemicals, Recovery recycling and reuse of laboratory chemicals, Data Analysis-I & II.
Instrumental Methods of Chemical Analysis	BSCH3604	2017	Skill-Introduction to spectroscopic methods of analysis, Molecular spectroscopy, Separation techniques, Instrumental Methods of Chemical Analysis practice. Employability-Molecular spectroscopy instrumentation and application, Atomic spectroscopy, Spectrophotometer s principle and application,
Ordinary Differential Equations	BSMA1202	2016	Skill –To understand solving Free Undamped Motion of a Spring System using Python and other skills Employability- Be competent in solving linear/non-linear 1st & higher order ODEs using analytical methods to obtain their exact solutions.
Numerical Analysis	BSMA2401	2017	Skill – Numerical Solution of different linear and non-linear equations using software. Employability - Perform error analysis to select an appropriate numerical model and to estimate errors in



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			numerical solution of a given problem.
Discrete Mathematical Structure	BSMA3602	2017	Skill –To work with different types of Sets, Lattices and Boolean Algebra using Python Employability - To learn a particular set of mathematical facts and to apply their applications in many subjects of Computer Science and Engineering such as Cryptography, Theory of Computation & Data Networking.
Analysis-II	BSMA2301	2017	Skill - To describe various theorems about Riemann sums and Riemann integrals and emphasize the proofs' development. Employability - Apply change of variables in double integrals and triple integrals
Modern Algebra	BSMA2302	2017	Skill - To introduce students to the language and precision of modern algebra Employability - Work effectively with others to discuss homework problems put on the board.
Partial Differential Equations and System of Ordinary Differential Equations	BSMA2303	2017	Skill - Introduce students to how to solve linear Partial Differential Equations with different methods. Employability - Identify and solve Laplace, Diffusion and Wave equations.
Phycology and Microbiology	BSBO1101	2017	Employability- Classification and identification of microbes and algae. Skill-Practice on staining



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			procedure of different Algae and Bacteria.
Biomolecules & Cell biology	BSBO1102	2017	Employability- Carbohydrates, Lipids, Nucleic Acids, Bioenergetics Skill- Students Completed practice on analysis of carbohydrates, protein, reducing sugars etc.
Mycology & Phytopathology	BSBO1201	2017	Skill- practice on identification of different causative agent of plant pathogen like fungi, bacteria and virus and their management.
Anatomy of Angiosperms	BSBO2301	2017	Employability-Learn identification of plants based on cytotaxonomy, helps in forensic science, pharmacology and drug development. Skill- To gain hand on skills about the anatomical details of conducting tissues and secretory tissues.
Economic Botany	BSBO2302	2017	Entrepreneurship- Practice on Economic importance of Cereals, Legumes, Tea plant and Extraction of Essential Oil.
Basics of Genetics	BSBO2303	2017	Skill-Learn to carry out specific activities, such as selection of parental germplasm, conservation and recording of phenotypic variation and selection among progeny; mating systems, selection, testing and germplasm maintenance of horticultural and crop plants
Molecular Biology	BSBO2401	2017	Skill- Students can isolate plant DNA & quantification of extracted DNA by spectrophotometric





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			method, plasmid DNA isolation and techniques and DNA sequencing
Plant Ecology and Phytogeography	BSBO2402	2017	Employability-Soil,Water,Light, temperature, wind ,fire and Plant Communities. Skill -Students do practicals on environmental laboratory and analyze on carbonates, chlorides, nitrates, sulphates, organic matter, morphological adaptations of hydrophytes and xerophytes
Plant Systematics	BSBO2403	2017	Employability- Students can easily identified plants, prepared and seposited herbarium, they also practiced digital documentation of herbarium. Skill- Hands on skill on herbarium preparation.
Reproductive Biology of Angiosperm	BSBO3501	2017	Employability -Keen Observations of some of the variation in different parts of sample fruits, and relate these modifications to changes in function,significance of angiosperm gametogenesis and fertilization, including double fertilization. Help to pursue higher studies. Skill -Hands on skill on Pollen viability: Tetrazoliumtest. Germination: Calculation of percentage germination in different media using hanging drop method.
Plant Physiology	BSBO3502	2017	Employability- A keen observation and application of Plant water relationship and Growth regulators.



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			Skill-Hand on practice on calculate the area of an open stoma and percentage of leaf area open through stomata;Study the phenomenon of seed germination
Plant Metabolism	BSBO3601	2017	Employability- Students isolate and quantify the biomolecules, metabolites present on plants and analyze them. Skill- Hand on skill of bioassay of <i>Avena coleoptile</i> .
Plant Biotechnology	BSBO3602	2017	Entrepreneurship- Learn the basics principles of plant sciences and molecular biology and their integration towards trait improvement in plants; laboratory techniques used in plant biotechnology.
Analytical Techniques in Plant Sciences	BSBO3503	2017	Skill-Students will be exposed to ELISA, various blotting techniques, separate proteins using PAGE etc
Biostatistics	BSBO3504	2017	Skill-Hand on practice on data analysis using chi square test, student t test etc.
Bioinformatics	BSBO3603	2017	Employability- Different biological Data bases. Skill -Practicals on Nucleic acid and protein databases., Sequence homology and Gene annotation etc., skill on rug discovery studio
Natural Resource Management	BSBO3604	2017	Employability- Management of nautral resources and IPR Skill-Students practiced on Measurement of dominance of woody speciesby DBH calculation, Ecological modeling.



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Techniques in Biofertilizer	BSLS2001	2017	Skill- Isolation of Rhizobium or Azotobacter from plant root nodules& rhizosphere, Identification of soil cyanobacteria from different soil samples. Preparation of culture media.Culture of cyanobacteria- Media preparation&Strater culture.Sterilization of medium in autoclave. Prepare slants & Plates. Inoculation & Growth of Cyanobacteria Cyanobacterial inoculation to plants. To study different types of Mycorrhizal association. Isolation of VAM They also did the experiment on biocompositing.
Skill in Apiculture	BSLS2002	2017	Skill-Collaboration work with OUAT(Entomology Department) for performing the skill. Study of chamber of honey box, honey bee culture..Honey extraction and analysis of population of honey bee
Herbal Technology	BSLS2003	2017	Skill- Extraction and isolation of essential oil and secondary metabolites of Tulsi, neem and lemon grass. Collection of Plants extracts like methanol, chloroform benzene with the help of Soxhlet apparatus. and Testing for secondary metabolites.
Non-Chordates I	BSZO1101	2017	Employability - General characteristics and Classification up to classes, Study of Euglena, Amoeba and Paramecium, Life cycle and pathogenicity of Plasmodium vivax and



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			<p>Entamoeba histolytica, General characteristics and Classification up to classes, Canal system and spicules in sponges, General characteristics and Classification up to classes, Metagenesis in Obelia Polymorphism in Cnidaria, Corals and coral reefs, General characteristics and Evolutionary significance, General characteristics and Evolutionary significance., General characteristics and Classification up to classes, Life cycle and pathogenicity o Fasciola hepatica and Taenia solium, General characteristics and Classification up to classes,Life cycle, and pathogenicity of Ascaris lumbricoides and Wuchereria bancrofti, Parasitic adaptations in helminthes</p>
Principles of Ecology	BSZO1102	2017	<p>Employability - Unitary and Modular populations Unique and group attributes of population: Density, nasality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. Exponential and logistic growth, equation and patterns, r and K strategies, Types of ecosystems with one example in detail, Food chain: Detritus and Grazing food chains, Linear and Y-shaped food chains, Food web., Nutrient and biogeochemical cycle with one example of Nitrogen cycle, Human modified ecosystem ,</p>



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			Ecology in Wildlife Conservation and Management Principles of Ecology Lab
Cell Biology	BSZO1202	2017	<p>Employability -Cell Division: Mitosis, Meiosis, Cell cycle and its regulation, Cell Signaling: GPCR and Role of second messenger (cAMP) • Preparation of permanent slide to show the presence of Barr body in human female blood cells/cheek cells.</p> <ul style="list-style-type: none"> <li>• Preparation of permanent slide to demonstrate:</li> </ul> <p>i) DNA by Feulgen reaction</p> <p>ii) DNA and RNA by MGP</p> <p>iii) Mucopolysaccharides by PAS reaction</p> <p>iv) Proteins by Mercurbromophenol blue/Fast Green</p>
Diversity of Chordates	BSZO2301	2017	<p>Employability - General characteristics and outline classification, General characteristics of Chondrichthyes and Osteichthyes, General characteristics and classification up to order; Parental care in Amphibians, General characteristics and classification up to order; Affinities of Sphenodon; Poison apparatus and Biting mechanism in snakes, General characteristics and classification up to order Archaeopteryx—a connecting</p>



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			link; Principles and aerodynamics of flight, Flight adaptations and Migration in birds
Fundamentals Of Biochemistry	BSZO2303	2017	<p>Employability - Carbohydrates: Structure and Biological importance: Monosaccharides, Disaccharides, Polysaccharides and Glycoconjugates, Structure and Significance: Physiologically important saturated and unsaturated fatty acids, Triacylglycerols, Phospholipids, Glycolipids, Nucleic Acids: Structure: Purines and pyrimidines, Nucleosides, Nucleotides, Nucleic acids</p> <p>Cot Curves: Base pairing, Denaturation and Renaturation of DNA Types of DNA and RNA, Complementarity of DNA, Hypochromicity of DNA.</p> <p>Module-VI (12Hrs), Enzymes: Nomenclature and classification; Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation, Concept of <math>K_m</math> and <math>V_{max}</math>, Lineweaver-Burk plot; Multi-substrate reactions,</p> <ul style="list-style-type: none"> <li>• Separation of amino acid using Paper. Chromatography .</li> <li>• Action of salivary amylase under optimum conditions.</li> <li>• Effect of different pH on salivary amylase activity.</li> </ul>



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			<ul style="list-style-type: none"> <li>• Effect of different Temperature on salivary amylase activity.</li> <li>• Effect of inhibitor on salivary amylase activity.</li> </ul>
Biochemistry of Metabolic Processes	BSZO2403	2017	Employability - Carbohydrate Metabolism , Lipid Metabolism, Protein Metabolism, Oxidative Phosphorylation <ul style="list-style-type: none"> <li>• To estimate the protein content of supplied tissue by colorimeter method</li> <li>• To estimate the glycogen content of supplied tissue by colorimeter method</li> <li>• To extract &amp; colorimetric estimation of nucleic acid.</li> <li>• To demonstrate the effect of temperature on enzyme activity.</li> <li>• Preparation of Standard Curve of Bovine serum Albumin.</li> <li>• Detection of SGOT in given sample using available kit. (Chick/Goat Serum)</li> <li>• Determination of SGPT in given sample by using available kit.(Chick/Goat Serum)</li> <li>• Estimation of total protein content in the given sample by Lowry's Method.</li> <li>• To study the enzymatic activity of Trypsin and Lipase.</li> <li>• Dry Lab: To trace the labelled C atoms of Acetyl-CoA till in the TCA cycle</li> </ul>
Molecular Biology	BSZO3501	2017	Employability - Salient features of DNA and RNA, Watson and Crick model of DNA DNA Replication DNA Replication in prokaryotes



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			<p>and eukaryotes, mechanism of DNA replication, Semi-conservative, bidirectional and semi-discontinuous replication, RNA priming, Replication of circular and linear ds-DNA, replication of telomeres, Process of protein synthesis in prokaryotes: Ribosome structure and assembly in prokaryotes, fidelity of protein synthesis, aminoacyl tRNA synthetases and charging of tRNA; Proteins involved in initiation, elongation and termination of polypeptide chain; Inhibitors of protein synthesis; Difference between prokaryotic and eukaryotic translation, Gene silencing, Genetic imprinting DNA Repair Mechanisms: Pyrimidine dimerization and mismatch repair Regulatory RNAs, Riboswitches, RNA interference, miRNA, siRNA., • Preparation of liquid culture medium (LB) and raise culture of E. coli</p> <ul style="list-style-type: none"><li>• Preparation of Standard Curve DNA by Diphenyl method.</li><li>• Preparation of solid culture medium (LB) and growth of E. coli by spreading and streaking</li><li>• Preparation of Standard Curve RNA using Orcinol reaction.</li><li>• Histochemical demonstration of DNA (Liver/Testis of Chick).</li><li>• Demonstration of DNA &amp; RNA by MGP.</li><li>• Demonstration of</li></ul>





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			Mucopolysaccharides by PAS reaction. • Demonstration by Mercurobromophenol blue/Fast Green.
Principles Of Genetics	BSZO3502	2017	Employability - Types of chromosomal aberrations (Classification, figures and with one suitable example of each), Molecular basis of mutations in relation to UV light and chemical mutagens; Detection of mutations: CLB method, attached X method, Sex Determination, Chromosomal mechanisms of sex determination in Drosophila and Man Extra - chromosomal Inheritance, Transposons in bacteria, Ac-Ds elements in maize and P elements In Drosophila, Transposons in humans, • Chi-square analyze s using seeds/beads/Drosophila. • Linkage maps based on data from conjugation, transformation and transduction. • Linkage maps based on data from Drosophila crosses. • Study of karyotype (Human or Drosophilla).
Developmental Biology	BSZO3601	2017	Employability- Early Embryonic Development Gametogenesis, Spermatogenesis, Oogenesis; Types of eggs, Egg membranes, Fate maps (including Techniques); early development of frog and chick up to gastrulation;



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			embryonic induction and organizers, • Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96hours of incubation (Hamilton and Hamburger stages) <ul style="list-style-type: none"> <li>• Study of the developmental stages and life cycle of Drosophila from stock culture</li> <li>• Study of different sections of placenta (photomicrograph/slides)</li> <li>• Project report on Drosophila culture/chick embryo development</li> </ul>
Evolutionary Biology	BSZO3602	2017	Employability- Population genetics: Hardy-Weinberg Law (statement and derivation of equation, application of law to human Population); Evolutionary forces upsetting H-Wequilibrium; Natural selection (concept of fitness, selection coefficient, derivation of oneunit of selection for a dominant allele, genetic load, mechanism of working, types of selection, density-dependent selection, heterozygous superiority, kin selection, adaptive resemblances, sexual selection, Genetic Drift (mechanism, founder's effect, bottleneck phenomenon; Role of Migration and Mutation in changing allele frequencies.Product of evolution: Micro evolutionary changes (inter-population variations, <ul style="list-style-type: none"> <li>• Study of fossils from models/pictures</li> </ul>



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			<ul style="list-style-type: none"> <li>• Study of homology and analogy from suitable specimens</li> <li>• Study and verification of Hardy-Weinberg Law by chi square analysis</li> <li>• Demonstration of role of natural selection and genetic drift in changing allele</li> <li>• Frequencies using simulation studies</li> <li>• Graphical representation and interpretation of data of height/weight of a sample of 100 humans in relation to their age and sex.</li> <li>• Construction of phylogenetic trees with the help of bioinformatics tools (Clustal,X, Phylip, NJ) and its interpretation</li> </ul>
Fish and Fisheries	BSZO3504	2017	Employability- Sustainable Aquaculture; Extensive, semi-intensive and intensive culture of fish; Pen and cage culture; Polyculture; Composite fish culture; Brood stock management; Induced breeding of fish; Management of finfish hatcheries; Preparation and maintenance of fish aquarium; Preparation of compound diets for fish,
Immunology	BSZO3603	2017	Employability-Cell and molecules involved in innate immunity, Adaptive immunity (Cell mediated and humoral), Passive: Artificial and natural Immunity, Active: Artificial and natural Immunity, Immune dysfunctions (brief account of autoimmunity with



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			reference to Rheumatoid Arthritis and tolerance, AIDS, Structure and functions of different classes of immunoglobulins, Antigen-antibody interactions, Immunoassays (ELISA and RIA), 5. ABO blood group determination,
Fundamentals of Horticulture	ASHO1101	2017	Understanding the fundamentals of various aspects of horticulture crops :Employability
Fundamentals of Plant Pathology	ASPP1101	2017	Understanding the fundamentals of plant disease causing organisms and their management: Employability
NSS/NCC/Physical Education & Yoga Practices	ASPE1101	2017	Understanding and application of different yoga asanas and pranayama techniques for physical and mental well-being :Skill & Employability
Irrigation water management	ASAG1206	2017	Understands the practices of water management and its application in irrigation management : skill dev.& Employability
Production Technology for Vegetables and Spices	ASHO1203	2017	Understanding the different methods i.e. seed treatment and vegetative propagation for the production of vegetable crops: entrepreneurship & skill
Fundamentals of Entomology –I (Insect Morphology and Taxonomy)	ASEN1201	2017	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Crop Production Technology – I (Cereals, millets and pulses) Kharif crops	ASAG2103	2017	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability



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Fundamentals of Entomology- II (Insect ecology and concepts of IPM)	ASEN2102	2017	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Weed management	ASAG2105	2017	Identification of Weeds and its management in different crops : Employability
Production technology of fruits and plantation crops	ASHO2102	2017	Understanding the different methods i.e. grafting, budding and layering for production of fruit and plantation crops: entrepreneurship & skill
Agricultural Informatics	ASAI2101	2017	To disseminate, capture, access information to achieve sustainable use of agricultural resources : employment.
Communication skills and personality development	ASEE2104	2017	Develop knowledge of english communication through presentation, extempore and GD: Skill & Employability
Crop Production Technology –II (Oil seeds, fiber, sugar, tobacco, and fodder Crops) Rabi crops	ASAG2204	2017	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Production Technology for Ornamental Crops, MAP and Landscaping	ASHO2204	2017	To gain expertise in production of ornamental crops and landscaping : , Employability & skill development
Rain-fed Agriculture & Watershed Management	ASAG2211	2017	Understanding the methods of rainwater harvesting and groundwater recharging :Employability
Principles of seed technology	ASPG2202	2017	Gaining knowledge in seed storage, certification and marketing ways: employment
Diseases of Field and Horticultural Crops and their Management –I	ASPP2202	2017	Identification and management of diseases of field crops :employability



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Entrepreneurship Development and Business Communication	ASEE3103	2017	Development of entrepreneurial mindset and entrepreneurial skills for building a start-ups: skill dev
Pests of field Crops and Stored Grain and their Management	ASEN3103	2017	Identification and management of store pest and management of field crops :employability
Diseases of Field and Horticultural Crops and their Management-II	ASPP3103	2017	Identification and management of diseases of horticultural crops :employability
Crop Improvement-I (Cereals,millets,pulses and oil seeds etc)(Kharif crops)	ASPG3104	2017	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Principles of food science and nutrition	ASFS3101	2017	Identification of microbes in food processing and packaging: employability
Geoinformatics and Nano-technology for Precision Farming	ASAG3110	2017	To gain knowledge in nano materials and geoinformatics applications i.e. moonsoon tracking system, drainage networks for precision farming:Employability, skill and entrepreneurship
Farming System & Organic farming for Sustainable Agriculture	ASAG3207	2017	To gain expertise in organic farming practice: Employability, skill development and Entrepreneurship
Post-harvest Management and Value Addition of Fruits and Vegetables	ASHO3205	2017	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development
Pests of horticultural crops and their management and Beneficial Insects	ASEN3204	2017	Identification and management of crop & storedgrain pests :employability & skill dev



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Crop Improvement-II (fibre, sugar, starches, narcotics, Vegetables, fruits, and flowers)	ASPG3205	2017	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Principles of Integrated Pest and Disease Management (50% Entomology and 50% Pathology)	ASPP3204	2017	Identification of insects pests of different crops and its integrated pest management- Entrepreneurship& skill dev,employability
Protected cultivation and post harvest technologies	ASAE3204	2017	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development
Intellectual Property Rights	ASIP3201	2017	Understanding the process to file patent and register for copyrights:skill and Employability.
Agribusiness Management	ASFE2207	2017	Understanding agriculture and allied business along with building skills i.e. marketing of agri-based products : Skill &Entrepreneurship
Agrochemicals	ASFE2206	2017	Gaining information on different types of agrochemicals used in agriculture: Entrepreneurship
Commercial Plant Breeding	ASFE2204	2017	Understanding of commercial plant breeding techniques i.e. emasculation, crossing and storage practices :Employability & skill development
Food safety and Standards	ASFE2201	2017	Understanding the different food safety principles i.e. pasturization, canning etc: Skill
Biopesticides & Biofertilizers	ASFE2205	2017	Understanding the techniques involved in biopesticide and biofertilizer production: Skill &Entrepreneurship



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Micro propagation Technologies	ASFE2208	2017	Gaining knowledge in different micro irrigation techniques i.e. sprinkler and drip irrigation: Skill & Employability
Hi-tech. Horticulture	ASFE2202	2017	Gaining knowledge in different techniques i.e. vertical farming and hydroponics of hitech horticulture: skill & Employability
Remote Sensing & GIS Applications	ASFE2209	2017	Understanding the applications of remote sensing i.e. analyzing the condition of rural roads and detecting land use: Employability, Entrepreneurship and Skill development
Climate Smart Agriculture	ASFE2210	2017	Gaining knowledge on the usage of drones in agriculture for crop improvement: Employability, Entrepreneurship and Skill development
E-Agriculture	ASFE2212	2017	Gaining knowledge in technology dissemination, and information delivery through the advances in ICT: Entrepreneurship
Agricultural Waste Management	ASFE2203	2017	Understanding the various methods for agricultural waste management i.e. green waste, waste silage: Skill development
Principles of Aquaculture	ASFE2213	2017	Understanding the various methods i.e. breeding, raising and harvesting in fish production :Employability, Entrepreneurship and Skill development
RAWEP	AGRW4101	2017	To impart diagnostic and remedial practical training and skills in crop production/horticulture/plant protection through work experience: Employability, entrepreneurship and skill development.





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AELP	AGEL4201	2017	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Principles and practices of weed management	MAAG 1102*	2017	Skill development: Identification of different weeds and their control which in turn would further provide a scope to students in chemical industries
Principles and practices of water management	MAAG 1103*	2017	Skill development: The students can learn about judicious water management using different efficient technologies which would further lay emphasis on job opportunities as well as they can make themselves self sufficient by serving as entrepreneurs to serve the farming community
Agronomy of major cereals and pulses	MAAG 1204*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Agronomy of oilseed, fibre and sugar crops	MAAG 1205*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Cropping systems and sustainable agriculture	MAAG 1206*	2017	Skill development: The students acquire knowledge about different cropping systems under various climatic situations and they can make themselves self employed as successful entrepreneurs



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Dry land farming and watershed management	MAAG2107 *	2017	Skill development: On the basis of climatic situations, students will learn raising of different climate resilient crops
Master's seminar	MAAG1291 *	2017	To exploit newly evolved research techniques for enhancing the traits in agronomically important species and learn the tips for giving good presentations.
Soil fertility and fertilizer use	MASA1101	2017	Skill development: Students gain knowledge on the application of fertilizers and soil fertility status
Management of problem soils and waters	MASA1202	2017	Skill development: students study different methods for the reclamation of problematic soils as well as their management
Statistical methods for applied sciences	MAST 2102	2017	Skill: To exploit various statistical tools as well as techniques to compile raw data for representing the results
Experimental designs	MAST 1201	2017	The students can analyze the data of field experiments and interpret the same in the result.
Library and information services	MALI1101	2017	Skill development: To gain knowledge on the utilization of library resources for the research finding of experiments.
Technical writing and communication Skills	MACS1101	2017	Skill development: learn the style and skill of writing technical papers
Intellectual property and its management in agriculture	MAIP 1201	2017	Employability and Skill development: students get an overall idea of IPR and their applications towards the protection of property rights
Basic concepts in laboratory techniques	MALT1201	2017	Skill: students do learn the usage of different laboratory equipments along with the



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			standard operating procedures for handling them
Agricultural research, research ethics and rural development programmes	MAAR2101	2017	Employability and Skill development: Acquire knowledge for research ethics and government policies.
Production technology of cool season vegetable crops	MAVS 1101*	2017	Skill: The students can train others as well as the knowledge can be implemented for carrying out research in collaboration with various government and non-government organizations.
Production technology of warm season vegetable crops	MAVS 1102*	2017	Skill: The students can train others as well as the knowledge can be implemented for carrying out research in collaboration with various government and non-government organizations.
Breeding of vegetable crops	MAVS 1103*	2017	Research: can carry out research to generate new varieties further leading to entrepreneurship
Production technology of under exploited vegetable crops	MAVS 1205*	2017	Entrepreneurship and research to conserve the fading races thereby promoting the importance of these races to the farming community for nutritional security
Seed production technology of vegetable crops	MAVS 2106*	2017	Entrepreneurship, skill and research: Development of quality seeds and planting materials
Fundamentals of processing of vegetables	MAVS 2108*	2017	Entrepreneurship and skill: To utilize the knowledge in various processing units
Post harvest technology for fruit crops	MAFS1205	2017	Entrepreneurship and skill
Principles of plant breeding	MAGP1103	2017	Research: can carry out research to generate new varieties which further lead to entrepreneurship



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Principles and practices of water management	MAAG1103	2017	Skill and research: To learn the judicious utilization of water during various developmental stages of plants
Principles of cytogenetic	MAGP 1102*	2017	Practical skills and concepts leading to entrepreneurship and research to generate high yielding and disease resistant varieties.
Principles of plant breeding	MAGP 1103*	2017	Research: can carry out research to generate new varieties which further lead to entrepreneurship
Techniques in molecular biology I	MAMB1205	2017	Skill: Students learn the techniques of molecular biology and further carry out research and also serve as entrepreneurs
Genomics and proteomics	MAMB 2110	2017	Research and entrepreneurship: The tools and techniques of both the sciences help the students to carry out research and further serve as entrepreneurs
Development perspectives of extension education	MAEX1101*	2017	Employability: Understanding the rural development programs i.e. Kisan call center, Farmer Field School.
Development communication and information management	MAEX1102*	2017	Skill and research: students can learn the skills and involve in research activities
Diffusion and adoption of innovations	MAEX1103*	2017	Research: Students can carry out research on adoption and diffusion of innovations
Gender sensitization for development	MAEX1105*	2017	Research and employability: provide them an opportunity to work in sectors relating to women empowerment
Research methods in behavioral sciences	MAEX 1206*	2017	Students get an opportunity to learn the basic concepts of research
e-Extension	MAEX 1207*	2017	Skill: Students can learn the usage of various tools related to ICT



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			activities and further carry out research
Market led extension management	MAEX 1208*	2017	Entrepreneurship: students can learn the marketing and entrepreneurial skills
Human Resource Development	MAEX 2109*	2017	Skill: Students can learn the skills of studying human behaviour leading the management of human resources
Agricultural Marketing & Price Analysis	MAAE 1201	2017	Entrepreneurship: students can learn the marketing skills and serve as entrepreneurs
Agricultural Finance and Project Management	MAAE 2102	2017	Entrepreneurship and research: Students can learn the basic concepts of agricultural finance and thereby manage projects
Statistical methods for social sciences	MAST 1203	2017	Skill: Students can learn the usage of different statistical tools that in turn would provide them a scope for employment
Non-Parametrics	MAST 2104	2017	Skill: Students can learn the usage of different non parametrics such as descriptive statistics and statistical inferences which would help them for carrying out research activities
Participatory methods for technology development and transfer	MAEX1104	2017	Skill and employability: students can learn the basic concepts of participatory techniques and thereby help in technology transfer from lab to land
Entrepreneurship Development and Management in Extension	MAEX2110	2017	Entrepreneurship: Students do learn the entrepreneurial skills which ultimately provides them with a scope to serve as entrepreneurs
Taxonomy of Shellfish	FSRM1102	2017	Gain knowledge about the morphometric and meristic



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			character of shellfish for identification. Skill development
Fish Food Organisms	FSAQ2109	2017	Learn and practice the nutritional requirements of fish/shellfish larvae and knowledge on mass culture and enrichment of live food organisms. Employability and Skill development
Aquatic Ecology, Biodiversity and Disaster Management	FSEM2106	2017	Study the coastal resources, integrated coastal zone management strategies to conserve it in case of any disaster.
Freezing Technology	FSPT2103	2017	Understanding the different types of low temperature preservation, handling, storage of different type of fish and fishery products to minimize the spoilage along with post harvest loss. Employability and Skill development
Genetics and Breeding	FSAQ2111	2017	Gain knowledge on genetic basis of inheritance and breeding plans for commercially important fishes. Employability, Entrepreneurship and Skill development
Fish Immunology	FSHM2106	2017	Study the types of immunity, antigen-antibody interactions and learn the Serological methods in disease diagnosis. Employability and Skill development
Fisheries Economics	FSEE2102	2017	Learning the interface between economics and effective management decisions for fisheries business firm. Employability and Skill development
Coastal Aquaculture and Mariculture	FSAQ2204	2017	To gain knowledge in establishing and managing different



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			fish/shellfish farming systems in coastal waters. Employability and skill development
Fish Nutrition and Feed Technology	FSAQ2208	2017	Practical knowledge of feed formulation and different feed processing techniques and prepare feed based on the nutritional requirements of fish/shell fish. Employability and skill development
Fish Packaging Technology	FSPT2205	2017	Learn the different types of packaging, importance of packaging in fish processing, functions, objectives and requirements. Skill development
Fish and Shellfish Pathology	FSHM2201	2017	Study fish and shellfish pathogens, their control measures and treatments. Employability and Skill development.
Fishing Craft Technology	FSFE2203	2017	Study the operation of various types of traditional and mechanised fishing craft, design and modification. Skill development
Fisheries Extension Education	FSEE2207	2017	Acquire skills required to practice various fisheries extension approaches, the transfer of modern and scientific findings of lab to the farmers land.
Shellfish Hatchery Management	FSAQ2206	2017	Practical skills of seed production and hatchery management of commercially important crustaceans and molluscs and can setup his/her own hatchery. Employability, Entrepreneurship and Skill development.
Communication Skills and Personality Development	FSEE2208	2017	Students will improve interpersonal skills, active



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			listening and responding skills, communication into everyday practice, teamwork and group discussions skills. Employability and Skill development.
Pharmacology and Pharmaceutical Drug Analysis	MSFS2101	2017	Employability : Students learn about basic principles of pharmacology, pharmacokinetics & qualitative and quantitative analysis of Pharmaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology	MSFS2102	2017	Skill & Employability, : Students gains basic knowledge about disposition and translocation of toxicants, analytical toxicology, toxic agents such as pesticides, metals etc and their effects & applications of toxicology.
Modern and Applied Analytical Forensic Chemistry	MSFS2103	2017	Skill & Employability : Student learns about basic concepts of forensic nuclear chemistry, gains knowledge about drug chemistry, petroleum chemistry and fire chemistry. learns about analysis of lipids and fats of different oils and analysis of dairy products
Pharmacology and Pharmaceutical Drug Analysis Laboratory	MSFS2104	2017	Skill & Employability : Students do qualitative and quantitative analysis of Pharmaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology Laboratory	MSFS2105	2017	Skill & Employability, : Students do analysis of various poison such as metallic poison, pesticides, plant poisons etc. and gains knowledge about interpretation of toxicological finding and preparation of reports.





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Modern and Applied Analytical Forensic Chemistry Laboratory	MSFS2106	2017	Skill & Employability : Student performs analysis of Various Cases in Forensic Chemistry, Validation of new methods & Accreditation in FSL's, Analysis of NDPS, Explosives, Fire, Petroluem Products, Beverages, Bribe Trap Cases, Adultrated food, Fibres & Exmination of Forensic Chemicals.
Assignment	MSFS2107	2017	Skill : Student study various cases where forensic science played significant role in delivery of justice and write reports.
Seminar	MSFS2108	2017	Skill : Student takes up cases and topics relevant to their specialization subjects and delivers the same.
Advances in Physical Techniques	MSFS2121	2017	Employability : Student gains knowledge about thermal analysis and different spectroscopy techniques, microscopy techniques and forensic nanotechnology and forensic engineering
Concepts of Conventional and Modern Ballistics	MSFS2122	2017	Employability : student gains knowldege about operational features of firearms, ammunition, external ballistics, GSR analysis and procedures for test firing & other instruemental techniques used for ballistics evidence analysis.
Audio Recognition and Video Analysis	MSFS2123	2017	Employability : Student gains knowledge about basic concepts of voice recognition, handling of audio evidences, processing of speech signals, Gold wave analysis & video analysis



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Advances in Physical Techniques Laboratory	MSFS2124	2017	Skill & Employability : Students perform examination of evidences by EDXRF, measures RI of physical evidences.
Concepts of Conventional and Modern Ballistics Laboratory	MSFS2125	2017	Skill & Employability : Students perform examination of barrel wash, analysis of GSR
Audio Recognition and Video Analysis Laboratory	MSFS2126	2017	Skill & employability : Students record, edit & process audi files using goldwave software, speech acquisition and analysis of speech samples using CSL-4500 software, Video analysis and detection of tampered video files using videofocus
Analytical Techniques	MSCM1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Entrepreneurship
Basic Microbiology Lab	MSCM1105	2016	Techniques for staining microorganisms, isolating and culturing microorganisms: Skill and Employability and Entrepreneurship
Business Communication	FCHU0203	2016	Enhancement of basic language skills, i.e., listening, speaking, reading and writing: Skill dev.
Systemic Bacteriology	MSCM1201	2016	Understanding the Morphological identification, pathogenesis, laboratory diagnosis and epidemiology of clinically significant bacteria: Skill dev and Employability
Molecular Biology & Clinical Biochemistry	MSCM1202	2016	Understanding the central dogma of life, Metabolic disorders and diagnostic enzymology, Biochemical tests for organ function: Employability



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Applied Microbiology	MSCM1204	2016	Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship
Bacteriology, Parasitology & Mycology Lab	MSCM1205	2016	Pathological investigations of urine, stool and other biological specimen; Culture for Pathogenic Fungi : Skill dev. & Employability & Entrepreneurship
Project	MSCM2401	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	MSCM2402	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Entrepreneurship
Medical Laboratory Technology	MSMT1101	2016	Clinical specimen collection, storage, disposal; record maintenance; Quality control: Entrepreneurship
Hematology	MSMT1103	2016	Understanding of hematology laboratory; Hematological disorders: Entrepreneurship
Medical Instrumentation and Technique	MSMT1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Entrepreneurship
Hematology Lab	MSMT1105	2016	Performing various hematological tests: Skill and Employability and Entrepreneurship
Molecular Biology & Clinical Biochemistry	MSMT1202	2016	Understanding the central dogma of life, Metabolic disorders and diagnostic enzymology, Biochemical tests for organ function: Employability
Clinical pathology	MSMT1203	2016	Performing pathological investigations on human



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			specimen: Skill dev. & Entrepreneurship
Blood Banking	MSMT1205	2016	Blood collection and transfusion techniques and possible errors associated with it: Skill dev. & Entrepreneurship
Clinical pathology & Microbiology Lab	MSMT1204	2016	Collection of blood, stool, body fluids and study their chemical and morphological examination: Skill dev. & Entrepreneurship culturing and identification of pathogenic microorganisms: Skill dev. & Employability & Entrepreneurship
Clinical Hematology	MSMT2302	2017	Quality assurance required in hematology; Examination of bone marrow: Skill dev and Entrepreneurship
Immunology, Biochemistry & Histopathology Lab	MSMT2306	2017	Performing immunological/serological tests and their interpretation: Skill dev and Employability. Assay on blood serum for biochemical test: Skill dev and Employability. Performing histopathological analysis and their interpretation: Skill dev and Entrepreneurship.
Project	MSMT2401	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	MSMT2402	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Entrepreneurship
Basic Haematology	BSCM1103	2017	Carry out hematological investigations: Skill dev. & Employability & Entrepreneurship



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Instrumentation & Techniques	BSCM1104	2017	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Entrepreneurship
Human Anatomy, Physiology & Haematology Practical	BSCM1105	2017	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability & Entrepreneurship
Clinical pathology & Diagnosis	BSCM1203	2017	Pathological investigations of urine, stool and other biological specimen: Skill dev. & Entrepreneurship
Clinical Pathology, Biochemisrty & Microbiology Practical	BSCM1204	2017	Performing pathological investigations on human specimen: Skill dev. & Entrepreneurship; Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship; principle of spectrophotometry, colometry, photometry and Clinical biochemistry tests: Skill dev and Employability and Enterepreneurship
Basic Hematology	BSMT1103	2016	Carry out hematological investigations: Skill dev. & Employability & Entrepreneurship
Basic Medical Instrumentation & Techniques	BSMT1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Entrepreneurship
Anatomy , Physiology & Hematology Lab	BSMT1105	2016	Understanding the physiological aspects of growth and development of Human organs/ tissues and hematological investigations: Employability & Entrepreneurship



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Clinical pathology	BSMT1203	2016	Pathological investigations of urine, stool and other biological specimen: Skill dev. & Entrepreneurship
Clinical pathology Lab & Microbiology Lab	BSMT1204	2016	Performing pathological investigations on human specimen: Skill dev. & Entrepreneurship, Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship
Immunology	BSMT2301	2017	Understanding the concept of Innate & adaptive immune system; performing serological analysis: Skill dev. & Employability & Entrepreneurship
Applied Hematology	BSMT2302	2017	Concept of Haemopoietic disorders, laboratory diagnosis of leukemia, hemolytic anemia, haemophilia, ITP: Skill dev. & Employability & Entrepreneurship
Basic Histology	BSMT2304	2017	Concept of Histotechnology, histopathology: Skill dev. & Employability & Entrepreneurship
Advance Biochemistry	BSMT2402	2017	Learning the principle of spectrophotometry, colometry, photometry and Clinical biochemistry tests: Skill dev and Employability and Entrepreneurship
Advanced Hematology	BSMT2403	2017	Understanding the lab diagnosis for Leukamoid reactions, DIC: Skill dev and Employability and Entrepreneurship
Biochemistry & Advanced Microbiology Lab	BSMT2406	2017	Analysis of urine and serum sample for biochemical parameters: Skill dev and Entrepreneurship; Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship



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Basic Radiation Physics	BSRT1104	2016	Understanding of the concept of Radiation in the study of human anatomy and disease identification: Employability
Basic Medical Instrumentation & Techniques	BSRT1105	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Entrepreneurship
Anatomy and Physiology lab	BSRT1106	2016	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability & Entrepreneurship
Equipments Of Radiotherapy	BSRT1203	2016	Conceptualization of linear accelerators, simulators, magnetrons and klestron: Employability & Entrepreneurship
Medical Imaging Lab - 1	BSRT1204	2016	Care and maintenance of x-ray equipment: Skill dev & Entrepreneurship
Advance Radiographic Technique	BSRT2302	2017	Familiariation with the equipments of ultrasound, basic principle of ct scanning and MRI: Employability
Basics Equipment's in Radiodiagnosis	BSRT2304	2017	Understanding of gamma rays and its use in radiography, magnetron and klestron: Skill dev and Entrepreneurship
Medical Imaging Lab - 2	BSRT2305	2017	Performing radiographic positioning, application of contrast media, Darkroom procedures: Skill dev and Entrepreneurship
Radiotherapy and Branchy Therapy Techniques In Malignant And Non Malignant Diseases	BSRT2401	2017	Concept on treatment of cancer, dose limits for individuals: Skill dev and Employability
Applied Equipments Of Radio Diagnosis	BSRT2402	2017	Understanding of patient preparation for general



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			radiologic procedures, concepts on nuclear medicine and PET scan: Enterpreunership
Hospital posting Medical Imaging Lab - III	BSRT2406	2017	Exposure to different hospitals, training of x-ray, CT and MRI: Skill dev. & Employability & Enterpreunership
ORIYA (LANGUAGE-I)	MSIL1101	2015	Comprehending with the fundamentals of Oriya Language: skill dev.
HINDI (LANGUAGE-I)	MSIL1102	2015	Comprehending with the fundamentals of Hindi Language: skill dev.
GENERAL PHYSIOLOGY	BSOP1103	2015	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability
OCULAR ANATOMY	BSOP1202	2015	Identifying the microscopic structures of various tissues in the eye and correlating the structure with the functions: Employability
OCULAR PHYSIOLOGY	BSOP1203	2015	Elucidating the physiological aspects of normal growth and development of the eye: Employability
OCCULAR MICROBIOLOGY AND PATHOLOGY	BSOP2301	2015	Understanding of how knowledge of pathological processes can be utilized in the investigation, management and prevention of disease: Employability
OPTOMETRIC OPTICS- I	BSOP2303	2015	Ability to measure the power of lens, lens centration using conventional techniques, identify different forms of lenses: Skill dev. and Enterpreunership
CLINICAL EXAMINATION OF VISUAL SYSTEM	BSOL2301	2015	Performing various clinical tests, their interpretation and finding:





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			Skill dev. and Entrepreneurship and Employability
CLINICAL OPTOMETRY-I	BSOL2302	2015	Measurement of lens power, lens centration using conventional techniques, transposition of various types of lenses: Skill dev. and Entrepreneurship and Employability
OCULAR DISEASES -I	BSOP2401	2015	Developing diagnostic approach towards management of the ocular diseases: Employability
OPTOMETRIC OPTICS II	BSOP2403	2015	Developing the art and science of dispensing spectacle lens and frames based on the glass prescription: Skill dev. and Entrepreneurship and Employability
OCULAR DISEASES II	BSOP2405	2015	Knowledge on course sequelae of ocular diseases, their diagnosis and management of the ocular diseases: Employability
CLINICAL OPTOMETRY II	BSOL2401	2015	To gain practical knowledge regarding Ocular Diseases, Visual Optics, Optometric Optics: Skill dev. and Entrepreneurship and Employability
BINOCULAR VISION & SQUINT	BSOP3501	2015	Binocular muscle coordination; Integration of motor and sensory system into binocular vision; Differentiate different types of strabismic anomalies; non strabismic anomalies related to accommodation & convergence: Skill & Employability
OCULAR DISEASES LABORATORY II	BSOL3503	2015	Performing the basic workup for a patient in a hospital and clinic set up: Skill dev. and Entrepreneurship and Employability



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STATISTICS & OCCUPATIONAL OPTOMETRY	BSOP3601	2015	Interpretation and ability to prescribe suitable corrective lenses and eye protective wear: Skill dev. and Entrepreneurship and Employability
PEDIATRIC & GERIATRIC OPTOMETRY	BSOP3602	2015	Ability to identify, investigate the age-related changes in the eyes: Skill dev. & Employability
OPTOMETRIC INSTRUMENTS LABORATORY-II	BSOL3602	2015	Gaining practical skill in handling the advanced instruments in an Optometry Lab: Skill dev. and Entrepreneurship and Employability
Human Anatomy and Physiology I– Theory	BPHT1101	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Analysis I – Theory	BPHT1102	2017	Skill-Employability-Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession
Pharmaceutics I – Theory	BPHT1103	2017	Skill- Employability- Entrepreneurship -Understand the impact of pharmaceutical solutions in a global, economic, environmental, and societal context
Pharmaceutical Inorganic Chemistry – Theory	BPHT1104	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Communication skills – Theory *	BPHT1105	2017	Skill- Students can improve their communication Skill
Human Anatomy and Physiology – Practical	BPHL1101	2017	Skill-allows Students to verification of physiological processes discussed in theory classes through experiments on living



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			tissue, intact animals or normal human beings
Pharmaceutical Analysis I – Practical	BPHL1102	2017	Skill- Employability- Students can assay ,prepared and standardized various Heavy metals and Chemicals
Pharmaceutics I – Practical	BPHL1103	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Pharmaceutical Inorganic Chemistry – Practical	BPHL1104	2017	Skill- Students can perform purity test on drugs or chemicals
Communication skills – Practical*	BPHL1105	2017	Skill- Students can improve their communication Skill
Remedial Biology – Practical*	BPHL1106	2017	Skill- Students can learn about structure and functional system of plant and animal kingdom
Human Anatomy and Physiology II – Theory	BPHT1201	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Organic Chemistry I – Theory	BPHT1202	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Pathophysiology – Theory	BPHT1204	2017	Skill-Employability-student get to know about various communicable diseases and pathophysiology along with all the techniques for screening test .
Environmental sciences – Theory *	BPHT1206	2017	Employability- student get to know about basic knowledge about the environment and its allied problems
Human Anatomy and Physiology II –Practical	BPHL1201	2017	Skill- allow the verification of physiological processes discussed



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Organic Chemistry I– Practical	BPHL1202	2017	Skill-Students can do qualitative analysis and synthesis of Organic Compound
Biochemistry – Practical	BPHL1203	2017	Skill- Students can demonstrate different Biochemical Test
Computer Applications in Pharmacy – Practical*	BPHL1204	2017	Skill-Allows students to details with Database, Database Management system, computer application in clinical studies and use of databases
Apparel Production	CUTM3031	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Heavy Vehicle Technology	CUTM3034	2017	Employability/ Entrepreneurship/Skill - Practice and Project
E-Vehicle Assembly and Service Technology	CUTM3037	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Poultry Farming	CUTM3039	2017	Employability/ Entrepreneurship/Skill
Design Supervising Wooden and Modular Furniture	CUTM3041	2017	Employability/ Entrepreneurship/Skill - Practice and Project
<b>2018-19</b>			
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Differential Equations	FCBS 0102	2016	Skill Development(Students will know about the modelling of different engineering application )
Linear Algebra & Vector	FCBS 0103	2016	Skill Development(Students will know about modelling of



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			problems related to system of equations in engineering application)
Integral Transform	FCBS 0104	2016	Skill Development(Students will know to find the solution using laplace and fourier transform )
Complex Analysis	FCBS 0105	2016	Skill Development(Students will know to find the solution using complex integral)
Discrete Mathematics	FCBS 0106	2016	Skill Development(Students will know about graphs, sets and logic)
Calculus	FCBS0107	2017	Employability (Students will know about curvature, assymptotes)
Probability & Statistics	FCBS0108	2017	Employability (Students will know about probability distribution) Skill (Students will know about mean, media, mode)
Numerical Methods	FCBS0109	2017	Skill Development(Students will know about solution of differential equation using different numerical techniques)
Electricity and Magnetism	FCBS0404	2016	Skill development ( Students will develop the skill of identifying circuit elements and operating different electrical circuits)
Basic Mechanics and Properties of Matter	FCBS0405	2016	Employability (knowledge enhancement)
Optics and Optical Fibers	FCBS0406	2016	Employability (knowledge enhancement)
Industrial Chemistry	FCBS0402	2016	Employability-: Preparation of soap, dyes and oil analysis ,Analysis of cement Skill-All Practices
Foundations of English Communication	FCHU1201	2016	Skill Development(Students will develop basic interpersonal communication skill (BICS) )



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Communicative Practice Laboratory -1	FCHU1202	2016	Skill Development(Students will enhance their communication skills in english both academic and professional context)
Business Communication	FCHU1203	2016	Skill Development(Students will enhance their communication skills in english in bussiness context)
Communicative Practice Laboratory-II	FCHU1204	2016	Skill Development(Students will enhance their communication skills in english both academic and professional context)
Corporate Readiness Laboratory	FCHU1205	2016	Skill Development(Students will develop professional communication skill)
IT Enabled Communication	FCHU1206	2016	Skill Development(Students will enhance their communicative competency through the use of technology)
Career Communication	FCHU1207	2016	Skill Development(Students will enhance their communicative competency in professional career)
Personality Development	FCHU1208	2016	Skill Development(Students will learn basic etiquette in professional sphere )
Seminar and Technical Writing	FCHU1209	2016	Skill Development(Students will learn the convention followed in academic and technical writing )
Professional Etiquette	FCHU1210	2016	Skill Development(Students will learn basic etiquette in professional sphere )
Creative Writing	FCHU1211	2016	Skill Development(Students will enhance their competency level using innovative method for creative writing)
English for Competition (GRE/GMAT/TOEFL/IELTS)	FCHU1212	2016	Skill Development(Students will enhance their competency level



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			to compete with students of global standard)
Life Skills Development (LSD) – I	FCHU0210	2016	Skill Development(Students will develop life skill including time management skill, personality and others)
Life Skills Development (LSD) – II	FCHU0211	2016	Skill Development(Students will develop life skill including time management skill, personality and others)
Life Skills Development (LSD) - III	FCHU0212	2016	Skill Development(Students will develop life skill including time management skill, personality and others)
Economics	FCMG0101	2016	Skill Development(to provide students with a basic understanding of the economic principles, methodologies and analytical tools that can be used in business decision making problems ) Employability & Entrepreneurship (Student shall understand and apply the impact of economic policies on managerial decision-making by providing an understanding of fiscal policy, and national and global economic issues affecting business.)
Accounting & Finance	FCMG0102	2016	Skill Development-Students will be able to create, balance and deliver a budget and use budget information for planning and decision purposes; Employability & Entrepreneurship (Students to Undertake various costing techniques and information for planning and decision-making)



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Management Processes and OB	FCMG0103	2016	Skill Development-Students shall be able to analyze and compare different models used to explain individual behaviour; Employability & Entrepreneurship (Students shall be able to resolve conflict, motivate the employees, handle stress and communicate effectively and manage diversified workforce in workplace)
Production and Operation Management	FCMG0104	2016	Skill Development (Acquire a working understanding of the roles/functions of production management in the context of business enterprise.) Employability & Entrepreneurship (Student can use specialized knowledge in Operations Management to solve business processes )
Marketing Management	FCMG0105	2016	Skill Development (Students will learn the application of various marketing tools for solving business problems). Employability and Entrepreneurship (students will acquire and develop the marketing skills to be a successful marketing person )
Introduction to Research	FCMG0108	2016	Skill Development (Students will be able to understand the process of doing a research). Employability and Entrepreneurship (Students will be able to write a research report. )
Indian Society and Culture	FCMG0113	2016	Skill Development (Students will be familiarized with the science and technology policies that would benefit modern India).





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Employability and Entrepreneurship (Students would develop an idea about the socio-cultural environment in which they would be working as scientists, researchers and entrepreneurs. )
Disaster Management	FCMG1201	2016	Skill Development (students would begin to understand the relationship between vulnerability, disasters, disaster prevention, risk reduction and the basic understanding of the research methodology for risk reduction measures.). Employability and Entrepreneurship (Students would develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity )
Human Rights	FCMG0115	2018	Skill Development (Student would have an understanding of human rights, its history, characteristics, types, protection, violation and the legal framework for their protection, therefore, a fair knowledge of the Universal Declaration of Human Rights.). Employability and Entrepreneurship (students shall gain a holistic view of human rights and their implications)
Introduction to Ethics	FCMG0116	2018	Skill Development (Students shall be able to demonstrate their respect of different ethical perspectives). Employability and



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Entrepreneurship (students shall be able to clearly formulate their ethical position on an issue and develop arguments based on sound inferences and clear premises (through project))
Gender Issues in Development	FCMG0401	2018	Skill Development (Students shall be able to develop an understanding of perspectives on gender and development). Employability and Entrepreneurship (Familiarise with the different tools and techniques for gender planning, analysis and evaluation in the development sector)
Engineering Mechanics	ENFC0101	2018	Skill development (To provide the student with a thorough understanding of concept, drawing and free body diagrams.)
Material Sciences	ENFC0102	2017	Employability and Skill development ( Students will able to identify materials for engineering use.Students will able to select best materials for a specific design and production.)
Thermodynamics	ENFC0103	2018	Skill development (Students will be able to prepare energy balance sheet will be able to understand various processes of thermodynamic cycles Will be familiar with the steam table which will further help them in advanced thermodynamics for understanding power cycles)
Geometric Modelling Lab	ENFC0202	2018	Skill development(Students will be able to Demonstrate use of CAD in Civil Construction, basic knowledge of operating software



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			& commands, and benefit of civil developments in the construction industry. Do 2d &3d drafting /design with AUTO CAD software.)
3D Modeling	ENFC0204	2018	Skill Development (learning software which helps to draw complicated drawings and also helps in producing detail drawings in proper scale. Learning software which helps to better visualize complicated forms and also helps in producing photo realistic images of those 3D forms)
Electrical Workshop Practice	ENFC0205	2018	Skill development( Students will Enhance their skill of operating electrical instruments, hand tools and power tools)
Engineering Metrology and Measurements	ENFC0401	2017	Employability and Skill development ( To Make Students Familiar with the Measuring Systems, and the Standard of Measurements. Learns about Basic Measurement Devices.Selecting Suitable Measuring Instruments for Basic and Typical Applications in the Industries.)
Basic Fluid Mechanics	ENFC0402	2017	Skill development( <ul style="list-style-type: none"> <li>• After completion of the course, the students will able to evaluate finite difference/volume schemes on model problems of computational fluid dynamics.</li> <li>• Students will learn to develop steady state mechanical energy balance equation for fluid flow</li> </ul>



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			systems, estimate pressure drop in fluid flow systems)
Basic Surveying	ENFC0403	2017	Skill development(Doing centering, leveling & measuring coordinate points of area and calculation, transfer to data from Total station to software spectrum link Doing field work using of simple machine parts such as Total – Station, Auto- level)
Basic Electrical Engineering	ENFC0404	2017	Skill Development ( Students will get the skill to design devices and systems using electrical components such as resistors, capacitors, transistors, etc
Electrical Machines	ENFC0405	2018	Skill Development ( Students will get the skill to analyze about the principle of operation & performance of rotating electrical machine like DC Motor, DC Generator, and Transformer
Introduction to automation	ENFC0406	2018	Skill development(Students will be able to use a number of PLC programming languages to develop control solutions.)
Programming in C	ENFC0409	2018	Skill And Employability(Case study to be given to students on uses of C program for development of various real time applications like online examination system, online quiz competition etc. )
Programming for Problem Solving – Java	ENFC0412	2017	Skill And Employability(Understands the concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			helps students in getting jobs in different IT firms)
Data Base Management System	ENFC0414	2018	Skill And Employability( Hands on training on Client/Server Architecture- System Structure , Instance and schema, Data Models, Types of DBMS Query Processing and Optimization: Evaluation of Relational algebra expressions-Query Equivalence-Transaction Processing: Built in SQL functions, Sub Queries-Joins-DCL – TCL- Views – Sequences – Index – Locks PL/SQL Basics – Exceptions – Cursors - Stored Functions – Triggers Case study in industrial standards of Database Management)
Electronics and Its Application	ENFC0415	2018	Employability (Students will develop an updated knowledge in the latest trends)
Electronic Devices	ENFC0416	2018	Employability (Students will get the fundamentals cleared for the basics required in the industry)
Data Structures and C Programming	ENFC0419	2018	Skill And Employability(Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems)
Operating System	ENFC0422	2018	Skill And Employability(This course enables students to



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			understand the basic concepts of operating system with different types of OS, services and system calls, get knowledge of process management, Inter process communication and various CPU scheduling algorithms. It also helps to understand the concept of memory management -paging and segmentation and learn about various I/O systems and mass storage structures.)
Block Chain and Smart Contracts	ENFC0424	2018	Skill And Employability(Hands on in design and program smart contracts and decentralized applications)
Object Oriented Programming through Java	ENFC0902	2018	Skill And Employability(Understands the concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)
Software Engineering using Agile	ENFC0904	2018	Skill (Students get to apply software engineering principles and techniques learnt to a real-life project topic of their choice in a contemporary domain and design-implement novel solution by working together as a team.
Hydraulics & Hydraulic Machines	CECC0103	2018	Skill development(Effectively use performance calculations Understand the accelerated flight performance Understand takeoff and landing performance Effectively use and understand stability for Aircraft.



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			Able to understand the process of aerodynamic designing)
Disaster Preparedness & Planning Management	CECC0102	2018	Entrepreneurship(The student will develop competencies in The application of Disaster Concepts to Management. Analyzing Relationship between Development and Disasters. Ability to understand Categories of Disasters. Realization of the responsibilities to society)
Estimation & Quantity Surveying	CECC0201	2017	Skill development(After completion of the courses the students will gain knowledge of the processes of planning, production, storage, transportation and site installation of various prefabricated units pertaining to a civil engineering construction project. • Students will develop innovative ideas about prefabricated structures)
Pre-Fabricated Structures	CECC0202	2018	Skill Development (Become knowledgeable regarding the processes of planning, production, storage, transportation and site installation of various prefabricated units pertaining to a civil engineering construction project)
Concrete Technology	CECC0412	2017	Skill(Demonstrate test and analysis of cement, aggregate, sand, effect of water cement ratio. Prepare concrete, carry out simple formwork and



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>reinforcement with the application of modern Power Tools.</p> <p>Prepare reinforcement of different R.C.C. members i.e, Foundation, beams, columns, slabs, Retaining Wall, etc.</p> <p>Erect scaffolding and make the intricate formwork at different locations.</p> <p>Prepare a bar bending schedule and demonstrate bar bending and calculate the estimated quantity of materials.)</p>
Soil Mechanics	CECC0401	2018	<p>Skill development(• Students will gain knowledge on soil mechanics and the concepts involve in it</p> <p>• Students will develop skill on laboratory experiments, empirical methods and software aids involve in soil mechanics)</p>
Foundation Engineering	CECC0402	2017	<p>Employability(To obtain knowledge about soil properties and methods of soil properties determination in the laboratory, using field tests and considering comparable experience. Basic stability and deformation problems. Principle of spread and deep foundation design.</p> <p>To understand fundamental knowledge of geotechnical works for soil improvement, interaction of structure and subsoil. Basic design methods for excavation and foundation pits with dewatering and sealing systems)</p>





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Transportation Engineering	CECC0403	2018	Skill development(• Students will gain knowledge on planning, material selection for construction, Economics and finance and designing of elements on highway. • Acquire the skill of designing the geometric elements of highway using AUTOCAD CIVIL 3D software.)
Water supply & Waste water Management	CECC0415	2018	Entrepreneurship(• Students will gain knowledge and the concepts involve in it • Students will develop skill on laboratory experiments, empirical methods and software aids involve in hydrology)
Hydrology &Water Resources Engineering	CECC0416	2018	Employability(• Students will gain knowledge and the concepts involve in it • Students will develop skill on laboratory experiments, empirical methods and software aids involve in hydrology)
Quality Control and Risk Management in Construction	CECC0414	2018	Skill Development (Generate quality control schedule for different projects in construction industry. Prepare quality control inspection check lists for selected civil engineering structures. Carryout the field and laboratory tests for quality assessment in construction industry)
Computer Aided Design of Steel Structure	CECC0407	2017	Skill development(to gain the knowledge of Steel design calculation with relevant Indian Standards



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			<ul style="list-style-type: none"> <li>• To acquire skill of converting clients requirement to structural drawing and BOM by using STADD.PRO)</li> </ul>
Computer Aided Design of Concrete Structure	CECC0408	2017	Skill development(To gain the knowledge of RCC design calculation with relevant Indian Standards <ul style="list-style-type: none"> <li>• To acquire skill of converting clients requirement to structural drawing and BOM by using STADD.Pro.)</li> </ul>
GIS and Digital Cartography	CECC0413	2018	Skill development( <ul style="list-style-type: none"> <li>• To study the basic concepts of GIS.</li> <li>• To study the data structure in GIS</li> <li>• To study data conversion in GIS and Meta data</li> <li>• To know the basics, importance, and methods of Cartography</li> <li>• To study the various maps projection and co-ordinate systems.)</li> </ul>
Strength of Material	CECC0411	2018	Employability(Students will acquire knowledge and skill to analyze the effect of force and motion on rigid bodies to solve engineering problems through application of basic laws of mechanics.)
Functional planning and DPR	CECC0501	2018	Skill development( <ul style="list-style-type: none"> <li>• Students will gain knowledge on and the concepts involve in it</li> <li>• Students will develop skill on laboratory experiments, empirical methods and software aids involve)</li> </ul>



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Construction Equipment Management	DECP0101	2018	<p>Entrepreneurship(Students will be able to work with the latest trend of the construction industry needs.</p> <p>Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.</p> <p>Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning.</p> <p>Students will plan various projects relating to advanced building technology with trust.</p> <p>Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant.</p> <p>Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Site Supervision & Measurement Methods	DECP0401	2018	<p>Employability(• Students will gain knowledge on and the concepts involve in it</p> <ul style="list-style-type: none"> <li>• Students will develop skill on laboratory experiments, empirical methods and software aids involve)</li> </ul>
Geotechnical Investigations	DECP0402	2018	<p>Skill development(To obtain knowledge about soil properties and methods of soil properties determination in the laboratory, using field tests and considering comparable experience. Basic stability and deformation</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			problems. Principle of spread and deep foundation design. To understand fundamental knowledge of geotechnical works for soil improvement, interaction of structure and subsoil. Basic design methods for excavation and foundation pits with dewatering and sealing systems)
Repairs, Renovation and Rehabilitation of Structures	DECP0403	2018	Skill development(• After successful completion of the course the students will have capability/knowledge of various important, monumental but distressed and damaged modern materials that longevities old concrete and masonry structures)
Tendering Process, Bidding Contract Agreements & Arbitration	DECP0601	2018	Skill development(• Upon successful completion of the course, students shall be fit in CPWD, state Government departments and infrastructural organizations, persons working in development projects in public or private sectors. Consultancy units, research organizations as well as self-employed practitioners engaged in the planning, design, Procurement, construction, operation and maintenance. • Apply legal aspects of construction projects in construction contract, of issues related to contract administration, apply various disputes resolution techniques including arbitration)
Software Based Project Scheduling and Management	DECP0301	2018	Entrepreneurship(• Identify various activities of a construction



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			project and the critical path for executing the same. • Carry out a major project and prepare a document that contains all aspects of a construction project. )
Project	DEET0300	2015	Employability (Skill development course)
Internship	DEET0800	2015	Employability (Skill development course)
Green Building Design	DEPD0101	2018	Skill development(• To study the theory of sustainability. • To study the changing climatology and contribution of built mass • To learn reduction of carbon foot prints)
Earthquake Resistant Design	DEPD0102	2018	Employability(• To study co-relation with architectural design and performance of building during earthquake • To study advanced structural design parameters • To analyze the detailing of reinforcement design and its impact on performance )
Barrier Free Design	DEPD0103	2018	Skill development(• To study the various provisions in the code • To design or modification based on provision in the code • To analyze the improved performance of the same building with different set of users)
Intelligent Building Design	DEPD0104	2018	Skill development(• To study integrates technology and process to create a facility that is safer, more comfortable and productive for its occupants • To design Smart buildings)



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Architectural Design	DEPD0201	2018	Skill development(• To study the basic concepts of building Design. • To study the climatology, soil condition, site analysis and other factors on design. • To learn building bye laws application while designing any building)
3D Modelling and VR experience of Building	DEPD0202	2018	Skill development(• To understand the Generation of 2D (plan, section and elevation) and 3D modelling. • Able to carve out detailed specification and dimensioning of the following using AutoCAD, Revit Architecture and CATIA)
Remote Sensing & Digital Image Processing	DESP0401	2018	Skill development(• Students will gain knowledge of basic concepts of remote sensing, aerial photogrammetry. • Students will gain knowledge of applications different satellites imagery, image classification techniques and image analysis and interpretation.)
Geospatial Technology and its Application	DESP0901	2018	Skill development(• Students will gain knowledge about the structure of spatial data including file associations, attribute tables, Metadata, coordinate systems, and projections. • To develop software skills in programs used for map production in the modern cartographic workflow.)
Photogrammetry and its Application	DESP0402	2018	Skill development(• Students will gain knowledge about the survey by Photogrammetry method.



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			<ul style="list-style-type: none"> <li>• Prepare DEM, TIN model and generate contour map.)</li> </ul>
Lidar Remote Sensing and its Applications	DESP0201	2018	Skill development(• Students will gain knowledge about LIDAR and its application. • Students will be more skilled in CATIA Civil module )
Smart City Planning	DESP0202	2018	Employability (designing the city features including park, garden etc. Course Outcomes: After completion of this course students will be able to design and plan a twin city model of an area. Students will get more knowledge on designing of building, road, drainage etc. through Autodesk Infrawork)
Building of Cloud Infrastructure	DECT0901	2015	Skill And Employability( Analyze and Understand the functioning of different components involved in Amazon web services and also acquire cloud technology skill for cloud partitioner certification which helps students in getting jobs in different MNCs)
Deployment Architecture - I	DECT0902	2015	Skill And Employability(Evaluate cloud application requirements and make architectural recommendations for implementation, deployment and provisioning applications on AWS)
Deployment Architecture - II	DECT0903	2015	Skill And Employability(Ability to evaluate cloud application requirements and make architectural recommendations for implementation, deployment



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			and provisioning applications on AWS)
Advanced Networking	DECT0904	2015	Skill And Employability(Students had Implemented various VPC,VPN and optimization of network cost and also Understand and building the skills of sub-netting and routing mechanisms)
Problem Solving through Coding	DEST0201	2015	Skill And Employability(Obtain skills to solve problems involving text, numbers and graphics, producing a top-level plan with refinements.)
Linux and Lamp Administration	DEST0402	2015	Skill And Employability(Obtain skills in Linux server administration. Content includes LINUX and Web server installation, system startup/shutdown, hardware configuration, disk and file system structure, package management, TCP/IP networking, system management and security, X-Windows usage and configuration, user management )
Testing and Test Automation	DEST0403	2015	Skill And Employability( students had applied various modern software testing processes in relation to software development and project management)
Python for Data Science and Machine Learning	DEML0201	2015	Skill And Employability(Implement ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			to solve problems in areas computational finance, image processing and computer vision, energy and natural language processing.)
Supervised and Unsupervised Machine Learning	DEML0401	2015	Skill And Employability(Implement several ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able to solve problems in areas computational finance, image processing and computer vision, energy and natural language processing.)
ML Techniques in Image Processing	DEML0202	2015	Skill And Employability(Implemented different Real life Projects in the field of medical and Agricultural image processing)
Introduction to IT Networking & Security	DEIS0121	2015	Skill And Employability(To understand, design and implement appropriate security technologies and policies to protect computers and digital information)
Advanced Networking	DEIS0421	2015	Skill And Employability( Understand and explain Data Communications System and its components and Identify the different types of network topologies and protocols. Enumerate the layers of the OSI model and TCP/IP and explain the functions of each layer, identify the different types of network devices and their functions within



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			a network )
White Hat Hacking Techniques and Tools	DEIS0422	2015	Skill And Employability( Information technologies skill like vulnerabilities, defense-in-depth, penetration testing, the methodology for pen testing/ethical hacking, vulnerability management, incident management, and creating and implementing a security policy will be understood)
Information Technology Infrastructure Library	DEIS0122	2015	Skill And Employability( Obtain the skill about IT Service Management best practices, generic concepts, key principles, gain a comprehensive understanding of the purpose and scope of service strategy, service design, service transition, service operations, and Continual Service Improvement)
Network Security Audit of an Organisation	DEIS0221	2015	Skill And Employability(To perform an IT Network security audit of an organization and prepare a detailed report identifying different weakness of the architecture)
Electromagnetic Field Theory	ECCC0102	2018	Skill Development This subject is a base subject for wireless communication, Antenna Engineering and other advanced communication based subject.
Analog Electronic Circuits	ECCC0401	2018	Skill Development and Employability ( Its an important subject in the curriculum. Its also equivalently



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			important for facing interviews in industry.)
Digital Electronic Circuits	ECCC0402	2018	Skill Development and Employability (Its an important subject in the curriculum. Its also equivalently important for facing interviews in industry.)
Networks and Systems	ECCC0403	2018	Employability (Its also equivalently important for facing interviews in industry. Evaluate Complex Frequencie+E53:E54s, Pole-Zeros of an Admittance or Impedance function and sketch Pole-Zero Plots and to find Resonance, Q-Factor and Bandwidth)
Analog Communication Systems	ECCC0405	2017	Employability (Familiar with analog radio transmitters and receivers Verify the Noise performance of different Modulation Techniques)
Digital Communication Systems	ECCC0406	2017	Employability (Illustrate the classification of channels, Entropy coding methods and different types of Error control codes along with their encoding/decoding algorithms. Examine the Performance of different Digital Carrier Modulation schemes of Coherent and Non-coherent type based on Probability of error)
VLSI Design	ECCC0407	2017	Employability (Design combinational and sequential circuit using CMOS logic Enhancement of complex digital



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			VLSI logic design skill of students which will help them to complete any project work undertaken in higher semesters. Perform back-end physical design)
ARM Processor Based System Design	ECCC0408	2017	Employability (Understand the architecture of ARM Processor Implement real time projects using 32 bits ARM Processor)
RTOS and its Application	ECCC0412	2018	Employability (Develop the skill to implement the Real Time Operating System FreeRTOS in LPC2148 Microcontroller)
Microwave and Radar Communications	ECCC0410	2017	Employability (Integrate the concept of bunching and velocity modulation to summarize the operation of micro wave tubes and the high frequency limitations of conventional tubes. Analyze the principle, operation and characteristics of different Radars and its applications)
Antenna and Wave Propagation	ECCC0413	2018	Employability (Analyze antenna parameters Evaluate the features and analyze the radiation pattern of antennas by using simulation tools Compare wave propagation techniques and illustrate the radio wave behavior in different modes of communications)
General PLC	DEIA0101	2018	Skill development(Students will develop skill of designing Automatic Control System using PLC)



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Basic Electrical (Automation based) and Panel Designing	DEIA0201	2018	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using relevant software & hardware tools)
Supervisory Control and Data Acquisition (SCADA)	DEIA0401	2018	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using SCADA-Schneider-Wonder ware In Touch tools)
Micro Range Programmable Logic Controller	DEIA0402	2018	Skill development (Students will gain Functional skill about the Programmable logic controller used for micro range applications)
Small Range Programmable Logic Controller	DEIA0403	2018	Skill development (Students will gain Functional skill about the Programmable logic controller used for small range applications)
Medium Range Programmable Logic Controller	DEIA0404	2018	Skill development (Students will gain Functional skill about the Programmable logic controller used for medium range applications)
Human Machine Interface (HMI)	DEIA0202	2018	Skill development (Students will gain Functional skill set with hands-on; on PLC based Automation System by using HMI-Allen Bradley-Panel View C600 tools)
Variable Frequency Drive	DEIA0203	2018	Skill development (Students will gain Functional skill to operate the Drive by changing Frequency)
Modern Transmission and Distribution System	DEOM0101	2018	Skill Development ( Students will learn about the Transmission and Distribution system used in Modern days)



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Operation and Testing of Power and Distribution Transformer	DEOM0401	2018	Skill Development ( Students will learn about the operation and testing procedures used in Power & Distribution Transformer)
System Protection and Auxiliaries	DEOM0402	2018	Skill Development ( Students will develop different protection scheme with hardware & software integration)
Construction of HT and LT lines and Cables	DEOM0102	2018	Skill Development ( Students will develop skill set with hands on training & practice on Routine test of LT & HT Line Cable upto 33KV class)
Safety Practice and First Aid	DEOM0201	2018	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques)
Electrical System Layout and Drawing	DEOM0202	2018	Skill Development ( Students will develop different electrical system layout with software application)
Power System Market, Act and Regulations	DEOM0103	2018	Employability (Student will learn power market operation & energy audit process with hands on practice which will lead them to placement in power & energy trading company)
Design of Transformer Core and Winding	DEDRO101	2018	Skill Development ( Students will Manufacture three phase Distribution Transformer of 11KV class as per BIS specification)
Manufacturing of Transformer HT and LT Winding	DEDRO201	2018	Skill Development ( Students will Manufacture three phase Distribution Transformer windings as per BIS specification, during project work)
Manufacturing of Transformer Tank and Accessories	DEDRO202	2018	Skill Development ( Students will Manufacture three phase Distribution Transformer Tank



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			and accessories as per BIS specification, during project work)
Testing and Commissioning	DEDR0401	2018	Skill Development ( Students will develop skill set with hands on training & practice on Type & Routine test of distribution transformer upto 33KV class)
Safety and Protection	DEDR0402	2018	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques & operation of protection schemes in transformer)
Transformer Repair and Maintenance	DEDR0403	2018	Skill Development ( Students will develop skill set with hands on training & practice on Repair & Maintenance of distribution transformer upto 33KV class)
Renewable Energy Sources and Technology	DERE0161	2015	Skill Development (Students will learn and develop the different technologies of renewable energy Sources)
Solar Photovoltaic Technology	DERE0162	2015	Skill Development (Students will learn and develop the different technologies of Solar photovoltaic)
Solar Thermal Technology	DERE0163	2015	Skill Development (Students will learn and develop the hybrid generations that combines the solar photovoltaic along with the Thermal power generations)
Solar Systems for Buildings	DERE0464	2015	Skill Development (Students will learn and develop the roof top solar generation system)
Solar Power Plant	DERE0465	2015	Skill Development (Students will learn the principle of solar power plant)



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Decentralized and Smart Power Grids	DERE0466	2015	Skill Development (Students will learn the principle of solar power plant)
Solar Photovoltaic Laboratory	DERE0267	2015	Skill development (Students will gain the knowledge with hands-on; on different smart power grids like wind, solar by using relevant software & hardware tools)
Solar Thermal Laboratory	DERE0268	2015	Skill Development (Students will develop hands-on, on different solar related live product/project)
Quality Control and Reliability Engineering	MECC0101	2018	Skill development (The students can able to apply the concept of SQC in process control for reliable component production.)
Fluid Power Control	MECC0102	2018	Employability and Skill development (To impart knowledge to students on fundamentals of hydraulic and pneumatic power and their circuits with industrial applications.)
Introduction to Hybrid and Electric Vehicles	MECC0103	2018	Employability and Skill development (Students will acquire knowledge regarding the testing and performance of electric vehicles)
Renewable Energy Systems	MECC0104	2018	Skill (To have a knowledge of energy scene in India.To acquire the skill of analyzing and designing renewable energy systems.To expose the students about energy demand and supply situation in India.)
Manufacturing Technology 1	MECC0401	2017	Skill And Employability (Students will have Knowledge and Skills to Understand Actual Manufacturing Processes used in Industry and





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			will be Able to Correlate a Specific Process with the Part / Component being Produced. Students will be Able to Select the Most Optimum Manufacturing Process for a Specific Product Design and Application.)
Manufacturing Technology 2	MECC0402	2017	Skill And Employability (Students will be Able to Do Process Planning, Develop CNC Part Programs. Students will have Knowledge and Skills to Operate CNC Machines.)
Design for Manufacturing	MECC0403	2017	Skill And Employability (Students will be able to select appropriate manufacturing technology and process to produce a product effectively with quality and optimized production cost. Students will have skills and knowledge to use softwares like CATIA, Novaflow and Solid CV, ProCAST, Flow-3D Cast, DEFORM-3D and PAM-STAMP 2G.)
Finite Element Analysis	MECC0404	2017	Skill And Employability (Students will be Able to Deploy Practical and Industrial Approach using FEA towards Solving Engineering Problems)
Digital Manufacturing	MECC0405	2017	Skill And Employability (Students will be able to use modern software like DELMIA-Quest (Dassault System) and Camtesia to conceptualise and create 3D factory layouts and optimise resource planning. Students will be able to do simulation of manufacturing processes using software tools.)



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Fundamentals of Heat Engine	MECC0415	2018	Skill And Employability (Students will be able to test internal combustion engines for various performance parameters using engine test rigs.Students will be able to carry out emission tests using various types of fuels commonly used in internal combustion engines.)
Design of Thermal Energy Systems	MECC0407	2017	Skill And Employability (Students will be able to identify and select, design and implement appropriate thermal energy system corresponding to specific need.)
Mechanics of Machines	MECC0410	2017	Skill And Employability (Students will have knowledge and skills to analyze , design and develop mechanisms suiting specific applications. Students will have knowledge skills to study and understand working of complex mechanisms and machines enabling them to safely operate and maintain such installations)
Design of Transmission Systems	MECC0412	2018	Skill And Employability (To Enable the Students to Design Basic Transmission Elements using prior theoretical Knowledge)
Fluid Mechanics and Heat Transfer	MECC0414	2017	Skill And Employability (Students will be able to analyze and design various Equipment used in industry using principles of Fluid Mechanics and Heat Transfer)
Introduction to Automobile Engineering	DEAE0101	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Entrepreneurship Opportunities in Automobile Trade	DEAE0102	2018	Employability and Skill development ( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Maintenance of Automobile	DEAE0204	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Design of Basic Automobile Components	DEAE0205	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Subsystems of Automobile	DEAE0401	2018	Employability and Skill development( This gives jobs opportunity in automobile



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			manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Design and Maintenance of Electric Vehicles	DEAE0402	2018	Employability and Skill development ( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Jigs and Fixtures	DECM0101	2015	Employability and Skill development ( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Process Planning and Cost Estimation	DECM0102	2015	Employability and Skill development ( Makes student Industry ready through hands-on education. Provides required industrial experience within the



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			academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Conventional Machining for Cylindrical Shape Component	DECM0201	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Conventional Machining for Prismatic Shape Component	DECM0202	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling



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			learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
CNC Machining	DECM0603	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Non-Traditional Machining and 3D Printing	DECM0604	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the



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			Industrial-Institutional partnership.)
Wood Engineering	DECM0203	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Project	DECM0300	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Internship	DECM0800	2015	Employability and Skill development( Makes student Industry ready through hands-on



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			education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Joining Processes & Technology	DEWD0403	2018	Employability and Skill development( This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Arc Welding, Gas Welding & Brazing	DEWD0201	2015	Employability and Skill development( This gives opportunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Metal Transfer & Weld Metallurgy	DEWD0102	2018	Employability and Skill development( This gives opportunities for self employed by opening a small-scale welding shop to a medium scale





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			industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Design of Welded Joints (CATIA)	DEWD0101	2015	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Welding of Stainless Steel, Aluminium, Copper, Cast Iron and Hard Surfacing	DEWD0603	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Testing of Welded Joints (DT, NDT & Microstructure)	DEWD0604	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Project	DEWD0300	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding



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			shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Basic Metallurgy	DEOC0134	2015	Employability and Skill development (Understand the correlation between processing, structure and properties of metals. Ensure production of metallic components for use in consumer or engineering products)
Power Plant Engineering	DEOC0131	2015	Skill development (Students will be able to work out the problems related to power plant engineering. Students will be able to understand the basics of power plant design.)
Information Theory & Coding	DEOC0136	2018	Employability Design the channel performance using Information theory. Comprehend various error control code properties. Apply linear block codes for error detection and correction. Apply convolution codes for performance analysis & cyclic codes for error detection and correction. Design BCH & RS codes for Channel performance improvement against burst errors
Mobile Communication	DEOC0135	2018	Employability Understand the new trends in mobile/wireless communications networks, understand multiple radio access techniques, analyze



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			various routing algorithms used in mobile/wireless networks, identify the issues in transport and application layers.
Power System Generation	DEOC0121	2015	Skill development ( Students will learn the SKILL of generating electrical powers from different sources used in Power System)
Electromagnetic Theory	DEOC0122	2015	Employability Knowledge of, physical interpretation, and ability to apply Maxwell's equations to determine field waves, potential waves, energy and charge conservation conditions. Experimental measurement of voltages induced by time varying magnetic flux. Flux determination.
Power Quality and FACTS	DEOC0123	2018	Skill development ( Students will learn the SKILL of different power quality issues and flexible AC transmission systems)
Soft Computing Techniques - II	DEOC0124	2018	Skill development(Students will develop the SKILL related various techniques used in soft computing)
MATLAB for Electronics	DEOC0233	2018	Employability Able to use Matlab for interactive computations. Familiar with memory and file management in Matlab. Able to generate plots and export this for use in reports and presentations. Able to program scripts and functions using the Matlab development environment.
Basic Electrical Maintenance	DEOC0221	2015	Skill development(This course will enable students to safely



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			undertake electrical maintenance of domestic and Industrial appliances)
Automotive Electrician	DEOC0222	2015	Skill development(Student will acquire the skills to identify and solve problems related to electrical parts (harness) of the vehicle)
Advanced Power Electronics	DEOC0421	2015	Skill development (Students will gain Functional skill set with hands-on; on Advnce Applications in Power Electronics by using relevent tools)
Electrical Drives	DEOC0422	2015	Skill development (Students will gain Functional skill set related to different DC & AC drives.)
Advance Control System	DEOC0423	2015	Skill development (Students will gain Functional skill related to control theory, Advanced process control (APC) that refers to a broad range of techniques and technologies implemented within industrial process control systems
Instrumentation and Measurement	DEOC0424	2018	Skill development ( Students will develop the SKILL about various bridges used to measure R, L, C and measuring instruments like Galvanometer, Potentiometer, CT & PT )
PCB Design and Analysis	DEOC0425	2018	Employability To design and fabricate PCB for prototyping as well as in Industrial Production environment. This will help students to innovate faster with electronics technology.
Advanced Structural Analysis	ISSD1101	2016	Skill development(• Skill in developing computer program for



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			the structural analysis of two-dimensional frames. • To obtain some experience in the use of modern structural analysis programs.)
Structural Dynamics	ISSD1102	2016	Skill development(To provide basic knowledge of mathematics, science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system, component or process as per needs and specifications when subjected to dynamic loads.)
Theory of Elasticity & Plasticity	ISSD1103	2016	Skill development(• Ability to apply the knowledge of mathematics, science and engineering with Elasticity concept to solve problems in two Dimensional Problems in Polar Coordinates. • To provide the students with basic skill of plasticity concept applicable in structural systems)
Architectural Design	ISSD1104	2016	Skill development(Provide skill with a well-educated workforce that is ready and able to perform valuable architectural and construction engineering and managerial services immediately after graduation The ideas / concepts learned in Basic Design and other related subjects have to be carried forward into the architectural design now envisaged. The exercises may be taken up as mentioned herein.)



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Computer Graphics (2D & 3D Drafting)	ISSD1106	2016	Skill development(At the end of the course, the students have a skill and employability to: Event driven I/O and callback programming & typical structure of an interactive, real-time computer graphics program " 2&3D transformations, homogeneous co-ordinates, post-multiplication " Modelling and instantiation)
Civil Engg. MATLAB Lab	ISSD1107	2016	Employability (Differential equations and its application to engineering problems Soft computing applications to engineering problems)
Finite Element Method	ISSE1201	2016	Skill development(• Enable the students to identify, formulate and skill to engineering problems related to one, two and three Dimensional structures subjected to static loads. • To show the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to wrong analysis)
Design of Prestressed Concrete Structures	ISSE1202	2016	Skill development(Skill to control of the losses involved of pre-stressing concrete and ability to justify advantages and disadvantage.)
Concrete Technology	ISSE1203	2016	Skill development(• To study and understand various types of technology added in concrete • Have a skill to develop in design of various grades of concrete)



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Research Methodology	ISRM1201	2016	Skill development(1. Skill to research problem formulation. 2. Analyze research related information 3. Follow research ethics 4. Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.)
3D Modeling using ANSYS and CATIA	ISSE1205	2016	Skill development(Introduction to Engineering Design Different types of Numerical Methods & Applications, Practical Applications of FEA, Basics of finite element method (FEM),)
Prefabricated Structures or Preengineered Buildings	ISSE1206	2016	Skill development(• Grasp of the construction methods using these elements have the skill of the construction methods using these prefabricated elements)
Renovation and Retrofitting of green structures	ISSE1207	2016	Skill development(By the end of this course students will have the skill /knowledge of •various distress and damages to concrete and masonry structures •the importance of maintenance of structures, types and properties of repair materials etc)
Advanced Construction Materials	ISSE1208	2016	Skill development(• To study the polymers in civil engineering construction • To study the corrosion of concrete in various environments)
Soil Dynamics and Geotechnical Earthquake Engineering	ISSE1209	2016	Skill development(Develop skill in applying theory of vibrations to basic facets of soil behavior under dynamic loading together with



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			the exposure of the fundamental principles of wave propagation in engineering example)
Traffic Engineering And Management	ISTE1101	2018	Skill development(• To learn traffic studies, their analysis and their interpretation. • To learn analysis of LOS. • To learn design of signal. • To learn transportation system management.)
Pavement Materials And Construction	ISTE1102	2018	Employability(• To learn about characteristic of subgrade soil. • To learn about characteristic of road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)
Transportation Infrastructure Design	ISTE1104	2018	Employability(• To learn Geometric Design of Cross Sectional Elements of various types of roads. • To learn Geometric Design of Horizontal Alignment of Roads • To learn Geometric Design of Vertical Alignment of Roads. • To learn transportation system management)
Pavement Material Lab	ISTE1106	2018	Skill development(• To learn about characteristic of subgrade soil. • To learn about characteristic of road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)





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Traffic Survey Practice	ISTE1107	2018	Skill development(• Fieldwork using Hi-Tech surveying instruments • Clustering using field traffic data • Preparation of questionnaires for OD survey
Pavement Analysis And Design	ISTE1201	2018	Skill development(• To learn about characteristic of subgrade soil. • To learn about characteristic of road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)
Highway Project formulation and Economics	ISTE1202	2018	Employability(• To learn Geometric Design of Cross Sectional Elements of various types of roads. • To learn Geometric Design of Horizontal Alignment of Roads • To learn Geometric Design of Vertical Alignment of Roads. • To learn transportation system management)
Traffic Safety	ISTE1203	2018	Skill development(• To learn Geometric Design of Cross Sectional Elements of various types of roads. • To learn Geometric Design of Horizontal Alignment of Roads • To learn Geometric Design of Vertical Alignment of Roads. • To learn transportation system management)
Survey Lab	ISTE1204	2018	Skill development(Identify specific data and methodologies for effective mapping and



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Transportation Engineering Design Practice	ISTE1205	2018	Skill development(Gain knowledge about the software used in transportation like surface creation, surface profile and cross section of roads.)
Remote Sensing And GIS for Transportation Engineering	ISTE1207	2018	Skill development(• Ability to understand the basics and characteristics of remote sensing. • Ability to process remotely sensed data. • Ability to draw information from remotely sensed data. • Ability to understand the basics and application of GPS in transportation engineering)
Pavement Evaluation ,Rehabilitation and Maintenance	ISTE1208	2018	Employability(• To learn about characteristic of subgrade soil. • To learn about characteristic of road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)
Project Management	ISTE1209	2018	Employability(Identify functions of project management including estimating, job controls, field data



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			collection, scheduling, accounting and design. * method that uses technology to measure cost and productivity through the full life-cycle of enterprise level projects * Contract Management and Tendering
Environmental Impact Assessment for Transportation Projects	ISTE1210	2018	Employability(• environmental issues in decision-making) .• impacts of transportation projects on air quality, society, economy, ecology and travel .• Ecological disturbances . Environmental Issues in Industrial Development
Industry Internship and Project-1	ISTE2101	2018	Employability(Student will be doing live project For 4 months in an Industry and submit a Project Report to concerned guide certified by the Industry Engineer)
Industry Internship and Project-II	ISTE2200	2018	Employability(Student will be performing internship for 3-months in Industry and submitted a report and duly certified certificate from the competent Engineer in charge)
Power System Analysis	ISPS 1101	2016	Skill development (Students will gain Functional skill set with hands-on; on System Modeling Flow & Control System Dynamic Stability by using relevant software & hardware tools)
Non-Linear Control Systems	ISPS 1102	2016	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using



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			relevent software & hardware tools)
High voltage Engineering	ISPS 1103	2016	Skill development (Students will gain Functional knowledge with hands-on; on high voltage engineering application in transformer workshop)
Allen Bradley Micrologix1000, Siemens S7-300	ISPS1104	2016	Skill development (Students will gain Functional skill set with hands-on; on System Automation by using relevent software & hardware tools)
Schneider MODICON TSX-Micro, GE Versamax- Microplus	ISPS1105	2016	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using Allen Bradley Micrologix1000, Siemens S7-300 tools)
Basic Electrical (Automation based)	ISPS1106	2016	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using relevent software & hardware tools)
Basic Industrial Automation (Power Electronics Based)	ISPS1107	2016	Skill development (Students will gain Functional skill set with hands-on; on High Power Rectifire & High Capacity Inverter Units by using relevent software & hardware tools)
Digital Control Systems	ISPS1201	2016	Skill development (Students will gain Functional skill set with hands-on; on Digital Control System Applied to Power System by using relevent software & hardware tools)
Advanced Power Electronics	ISPS1202	2016	Skill development (Students will gain Functional skill set with hands-on; on Advnce Applications



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			in Power Electronics by using relevent tools)
Power SystemDynamics &Stability	ISPS1203	2016	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevent software & hardware tools)
SCADA-Schneider-Wonder ware In Touch	ISPS1204	2016	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using SCADA-Schneider-Wonder ware In Touch tools)
SCADA-AllenBradley-RSVView32	ISPS1205	2016	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using SCADA-AllenBradley-RSVView32 tools)
General PLC	ISPS1206	2016	Skill development (Students will gain Functional skill set with hands-on; on PLC based Automation System by using HMI-Allen Bradley-Panel View C600 tools)
HMI-Allen Bradley-Panel View C600	ISPS1207	2016	Skill development (Students will gain Functional skill set with hands-on; on PLC based Automation System by using HMI-Allen Bradley-Panel View C600 tools)
Industry Internship and Project - I	ISPS2101	2016	employability (Student will learn on power system operation & energy audit process with on the job training which will lead them to placement in power & energy company)



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Project Seminar	ISPS2102	2016	Skill Development (Students will develop different project related to operation & maintenance of various power system)
Comprehensive Viva	ISPS2103	2016	Employability( Students will give a comprehensive Viva about all subjects taught in their M.Tech. syllabus.
Industry Internship and Project - II (Thesis)	ISPS2200	2016	employability (Student will learn on power system operation & energy audit process with on the job training which will lead them to placement in power & energy company)
Workshop Practice	BTME 0401	2018	Skill development (identify, and repair various parts used in different machines in different workshops. Will have awareness on advanced aspects of engineering mechanics).
Fluid Mechanics	BTCE 0401	2018	Skill development (apply the principles of fluid mechanics to design simple fluid mechanical systems in engineering.
Engineering Drawing	BTME 0202	2018	Skill development (get preliminary ideas on developing and designing a dairy equipment).
Fundamentals of Microbiology	BTLS0401	2018	Skill development (basic idea of microbiology which will later help in higher study (M. Tech) in microbiological field.)
Milk Production Management and Dairy Development	BTAS0401	2018	Entrepreneureship and Skill (learn about the different breed, dairy farm practices, reproductive cycle, artificial insemination etc.)
Communication Skills	BTHU0401	2018	Skill development (able to speak, read and write english fluently which will help them for higher



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			studies, interviews and other communication modes)
Computer and Application Software Packages	BTCS0401	2018	Skill development (to appear different exams, doing mails, preparation of spread sheet, data base management in dairy industry)
Biochemistry	BTLS0402	2018	Skill development (understand various metabolic pathways and their interconnections which will further help to understand the energy utilization and assimilation of different dairy products in human body)
Environmental Studies	BTBS0401	2018	Skill development (proper utilization of natural resources, recycling of organic wastes and different threats to conserve natural resources as well as various aspects of waste management)
Evolution of Management Thought	MGGM1101	2011	Application of Basic management principles- Skill development
Basic Communication Skills	MGGM1102	2011	Competence in oral, written, and visual communication: Employability, Use current technology Practicals - Skill development
Managerial Economics	MGGM1104	2014	Analysis of demand, supply, production, market; Application of different economic paradigms using Microeconomics concepts- Employability
Managerial Computing	MGIT1101	2011	MS Word, Excel, power point- Skill development
Accounting for Managers	MGFM1101	2011	Preparation of financial statement, preparation of cost sheet and financial analysis of



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			financial statements: Employability & Entrepreneurship
Marketing Management	MGMK1101	2011	Interpretation complex marketing issues facing by a variety of enterprises: Employability & Entrepreneurship
Organizational Behaviour	MGGM1105	2011	Analyze and compare different models of Human Behaviour - Employability, Entrepreneurship
Management Information Systems	MGIT1202	2011	Utilize Management Information Systems in achieving business competitive advantage - Employability, Entrepreneurship & Skill development
Communication Perspective of Management	MGGM1206	2011	Write business proposals and reports-Employability, Entrepreneurship & Skill development
Human Resource Management	MGHR1201	2011	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability & Entrepreneurship
Management & Market Research	MGGM1207	2011	Applying marketing research into the broader strategic planning process, with reference to existing theories, concepts and models from within the program: Employability & Entrepreneurship
Financial Management	MGFM1202	2011	Application of concepts of financial management, investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship
Production & Operations Management	MGOM1201	2011	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship





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Economic Environment of Business	MGGM1208	2014	Analysis of economic policy and environment-Employability, Entrepreneurship
Aptitude and Career Enhancement-I(Practice)	MGGM1210	2014	Quatitative aptitude and logical analysis- Employability, Entrepreneurship & Skill development
Production Planning and Inventory Control	MGOM2309	2018	Develop Production planning and handel control issues in both service and manufacturing industries- Employability, Entrepreneurship
Sales and Distribution Management	MGMK2302	2011	Manage and enhance the sales force productivity and performance:Employability & Entrepreneurship
Summer Internship Programme	MGGM1211	2011	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship
Strategic Management and Ethics	MGGM2318	2015	Conduct analysis of competitive situations of the enterprise and inroduction of ethical practices - Employability, Entrepreneurship
Operations Research	MBDM1202	2017	Manage and enhance the sales force productivity and performance:Employability & Entrepreneurship
Logistics and Supply Chain Management	MGOM2302	2011	Analyzing the manufacturing operations of a firm- Employability, Entrepreneurship
Legal Environment for Enterprise	MGGM2315	2011	Analyze business issues and to understand broader legal issues- Employability, Entrepreneurship
Project Management	MGGM2316	2011	Describe a project life cycle, identify the resources needed for each stage, develop a project scope - Employability, Entrepreneurship



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Live Project (Dissertation in Domain Area)	MGEL2401	2015	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
GIS and Participatory Planning	MGEL2403	2015	Identification of the resources needed, develop a project scope utilizing GIS technology- Skill development
Rural Marketing	MGMK2312	2015	Able to successfully enter the rural market for promotion of his products and services: Employability & Entrepreneurship;
Services Marketing	MGMK2313	2015	Able to deliver services successfully Employability & Entrepreneurship
Customer Relationship Management	MGMK2314	2015	Formulate and assess strategic, operational and tactical CRM decisions: Employability & Entrepreneurship
Consumer Behaviour	MGMK2305	2011	Detect the relevance of consumer behaviour to the entire marketing process, the nature and stages of consumers' decision making and the factors influencing consumers' choices: Employability & Entrepreneurship;
Brand Management and Marcomm	MGMK2306	2011	Appraise key issues in managing brand portfolio and making strategic branding decisions: Employability & Entrepreneurship
B2B Marketing	MGMK2307	2011	Effective B2B marketing strategy design and execution: Employability & Entrepreneurship;



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Retail Management	MGMK2315	2011	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
International Marketing	MGMK2316	2015	Assess an organization's ability to enter and compete in international markets: Employability & Entrepreneurship;
Social Marketing	MGMK2310	2011	Develop a strategic plan for identifying opportunities for implementing social marketing in a company:Employability & Entrepreneurship
Digital Marketing	MGMK2311	2015	Apply various concepts and importance of digital marketing - Visualize various application in diverse areas of sales & marketing - Employability & Entrepreneurship;
GIS for Marketing	MGMK2317	2015	Develop customer marketing applications such as acquisition, marketing, messaging, purchasing, and retention: Employability & Entrepreneurship;
Advanced Managerial Accounting	MGFM2310	2015	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship;
Financial Derivatives	MGFM2311	2015	Competent in derivative products such as forward, future, option & swap and to make on line trading on futures and options: Employability & Entrepreneurship;
Financial Institutions, Markets & Services	MGFM2305	2011	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;



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<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Commercial Banking and ALM	MGFM2306	2011	Use techniques for Asset/Liability Management for smooth operation of the Bank. This will help in employability in Banking Sector - Employability & Entrepreneurship
Insurance & Risk Management	MGFM2307	2011	Use techniques for identifying, measuring and managing the risk - Employability & Entrepreneurship
Security Analysis And Portfolio Management	MGFM2308	2011	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal & Financing	MGFM2309	2014	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Corporate Restructuring	MGFM2312	2015	Use techniques of Financial Corporate valuation and Engineering - Employability & Entrepreneurship
Financial Planning and Wealth Management	MGFM2313	2015	Use methods to determine the ways of personal tax planning, retirement and estate planning for an individual and design a financial plan -Employability & Entrepreneurship
Current Asset Management	MGFM2314	2015	Evaluate comparative current asset management policies and their impact on the firm's profitability, liquidity, risk and



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			operating flexibility: Employability & Entrepreneurship;
Service Operations Management	MGOM2303	2011	Carry out optimal inventory management- Employability, Entrepreneurship
Total Quality Management	MGOM2311	2011	Use statistical approach for quality control, ISO and QS certification process- Employability, Entrepreneurship & Skill development
Technology Management	MGOM2312	2015	Technology adoption and technology transfer- Employability, Entrepreneurship
Purchase and Materials Management	MGOM2305	2011	Develop materials requirement planning technique, handle issues related to overstocking and under stocking- Employability, Entrepreneurship
Environment & Industrial Safety	MGOM2306	2011	Formulate or design a system, process, procedure, or program to meet desired safety needs- Employability, Entrepreneurship
Business Process Re-engineering & Simulation	MGOM2307	2011	Model and develop improved business processes that require IT and organizational redesign- Skill development
Enterprise Resource Planning	MGOM2308	2011	Develop Generic Model of ERP and Implementation of General ERP Methodology- Employability, Entrepreneurship & Skill development
Supply Chain Modelling	MGOM2310	2011	Value creation and revamping supply chains for becoming competitive in the market- Employability, Entrepreneurship
Organization Change and Development	MGHR2305	2011	Bring out appropriate changes in the organization and becoming a change agent- Employability, Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Knowledge Management	MGHR2308	2011	Critically apply theories and models to organizations for success- Employability, Entrepreneurship
Human Resource Planning and Sourcing	MGHR2312	2015	Development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes- Employability, Entrepreneurship
Training and Development	MGHR2311	2011	Assess, design and implement various methods, techniques and sources of training- Employability & Skill development
Leadership Development	MGHR2313	2015	Develop critical thinking skills and lead the organization- Employability, Entrepreneurship
Organization Structure and Design	MGHR2310	2014	Designing effective organizational structure keeping in view business strategies - Employability, Entrepreneurship
Rural Immersion Programme (Practice)	MGRM2305	2015	Carry out participatory planning with the community, develop strategies for intervention - Employability & Skill development
Sustainable Livelihood System (SLS)	MGRM2306	2015	Employ appropriate software to record, maintain, retrieve and analyze human resources information - Employability, Entrepreneurship & Skill development
Public System Management	MGRM2307	2015	Comprehend and apply the basic principles of public administration model - Employability, Skill development
Natural Resource Management	MGRM2309	2015	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve management objectives-



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Employability and Entrepreneurship
Social Entrepreneurship	MGRM2310	2015	Students will be able to establish social enterprises- Entrepreneurship
Gender and Development	MGRM2311	2015	Utilize the different tools and techniques for gender planning, analysis and evaluation in the development sector- Employability
Hospital Administration	MGHM230 1	2017	Create policy and processes and execute decisions in compliance with the legal, regulatory and ethical considerations inherent in managing healthcare systems and organizations- Employability
Management Information Systems for Hospital	MGHM230 2	2017	Analyze existing systems and design technology solutions appropriate to the hospital- Employability & Skill development
Management of Out-Patient Department	MGHM230 3	2017	Deal the issues effectively in emergency services, can plan, organize and supervise the activities of Minor Operation Theatre, Manage treatments of referral & cross referral cases- Employability & Skill development
Risk and Disaster Management	MGHM230 4	2017	Handle Security Management Effectively in Hospitals, Control and Prevent hospitals from getting infected, Plan and design fire protection in hospitals, Handel radioactive waste collection and disposal in hospitals- Employability
Legal and Ethical Issues for Hospitals	MGHM230 6	2017	Handle medico-legal issues effectively, Ensure appropriate patient relationship, Handle trade unions - Employability



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Project Management in Health Care	MGHM2308	2017	Plan and implement health sector projects, Carry out feasibility analysis of health sector projects, Carry out demand analysis in health care sector- Employability
Marketing of Hospital Services	MGHM2309	2017	Handle challenges in hospital services marketing, Design new hospital services, Engage appropriate channels for hospital service marketing, Use marketing communication with technical knowledge- Employability, Entrepreneurship
Patient Care and Behaviour	MGHM2311	2017	Motivate patients and instrumental in shaping positive attitude towards hospital, Carry out audit on patient behaviors, Handle the role of hospital administrator effectively- Employability & Skill development
Web Traffic Generation	MBDM2201	2017	Increase traffic in any website, Popularizing websites- Employability, Entrepreneurship & Skill development
Link Building & e-WoM	MBDM2202	2017	Increase links through web, Building relationships through the web- Employability, Entrepreneurship & Skill development
Social Media Marketing	MBDM2203	2017	Develop effective social media marketing strategies for various types of industries and businesses- Employability, Entrepreneurship & Skill development
Branded Content and the Future of Media	MBDM2204	2017	Develop and market branded contents, Employability,





<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Ideas, Brands and Business	MBDM2205	2017	Make strategic branding decisions- Employability, Entrepreneurship
Brand Planning and Consumer Insights	MBDM2206	2017	Design and execute intelligent and innovative research studies to scan the environment, identify consumer insights, and use those insights to manage the brand- Employability, Entrepreneurship
Digital Strategies and Planning	MBDM2207	2017	Create a digital marketing plan and budget; identify suitable measures to set objectives and evaluate digital marketing - Employability & Entrepreneurship;
Mobile & E-Mail Marketing	MBDM2208	2017	Ability for technology adoption, various devices, changing nature of services and ecosystems - Skill development
Search Engine Optimization	MBDM2209	2017	Able to improve sales volume through search engine optimization - Skill development
Search Engine Marketing	MBDM2210	2017	Abile to improve sales volume through Google AdWords and other elements of Search Ad - Skill development
Technology of e-Commerce	MBDM2211	2017	Able to integrate distributed database technologies within the internet architecture - Skill development
Online Reputation Management	MBDM2212	2017	Ability to give a structure of quality websites and portals - Skill development
Affiliate Marketing	MBDM2213	2017	Able to structure quality web designing for affiliate marketing - Skill development
Web Content Writing	MBDM2214	2017	Ability to develop creativity and creating quality content- Skill development



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Power Plant System	MGPM2302	2018	Plan and administer policies for power plants, Handle usages of equipment in power plants effective, Carry out job designing appropriately- Employability,
Project Planning, Analysis and Management	MGPM2303	2018	Carryout feasibility analysis of projects (Market, Technical, Financial and Economic), design project plan, Apply the risk management plan and analyze the role of stakeholders- Employability, Entrepreneurship
Integrated Energy Management & Power Planning	MGPM2305	2018	Develop plan for sustainable use of alternative sources of energy, Plan for generation and sharing of load, Central power system and grid plan - Employability
Financing Energy Sector Projects	MGPM2306	2018	Carry out feasibility study of projects for micro, small and medium enterprises, Handle legal issues effectively, Handle project financing- Employability, Entrepreneurship
Power Pricing & Power Purchase Agreement	MGPM2307	2018	Develop agreements for power purchase, Calculate capital cost operational cost, development cost- Employability, Entrepreneurship
Renewable Energy for a Sustainable Future	MGPM2310	2018	Plan for utilization of renewable energy, Design facilities for solar, wind and tidal energy- Employability, Entrepreneurship
Risk Hazard and Environment	MGPM2311	2018	Establish first aid facilities, Plan for risk reduction, Develop hazardous waste management - Employability
Energy Conservation & Update	MGPM2312	2018	Establish first aid facilities, Plan for risk reduction, Develop



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			hazardous waste management - Employability
Maintenance Management and Inventory Control	MGPM2313	2018	Handle inventory properly, Job designing, Manage production maintenance- Employability,
Basics of Data Warehousing and Business Intelligence	MGDA1106	2016	Able to make better business decisions by using Data warehousing business intelligence tool- Skill Development
Advance Business Communication	MGDA1209	2016	Able to make better business communication- Employability & Entrepreneurship
Information System in Business	MGDA1210	2016	Analyze actions affecting the business as well as prepare cost estimates and forecasts- Employability & Entrepreneurship
ETL , Data modeling and Cube Design	MGDA1215	2016	Able to analyze data objects and figuring out the relationships between them- Employability and Skill development
Data Visualisation with Power BI and Tableau	MGDA1216	2016	Able to represent data visualization for business analytics- Skill development
Unstructured Data Analytics & Machine Learning	MGDA1213	2016	Make data-driven recommendations and decisions based on only the input data- Skill development
Advanced Data Modelling & Mining with R	MGDA1214	2016	Use the tool to clean, analyze, and graph data- Skill Development
Project (Project Mode in Organization)	MGDA1200	2016	It will enable learner to easily cope up with harsh industry or startup environments- Employability & Entrepreneurship
Sustainable Entrepreneurship Development	MGDM0103	2018	To promote sustainable enterprises- Employability, Entrepreneurship



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Project Management	MGAM0102	2018	Describe a project life cycle, identify the resources needed for each stage, develop a project scope - Employability, Entrepreneurship
Summer Internship	MGDM0801	2018	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship
Development and Globalisation	MGDM0107	2018	Analyzing the manufacturing operations of a firm, dealing with fundamental issues of development and globalization - Employability
Research Methods	MGAM0103	2018	Application of modern analytical tools and techniques for management decision making, research designing, sampling, analysis of data, hypothesis formulation and testing- Employability, Entrepreneurship
Gender Issues in Development	MGDM0109	2018	Adopt different tools and techniques for gender planning, analysis and evaluation in the development sector- Employability
Development Internship	MGDM0802	2017	Skills to appraise concepts at real time situations-Skill development
Development Action Research Thesis	MGDM0301	2018	To develop writing and analytical skills- Skill development
Accounting for Managers	MGFA1101	2018	Preparation of financial statement, preparation of cost sheet and financial analysis of financial statements: Employability & Entrepreneurship
Agriculture Action Research Thesis	MGAM0301	2018	To develop writing and analytical skills- Skill development



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Micro and Macro Economics	MGDM 1104	2014	Application of different economic paradigms using Microeconomics concepts- Employability
IT Enabled Communication	MGDM 1103	2014	Use IT tools for effective communication - Skill development
Financial Inclusion and Micro-finance	MGDM 2303	2014	To appraise the scenario of financial inclusion in the country , acquire skills to operate in Micro Finance sector - Employability, Entrepreneurship
Economic Environment for Agriculture	MGAM1204	2017	Developing aggregate capacity plans and agricultural policies for sustainable agricultural development, risk management strategies and MPS in operation environments- Employability
ICT in Agriculture	MGAM1102	2017	Applications of information & Community technology in various fields of agriculture and promoting the applications of ICT in agriculture - Employability, Entrepreneurship
Agricultural Marketing	MGAM1203	2017	Effectively evaluate the challenges and prospects of agri marketing system, : Employability & Entrepreneurship
Natural Resource Management	MGDM 2406	2014	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve management objectives- Employability and Entrepreneurship
Post-harvest and Processing Management (Theme Based)	MGAM2108	2017	Carry out Interdisciplinary approach to post-harvest management including biology, agricultural sciences, and management, Employability,



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Live-stock management (Theme Based)	MGAM2203	2017	Manage animals for food and fiber production: Employability & Entrepreneurship
Commodity market and trading (Theme Based)	MGAM2209	2017	Develop plans to minimize risk through trade strategies: Employability, Entrepreneurship
Agricultural Internship	MGAM0802	2014	To apply and evaluate the learned concepts, theories at real time situations- Skill development
Basic Financial Accounting	BBAR1102	2015	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Management Principles and Applications	BBAR1103	2016	Application of Basic management principles in organizations- Employability
Micro Economics	BBAR1104	2015	Utilize micro economic concepts and techniques to take business decisions Employability & Entrepreneurship
Computer application in business	BBAR1105	2015	Identify and utilize appropriate technology for effective decision-making and improved performance- Skill Development
Business Statistics	BBAR1203	2016	Use statistical tools for managerial decision-making- Employability, Entrepreneurship
Macro Economics	BBAR1204	2015	Apply macroeconomic perspective to solve business issues and take appropriate policy decision- Employability & Entrepreneurship
Human Resource Management	BBAR2101	2015	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability & Entrepreneurship
Principles of Marketing	BBAR2102	2016	Solving marketing issues faced by a variety of enterprises :



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			Employability & Entrepreneurship;
Cost & Management Accounting	BBAR2103	2016	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship
Production & Operation Management	BBAR2105	2015	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship
Research Methodology	BBAR2201	2015	Application of modern analytical tools and techniques for management decision making, research designing, sampling, analysis of data, hypothesis formulation and testing- Employability, Entrepreneurship
Operation Research	BBAR2202	2015	Develop a report that describes the model and the solving technique, analyze the results and propose recommendations in language understandable to the decision-making processes in Management - Employability, Entrepreneurship
Financial Management	BBAR2203	2016	Application of concepts of financial management, investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship
Tally and ERP	BBAR2205	2016	Preparation of financial statement of different types of organizations with Tally: Skill development
Financial Institution and Markets	BBAR3101	2016	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;



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Business Law for managers	BBAR3102	2016	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters- Employability & Entrepreneurship
Summer Internship	BBAR3103	2016	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Business Policy	BBAR3201	2016	Carry out SWOT analysis of a firm and develop an environment appraisal that will lead to formulation of strategic plans: Employability & Entrepreneurship
Entrepreneurship Development	BBAR3202	2016	Develop business plan, assess the various opportunities and constraints for new business, develop entrepreneurial traits- Entrepreneurship
SPSS	BBAR3203	2016	Use SPSS for analyzing data and define a variety of statistical variables-Skill Development
International Finance	BBAF3101	2016	Use techniques for managing the financial issues in international environment - Employability
Investment Banking & Financial Services	BBAF3102	2016	Use techniques for raising funds from capital market and from different sources- Employability
Investment Analysis & Portfolio Management	BBAF3103	2016	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal	BBAF3104	2016	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial





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			appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Business Analysis & Valuation	BBAF3105	2016	Analyze and interpret the financial statements for various decision making purposes: Employability & Entrepreneurship
Strategic Corporate Finance	BBAF3107	2016	Use valuation principles, tools & techniques, the link between valuation and corporate finance, management buy-outs valuing real assets in the presence of risk: tracking portfolios and real asset valuation- Employability
Research Project	BBAF3108	2016	Identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship
Consumer Behaviour	BBAM3101	2016	Apply the concepts and theories covered in the course to devise effective solutions: Skill Development
Advertising & Brand Management	BBAM3103	2016	Appraise key issues in managing brand portfolio and making strategic branding and advertising decisions: Employability & Entrepreneurship
Retail Management	BBAM3104	2016	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
Distribution & Supply Chain Management	BBAM3105	2016	Design and implement distribution channel strategy: Employability, Entrepreneurship
Marketing of Services	BBAM3106	2016	Design service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of



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			customer service offerings: Employability
International Marketing	BBAM3107	2016	Assess an organization's ability to enter and compete in international markets: Employability & Entrepreneurship;
Research Project	BBAM3108	2016	Competent with identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship; Uses techniques of analyzing live data for solving research problem- Skill development
Hospitality management	BBAM3109	2016	Create policy and processes and execute decisions in compliance with the legal, regulatory and ethical considerations inherent in managing organizations in hospitality sector- Employability
HRD : Systems & Strategies	BBAH3101	2016	Prepare strategies for development of human resources in organizations- Employability
Training & Development	BBAH3102	2016	Prepare training calander and training contents by analysing the need-Employability
Management of Industrial Relations	BBAH3103	2016	Plan policies towards Labour Welfare and maintain sound Industrial Relations-Employability, Entrepreneurship
Performance & Compensation Management	BBAH3104	2016	Fixing performance standards and performance indicators that reflect the employees range of responsibilities, Designing a pay structure- Employability, Entrepreneurship



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Counselling & Negotiation Skills for Managers	BBAH3105	2016	Negotiation with business enterprises- Employability, Entrepreneurship
Cross Cultural HRM	BBAH3106	2016	Diversity management respecting the culture of employees- Employability, Entrepreneurship
Talent & Knowledge Management	BBAH3107	2016	Develop knowledge management process in the organization- Employability
Research Project	BBAH3108	2016	Knowledge and skills in preparing a project report- Employability, Entrepreneurship & Skill development
International Trade Policy & Strategy	BBAB3101	2016	Analyze new opportunities in international trade, global supply and value chains, investment agreements, trade in services, competition policy and regional economic integration- Employability
Global Business Environment	BBAB3102	2016	Analyze the key decisions that multinational firms make in relation to the choice of markets and entry strategies- Employability
International Accounting & Reporting System	BBAB3105	2016	Prepare the mandatory financial statements, according to the IFRS- Employability
Multinational Business Finance	BBAB3106	2016	Can handle – Problems and issues in foreign investment, Manage payment settlements- Employability
Research Project	BBAB3108	2016	Project writing skills and utilization of research methodologies in a project- Employability, Entrepreneurship
Financial Accounting I	BCFA1102	2017	Preparation and use of financial statement of different types of



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			organizations: Employability & Entrepreneurship
Business Mathematics	BBAR1106	2017	Data analysis using mathematical function- Employability & Entrepreneurship
Business Economics	BCFA1104	2017	Apply macroeconomic perspective to solve business problems-Employability & Entrepreneurship
Business Law	BCOR1202	2017	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters-Employability & Entrepreneurship
Business Environment	BBAR1206	2017	Analyze business environment and take appropriate decision Employability and Entrepreneurship
Financial Accounting II	BCFA1207	2017	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Indirect Taxes / GST	BBAR2107	2017	Calculate and file GST, levy and collection of tax, input tax credit, IGST act GSTN etc.: Employability & Entrepreneurship
Tally.ERP 9	BBAR2109	2017	Preparation of financial statement of different types of organizations with Tally: Skill development
Cost & Management Accounting	BBAR2110	2017	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship
Corporate Law	BBAR2108	2017	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters-Employability & Entrepreneurship



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E-Commerce	BBAR2209	2017	carry out entrepreneurial activities electronically (E-commerce) Employability
Advanced Excel	BBAR2208	2017	Utilize advance features of Ms-excel in the day to day activities of the business,alsofor improved decesion making and performance- Skill development
Auditing	BBAR2210	2017	Identify the areas of fraud and errors in the accounts and take corrective actions while presenting the audit report: Employability
Business Ethics & Governance	BBAR2206	2017	Inroduction of ethical practices in business - Employability, Entrepreneurship
Corporate Accounting	BBAR3109	2017	Develop Accounting procedures used in corporates and the strategies involved in the corporate decisions.: Employability & Entrepreneurship
Financial Market Operation	BBAR3110	2017	Analyze Money market,Capital market, its instruments and apply the same in organizations- Employability
On Job Internship-I	BBAR3111	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
On Job Internship-II	BBAR3211	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Communication Research Methods	MAMC1101	2018	Analyze data with techniques of social science, media research - Skill development



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Introduction to Print & Electronic Media	MAMC1102	2018	Competence in Print and Electronic Media and can work in Print and Electronic Media industry-Skill development
Society, Media and Communication	MAMC0501	2018	Skill development; Competence on the media business, its functioning and generate idea on inter relationship between media and society.
Cultural Studies	MAMC0903	2016	Skill development; Competence in the process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures
Advanced Digital Media	MAMC1103	2018	Students will be able to Competence skills in modern media and will be able to analyze advertising, Marketing, social networking and using social media for different purposes. - Skill development
Film studies	MAMC1105	2018	Students will be able to develop skills in different aspects of Film and will be able to analyze film-Employability
Advertising and Public Relations	MAMC1106	2018	After studying this paper student will be able to employ Public Relations and Advertising industry and its functioning.-Employability
Thesis	MAMC0301	2018	Employability: Analysing Media issues and analysis of media content.
Animation	MCDE0601	2016	Ability to create quality animation performance through a creative and professional portfolio using principles of animation.will help in Employability and Skill development



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Radio Jockeying	MCDE0602	2016	Skill development in aggregate capacity to develop the skills of a Radio Jockey.
TV Anchoring	MCDE0603	2016	Skill development in the aggregate capacity to develop the skills of a Television Anchor.
Fashion Photography	MCDE0604	2016	Skill development: Developing competency for professional fashion photography.
Camera Operator	MCDE0605	2018	Skills development in camera handling and planning and producing programs for television and Photography.
Video Editor	MCDE0606	2018	Skill development in television field and its functioning. Build the ability to develop and demonstrate strategic plans and planning methods in television content production.
Web Content Development	MCDE0607	2016	Skill development: Competence in Content development for web site or digital media.
Sound Engineer	MCDE0608	2018	Skill development on sound editing with different software.
Adobe tools and Illustrations	MCDE0609	2018	Work on Adobe Illustrator in the beginner level, and on graphics designing. Skill Development and Employability
Communication in History and History of Communication	MCFC0501	2016	Utilise the skill in communication of the students- Skill development and students can able to work in new communication technologies at different points of time- Employability
Introduction to Communication Theory	MCCC0101	2016	Use the Communication skill and able to differentiate between different forms and types of communication and Competence



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			of audience research traditions- Skill development
Introduction to Print and Electronic Media	MCFC1101	2018	Competence in Print and Electronic Media and can work in Print and Electronic Media industry-Skill development
Introduction to Social Media	MCCC1101	2018	Student will able to get employment on Social media-Employability
Media, Communication and Culture	MCFC 0902	2016	Enhance the skill of student can analyze process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures-Skill development
Electronic Media	MCCC1102	2018	Students can develop their skills in in TV/Radio/ Digital media platforms-Skill development, Get job in TV/Radio/ Digital media-Employability
Development Communication	MCCC0904	2016	Students will make strategy designing and campaign designing skill and able to develop contents for development purposes.-Skill development
Intercultural Communication	MCCC0905	2016	Competence on intercultural communication and culture influences the communication process across societies and the role of culture to influence nonverbal communication-Skill development
Gender and Communication	MCCC0906	2016	Students will enhance their skill and able to raise gender issues and role of media in it-Skill development
Film Studies	MCCC1103	2018	Students will be able to develop skills in different aspects of Film





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			and will be able to analyze film-Employability
PR and Advertising	MCCC1104	2018	After studying this paper student will be able to employ Public Relations and Advertising industry and its functioning.-Employability
Digital Media	MCCC1105	2018	Students will be able to develop skills in new media and will be able to analyze advertising, Marketing, social networking and using social media for different purposes.-Skill development
Final Project	MCCC0301	2016	Skill development;Analysing Media issues and analysis of media content.
Mathematical Physics	MSCP1101	2017	Skill - Tensors: Tensor analysis, Pseudo-tensors, Dual tensors. Gamma function and Beta Function, Fourier Transforms:Fourier Transforms, Properties of Fourier Transforms, Convolution Theorem. Partial differential equations (PDEs):Second order PDEs, Classification of PDEs, Laplace equation, Fourier's Heat flow equation, Wave equation. Green's Functions: One-dimensional problems, Qualitative idea of Green's functions in 2- and 3-dimentionions.
Classical Mechanics	MSCP1102	2017	Employability - Variational principle, Central force problem, Canonical transformations, Poisson Bracket, Hamiltonian-Jacobi Theory and transition to Quantum mechanics, Small Oscillations.



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Quantum Physics I	MSCP1103	2017	Employability - Angular Momentum, The Hydrogen Atom, Perturbation Theory.
Computational Physics	MSCP1203	2017	Skill - Learning several numerical differentiation and integral methods to solve physical problems. Problems are solved using programming.
Electronics Devices Lab	MSCP1205	2017	Skill - Experiments done on electronic devices like Junction Diodes, Zener Diode, BJT, FET, OPAMP, Rectifiers circuits etc.
Quantum Physics II	MSCP2303	2017	Employability - Variational Methods, WKB Approximation, Time Dependent Perturbation Theory, Scattering Theory.
Introduction to Research	MSRM5101	2017	Skill - Research Process, Data Analysis, Building Mathematical Models, Documentation and Presentation.
Advanced Physical Chemistry I	MSCC1101	2018	Employability-Chemical Dynamics ,Adsorption,Electrochemistry, Enterperneurship-Micelles,
Polymer Chemistry	MSCC1104	2018	Employability-Kinetics of melting, crystal morphology, free volume, distribution of molecular size, stoichiometric imbalance. X-ray diffraction study, Microscopy,Price - Alfrey equation, Flory - Huggins theory, polymer fractionation, Mark - Houwink - Sakurada equation, diffusion coefficient and friction factor,Power Law for pseudo plastic liquids, effect of shearing forces, segmental friction factor, Bueche theory. Skill-Thermal analysis and physical testing,Polymer Processing-



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			I&II, Elastic deformation, shear modulus and compliances, Maxwell model, Voigt model, dynamic viscoelasticity, molecular theory for viscoelasticity - Rouse model, Mechanical properties
Advanced Inorganic Chemistry III	MSCC2301	2018	Skill-Instrumental Method of Analysis, Raman Spectroscopy, Homogeneous and Heterogeneous Catalysis, Displacement and Isomerization reaction. Hydrogenation, Hydroformylation, Wacker (Smidt) Process, Olefin Metathesis, Fischer-Tropsch synthesis, Zeigler-Natta polymerization, Water gas reaction Employability- Mechanism of Substitution Reactions, Electron Transfer Reactions
Seminar	MSCS2401	2018	Skill-To create a research mind in students
Chemistry Laboratory 4	MSCC2403	2018	Skill-Instrumental Methods of Analysis Lab
Biovia project	MSBV0301	2018	Skill -Students will know simulation, design of a drug molecules/materials and it's characteristic analysis by using biovia softawre
MATHEMATICAL MODELLING	MSMA 4701	2017	Skill- Mathematical modelling through ordinary differential equations of first order. Employability - Mathematical modelling through the systems of ordinary differential equations



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DIFFERENTIAL GEOMETRY	MSMA 4705	2017	Employability - Fundamental Triads, Curves, Serret-Frenet Formulae, Curvatures and torsion of a curve at a point.
ADVANCED CALCULUS	MSMA 4802	2017	Skill- Derivatives of functions on $R^n$ , Differentiation of composite functions Employability - Set functions, Transformations and Multiple integrals
FLUID DYNAMICS – I	MSMA 4804	2017	Employability - Fundamental equations of the flow of viscous compressible fluids
ADVANCED NUMERICAL ANALYSIS	MSMA 5202	2017	Employability -Eigen values and Eigen Vectors: Basic power method, Rayleigh Quotient, Shifted power method
STATICS & DYNAMICS	DEHD0101	2017	Skill- To develop in students the ability to analyze dynamics problems in a simple and logical manner through the application of several basic principles.
FORTRAN-95 PROGRAMME	BSMA2002	2017	skill- Learn fundamental concepts of FORTRAN-95 and able to translate scientific and engineering problems into machine understandable.
Microbiology	MSBO1101	2017	Higher studies/Employability- Students learn on preparation and sterilization of media, plating, slanting of media, isolation of bacteria in pure culture
Plant Diversity	MSBO1102	2017	Higher studies/Skill-Pursue higher studies and enhance their skill on culture, maintenance of cyanobacteria, use of cyanobacteria as biofertilizer, algae in the environment,



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
			agriculture, biotechnology and industry
Cell Biology	MSBO1103	2017	Employability-Perform comparative karyotypic analysis, techniques like extraction and separation of DNA by gel electrophoresis, squashing technique for the study of different stages of mitosis and meiosis
Plant Ecology	MSBO1104	2017	Employability-Practical on biodiversity measurement by different indices, calculation and problem solving.
Botany Laboratory-I	MSBO1105	2017	Employability/Skill-Acquire general idea on instruments used in microbiology laboratory
Genetics and Molecular Biology	MSBO1201	2017	Higher studies/Skill- Students can isolate plant DNA & quantification of extracted DNA by spectrophotometric method, plasmid DNA isolation and techniques and DNA sequencing.
Biostatics and Instrumentation	MSBO1203	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy and data analysis using chi square test, student t test etc.
Environmental Pollution and Management	MSBO1204	2017	Employability-Testing water and soil quality, practicals on Phytoremediation and pollution management.
Systematics and Pathology	MSBO2301	2017	Employability-Identification of plants, plant diseases and control measures
Natural Resource Management and Utilization	MSBO2302	2017	Skill/ Employability- Bioresource management.



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Embryology and Anatomy	MSBO2303	2017	Skill-Gain practical knowledge on anatomical identifications of plant parts
Techniques of Tissue Culture	MSBO2304	2017	Entrepreneurship- Practicle on Production of synthetic seeds, Techniques of surface sterilization and plant regeneration via organ culture
Scientific visit	MSBP2301	2017	Skill- Observe and get knowledge on various fields of research in science in different scientific organization.
Plant Biotechnology and Bioinformatics	MSBO2401	2017	Entrepreneurship/Employability- Practicle on Production of synthetic seeds, Techniques of surface sterilization and plant regeneration via organ culture
Eco toxicology & Waste Management	MSBO2402	2017	Employability-Practicle on E-waste management, smart waste management; landfilling-biological processes, leachate control and treatment, site management
Microbial Technology & Physiology	MSBO2403	2017	Employability-Perform fermentation technology, Food processing technology
Project/Dissertation	MSBP2401	2017	Employability- Problem analysis by opting the project work, findings and presentation
Seminar	MSBS2401	2017	Skill-Build up confidence to present their research paper in Conferences/Seminars
Bio-fertilizer	MSLS1001	2017	Skill- Isolation of Rhizobium or Azotobacter from plant root nodules& rhizosphere, Identification of soil cyanobacteria from different soil samples. Preparation of culture



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			media. Crop development using azolla as abiofertiliser.
Tools and Techniques in Biosciences	MSLS1002	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy etc.
Medical Diagnostics	MSLS1005	2017	Skill-Perform experiment on stool ,sputum and semen ,urine, blood analysis and and problem solution.
Biosystematics and Taxonomy	MSZO1102	2017	Employability - . History of Classification Trends in biosystematics: Chemotaxonomy cytotaxonomy and molecular taxonomy, ,Taxonomic procedures: Taxonomic collections, preservation, curretting, process of identification. Taxonomic keys, different types of keys, their merits and demerits. Taxonomic categories. Evaluation of biodiversity indices Evaluation of Shannon. Weiner Index, International code of Zoological Nomenclature (ICZN): , Hardy-Weinberg law of genetic equilibrium, . Trends in Evolution Molecular Evolution Gene evolution, Evolution of gene families. Assessment of molecular variation
Cell & Molecular Biology	MSZO1103	2017	Employability - CellSignaling: Signalling molecules and signal receptors, second messengers, G protein coupled receptors, activation of gene transcription by G protein coupled receptors, Lampbrush chromosome,



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			Polytene chromosome, telocentric chromosome, Interphase chromatin, Euchromatin and Heterochromatin, karyotype and its significance Cell cycle: Molecular models and events. Regulators and checkpoints in cell cycle, DNA synthesis by reverse transcription, DNA Repair: mismatch repair, base excision, nucleotide excision, direct repair, SOS repair, Prokaryotic and eukaryotic translation.
Biochemistry	MSZO1104	2017	Employability - Carbohydrate metabolism: Glycolysis, TCA cycle, pentose-phosphate pathway. Gluconeogenesis, glycogen metabolism, regulation of carbohydrate metabolism, Oxidative phosphorylation, electron transport and ATP synthesis, Enzymes: General properties, nomenclature and classification, extraction and assay Michaelis-Menten kinetics and its significance, Brigg's-Halden modification, determination of Vmax and Km, Mechanism of enzyme action: general acid-base catalysis, covalent catalysis, metal catalysis Mechanism of action of RNase, Lysozyme and Chymotrypsin, Coenzymes and vitamins, Enzyme inhibition: competitive, non-competitive inhibition, determination of Ki, allosteric regulation, covalent modification





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Microbiology	MSZO1202	2017	<p>Skill - General features of Archaea, Structure, Nutrition and Reproduction of Eubacteria, Genetic recombination in bacteria (Transformation, Conjugation and Transduction), General features and pathogenicity of mycoplasma, Rickettsia and Spirochaetes. Plant virus- TMV, structure, transmission, pathogenicity and replication Animal viruses - HIV, structure, transmission, pathogenicity and replication Treatment and prevention by anti-virals and vaccine,, Microbial toxins: types, mode of actions and pathogenicity. Bacterial toxins: Endo and exotoxins, fungal toxins: toxins of Aspergillum, Penicillium, Fusarium and Alternaria Algal toxins: cyanotoxins and dinotoxins.</p> <p>Chemotherapeutic agents: antibiotics and their mode of action; bacterial drugs (Penicillin, fluoroquinolones, tetracycline and aminoglycosides)</p>
Genetics	MSZO1203	2017	<p>Skill - Sex chromosomes, Chromosomal sex determination: XX-XY, XX-XO and ZZ-ZW systems, Compound sex chromosome, Meiotic behaviour of chromosomes: Primary &amp; Secondary non-disjunction, Genic balance theory of sex determination, Sex determination in humans and Drosophila with</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>special reference to SRY and sex lethal genes, Sex determination in plants with special reference to Melandrium, Linkage groups: Complete and incomplete linkage ,Crossing over: Relationship between genetic and cytological crossing over, Relationship between crossing over and chaisma formation, molecular mechanism of crossing over, Mitotic Recombination, Recombination within gene. Structural and numerical alterations in chromosomes: Spontaneous and induced mutations, physical and chemical mutagens, chromosomal aberrations, meiotic behavior of deletion, duplication, inversion and translocation. Euploids and aneuploids-classification, origin, induction, role of polyploidy in evolution and practical significance in crop improvement.</p>
Immunology and Cancer Biology	MSZO1204	2017	<p>Employability - Antigen – Antibody interaction (Antibody affinity, Radial and Double immune diffusion, Radioimmunoassay, ELISA- Indirect, Direct, Sandwich, ELISPOT, Competitive, Western blotting), Major histocompatibility complex and MHC restriction, Antigen Processing and Presentation, Generation of humoral and cell mediated immune response, BCR and TCR, generation of diversity,</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Complement system(Classical, Alternate and lectin pathway), Cytokines- Types and their role in immune regulation, Activation and regulation of B and T lymphocytes, Cell-mediated cytotoxicity and Antibody dependent cell mediated cytotoxicity, Hypersensitivity, Autoimmunity and Transplantation., Role of carcinogens and DNA repair in cancer
Zoology Laboratory-II	MSZO1205	2017	Skill - 1. Study of Museum Specimen 2. Study of anatomical slides 3. Detection of genetically disorder. 4. Estimation of gram +ve & -ve bacteria 5. Method & techniques of Bacterial culture 6. Study of immunological method 7. Study of different Parasitic forms. 8. Identification of parasitic forms 9. Antigen-Antibody Interaction (Haemoagglutination assay) 10. Identification of histological slides of lymphoid tissue 11. Immunization Protocol Demonstration of Thioglycolate induced peritonitis (cell infiltration and Inflammatory exudates) 12. Sessional work (Internal evaluate)



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Physiology & Endocrinology	MSZO2301	2017	<p>Skill - The heart: cardiac cycle &amp; its regulation, pulmonary ventilation, respiratory surface &amp; gas exchange, regulation of respiration, transport of gases, acid base balance.</p> <p>Excretory system: Urine formation, glomerular filtration, tubular function, renal Mechanism of concentrating &amp; diluting urine General organization of central nervous system, Type of neuronal cells, Structure and function of neuron and glia, Chemical messengers, Hormones &amp; their feedback systems, Mechanism of hormone action (fixed membrane-and mobile receptor mechanisms), hormonal signalling, Pineal, Thymus &amp; gastrointestinal hormones, Anatomy, chemistry and biological action of adenohipophysial</p> <p>&amp; neurohipophysial hormones, Thyroid gland: Anatomy, biosynthesis &amp; function of thyroid hormones, Parathyroid gland: Anatomy &amp; function of parathyroid hormone.</p> <p>Endocrine pancreas: Anatomy, Biosynthesis, chemistry &amp; functions of pancreatic hormones, Adrenal gland: Anatomy, biosynthesis, functions of cortical &amp; medullary</p>



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			Hormones, Gonads: Anatomy and biological actions of gonadal hormones.
Animal Biotechnology	MSZO2302	2017	<p>Skill - Animal cell and tissue culture technology: Cell culture laboratory design and equipment, Media and reagents,</p> <p>Different types of cell culture, application, scale up Biotechnology in improvement of livestock: Fish breeding,</p> <p>Androgenesis and Gynogenesis in fish, Polyploidy in fish, Gene manipulation in aquaculture.</p> <p>Reproductive biotechnology: Cryopreservation and Cryoprotection and gamete banking, Assisted reproductive technology, In vitro fertilization and embryo transfer, ICSI, Sperm sexing, Vermi-culture and Vermicomposting for alternative sustainable agriculture. Soil fauna in soil formation &amp; fertility, Organic farming, Fish culture in flow through system and recirculation technology., Medical Biotechnology: Disease diagnostic markers, Gene therapy, Mechanism of gene therapy (antisense, virus mediated, immunotherapy, stem cell therapy), Drug delivery and targeting, Forensic Biotechnology,</p>
Ecotoxicology	MSZO2303	2017	Employability - Productivity, Production and analysis. Recycling



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			<p>and reuse technologies for solid and liquid wastes and their role in environmental conservation. Remote sensing –basic concepts and applications of remote sensing techniques in environmental conservation.Environmental indicators and their role in environmental balance., , Vehicular exhaust pollution causes and remedies, Noise pollution, Toxicity testing principles, hazards, risks and their control methods., Food toxicants and their control methods, Public Health Hazards due to environmental disasters, Pesticides, types, nature and their effects on environment, Important heavy metals and their role in environment, Agrochemical use and misuse, alternatives, Occupational Health Hazards and their Control</p>
Zoology Laboratory-III	MSZO2305	2017	<p>Skill - 1. Study of T.S,V.S,L.S of different mammalian organ 2. Detection of protein ,carbohydrate, lipid 3. Tissue culture 4. Gel Electrophoresis, Blotting 5. DATA interpreting 6. Estimation of toxic in Water Sample 7. Various tools &amp; techniques 8. Estimation of DNA 9. Estimation of RNA 10. Separation of proteins, lipids &amp; nucleic acids from tissues and</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			their quantification 11. Isolation of genomic DNA from animal tissue/blood 12. Agarose gel electrophoresis of DNA 13. SDS PAGE (Demonstration) 14. Microscopy, Microtomy and Histological techniques. 15. Isolation of Mitochondria 9. WBC & RBC counting 16. Estimation of haemoglobin 17. Study of slides of endocrine glands 18. Chromatographic separation of biomolecules (Amino acids /sugars/lipid)
Developmental Biology	MSZO2401	2017	Skill - Primordial germ cells, Spermatogenesis, Oogenesis, Fertilization: Ultrastructure of sperm and ovum, biochemical aspects of fertilization, Cell-cell interaction and cell signalling during morphogenesis in early embryo; Ageing: Mitochondrial control of ageing, insulin pathway control of ageing and possible relation to oxygen radicals, "Ageless" animals and environmental control of ageing, senescence & cell death, Application of developmental biology in medicine and animal husbandry: In vitro fertilization and embryo transfer, embryo sexing, Gene expression and human disease: Inborn errors of nuclear RNA processing, inborn errors of translation, Teratogenesis: Environmental



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			assaults on human development, teratogenic agents like alcohol, retinoic acid etc.
Instrumentation & Biophysics	MSZO2402	2017	Skill - Principle of operation and Instrumentation of Light, Fluorescence and Electron Microscopes Ultraviolet-visible absorption spectroscopy: Principle, Instrumentation and application, Fluorescence spectrophotometry: Principle, Instrumentation and application Radioisotope techniques: Nature of radioactivity, isotopes in biochemistry, measurement of radioactivity (carbon dating, Geiger-Muller counting and liquid scintillation counting). Principles of electrochemical techniques: Electrochemical cells and reactions, potentiometry and voltametry, the pH electrode. Centrifugation techniques: Basic principles of sedimentation, Types of centrifuges, Types of rotors, Methods in preparatory ultracentrifugation (differential and density gradient centrifugation). Chromatographic techniques: Principles of chromatography (Adsorption and Partition chromatography), planar chromatography (Paper and Thin-layer chromatography), Column chromatography (Gas chromatography, Gel exclusion/permeation chromatography, Ion exchange





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>chromatography, Affinity chromatography, HPLC). Electrophoretic techniques: General principles, support media, electrophoresis of proteins (SDS-PAGE, native gels, gradient gels, isoelectric focusing gels and two dimensional gels), electrophoresis of nucleic acids (Agarose, pulse-field and sequencing gels). Blotting techniques (Southern, northern and western blotting). Biophysics: pH meter and measurement of Ph, Paper chromatography of amino acids, mixtures, identification of unknown amino acids and sugars, Gel filtration chromatography (Separation of starch from glucose), Thin layer chromatography of amino acids and sugar, Serum electrophoresis, Determination of absorption coefficient and concentration of unknown solutions by calibration curve using a coloured solution, Absorption spectrum of a coloured solution (KMnO<sub>4</sub>), Drawings using camera lucida</p>
Environment and Pollution Management	MSZO2403	2017	<p>Employability - biomass production, biotechnology for generation of biogas , Classification, formation, survey and land capability, soil structure and profile, soil reaction and buffering, Management and remediation of soil pollution, management and</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			decontamination of saline, acidic, alkaline and mine waste soil, management of water logged, sandy and peat soil, degradation of organic pollutants in soil environment, ex situ and in situ bioremediation of contaminated soil: biopile, bioventing, biosparging and bio slurping., Pollutants in air: Major air pollutants; oxides of nitrogen, sulphur and carbon-sources, effects and environmental reactions, particulate air pollutants; methods of air pollution control, particle settling chamber, inertial separator, cyclone filters, electrostatic precipitators, gaseous pollutant control-scrubber, absorbers, thermal decomposers, biological filters
Environmental Science	FCBS0101	2016	Employability - Environmental Science
Thermal Physics	BSPH1201	2016	Employability - Laws of Thermodynamics, Carnot engine & efficiency. Carnot's Theorem. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Applications of Second Law of thermodynamics, Entropy, Thermodynamic Potentials, Kinetic Theory of Gases, Molecular Collisions, Real Gases. Skill- Thermal Physics Lab



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Elements of Modern Physics	BSPH2402	2017	Employability - Radioactivity, Fission and Fusion, Lasers. Skill - Elements of Modern Physics Lab
Experimental Techniques	BSPH3503	2017	Employability - Experiments are done on, Thermostat, ultrasonic transducer, Calibrate Semiconductor type temperature sensor (AD590, LM35, or LM75), Create vacuum in a small chamber using a mechanical (rotary) pump and measure the chamber pressure using a pressure gauge, design and study the Sample and Hold Circuit, Design and analyze the Clippers and Clampers circuits using junction diode etc enables them to become Lab Technician. Enterprenuership - Transducers & industrial instrumentation, Digital Multimeter, Sensors Skill - Experimental Techniques Lab
Embedded systems- Introduction to Microcontroller	BSPH3504	2017	Employability - Embedded system, microprocessors, 8051 microcontroller, 8051 I/O port programming, Interfacing 8051 microcontroller to peripherals, Embedded system design and development. Enterprenuership - 8051 I/O port programming, Interfacing 8051 microcontroller to peripherals, Embedded system design and development. Skill - Embedded System: Introduction to Microcontrollers Lab.



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Advanced Mathematical Physics-II	BSPH3507	2017	Employability - Enterprenuership - Skill -
Communication System	BSPH3604	2017	Employability - Communication and Navigation systems, Satellite Communication, Mobile Telephony System, mobile communication network, Enterprenuership - Mobile Telephony System, mobile communication network, Skill - Communication Electronics Lab
Physics Workshop Skills	BSPH2001	2017	Skill - Experiments are done to learn different measurement methods, different types of welding, drilling, cutting metal sheets, milling, drilling etc. Learn to work with several electrical circuits and instruments.
Electrical circuits and Network Skills	BSPH2003	2017	Skill - Experiments done to understand and analyze circuits and networks, to design circuits and networks involving various electrical instruments.
Basic Instrumentation Skills	BSPH2004	2017	Skill - Designing and implementing systems utilizing analog / digital control devices and learn to take measurements using digital and analog instruments. Experiments are done to larn about CRO, Q meter, LCR circuit and Oscilloscope.
Applied Optics	BSPH2005	2017	Skill - Learning about different light sources, detectors, holography and photonics.
Inorganic chemistry-I	BSCH1101	2018	Skill- Wave mechanics and Inorganic Chemistry-I Lab , enterperneurship-Atomic



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Structure-2, Periodicity of Elements-1&2, Employability-Chemical Bonding-1&2, Oxidation-Reduction
Physical Chemistry-I	BSCH1102	2018	Employability-Gaseous state 1 & 2, entrepreneurship-Liquid state:, gaseous state-3, Solid state, Ionic Equilibria-1&2, Skill-bravais lattices, Qualitative treatment of acid - base, Physical Chemistry Practice
Physical Chemistry-II	BSCH1202	2018	Employability-Chemical Thermodynamics, Second Law of Thermodynamics, Third Law of thermodynamics, Systems of Variable Composition, Dilute solutions . Entrepreneurship-Chemical Equilibrium, Thermochemistry. Skill-Physical Chemistry-II Practice
Inorganic chemistry-II	BSCH2301	2018	Skill-General Principles of Metallurgy-1, -Inorganic Chemistry Practice. Employability-Acids and Bases, Chemistry of s and p Block Elements-1, Boric acid and borates, boron nitrides, borohydrides (diborane) carboranes and graphitic compounds, silanes, Chemistry of s and p Block Elements-3, preparation and properties of Clathrates, Inorganic Polymers .
Inorganic Chemistry-III	BSCH2401	2018	Employability-Coordination Chemistry-1&2, Transition Elements, Lanthanoids and Actinoids. Skill-separation of lanthanides, Bioinorganic Chemistry-1,2 and Inorganic Chemistry Practice



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Physical Chemistry-IV	BSCH2403	2018	Employability-Electrical & Magnetic Properties of Atoms and Molecules and Application . Skill-Electrochemistry :II, Physical Chemistry Practice. Enterpreneurship- Electrochemistry :I
Industrial Chemicals and Environment	BSCH3503	2018	Employability-Industrial Gases and Inorganic Chemicals, Inorganic Chemicals, Energy & Environment, Biocatalysis. Skill- Environment and its segments, Water Pollution, Industrial effluents from the following industries and their treatment, Industrial Chemicals & Environment practice.
Research Methodology for Chemistry	BSCH3603	2018	Skill-Methods of Scientific Research and Writing Scientific Papers-II, Chemical Safety and Ethical Handling of Chemicals, Safe storage and use of hazardous chemicals, Recovery recycling and reuse of laboratory chemicals, Data Analysis-I & II.
Instrumental Methods of Chemical Analysis	BSCH3604	2018	Skill-Introduction to spectroscopic methods of analysis, Molecular spectroscopy, Separation techniques, Instrumental Methods of Chemical Analysis practice. Employability-Molecular spectroscopy instrumentation and application, Atomic spectroscopy, Spectrophotometer s principle and application,
Ordinary Differential Equations	BSMA1202	2017	Skill –To understand solving Free Undamped Motion of a Spring System using Python and other skills



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			Employability- Be competent in solving linear/non-linear 1st & higher order ODEs using analytical methods to obtain their exact solutions.
Numerical Analysis	BSMA2401	2017	Skill – Numerical Solution of different linear and non-linear equations using software. Employability - Perform error analysis to select an appropriate numerical model and to estimate errors in numerical solution of a given problem.
Discrete Mathematical Structure	BSMA3602	2017	Skill –To work with different types of Sets, Lattices and Boolean Algebra using Python Employability - To learn a particular set of mathematical facts and to apply their applications in many subjects of Computer Science and Engineering such as Cryptography, Theory of Computation & Data Networking.
Analysis-II	BSMA2301	2017	Skill - To describe various theorems about Riemann sums and Riemann integrals and emphasize the proofs' development. Employability - Apply change of variables in double integrals and triple integrals
Modern Algebra	BSMA2302	2017	Skill - To introduce students to the language and precision of modern algebra Employability - Work effectively with others to discuss homework problems put on the board.



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Partial Differential Equations and System of Ordinary Differential Equations	BSMA2303	2017	Skill - Introduce students to how to solve linear Partial Differential Equations with different methods. Employability - Identify and solve Laplace, Diffusion and Wave equations.
Tools and Techniques in Bioscience	BSLS2005	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy etc.
Food processing	BSLS2007	2017	Skill- Analysis of nutritional value, isolation and purification of essential oil and pigments.
Plant tissue culture	BSLS2009	2017	Skill- Isolation of Explants; Establishment and Maintenance of Callus and media preparation and culture.
Nursery and gardening	BSLS2010	2017	Skill- Vegetative propagation: air-layering, cutting and selection of cutting, Gardening: definition, objectives and scope - different types of gardening - landscape and home gardening
Medicinal Botany	DEHB0401	2017	Skill- Perform practicals on medicinal plants identification, isolation of phytochemicals.
Traditional Botany and Phytochemistry	DEHB0402	2017	Skill- Students can easily identify and classify plants, prepared and deposited herbarium, they also practiced digital documentation of herbarium.
Standardization and Quality Control of ASU Drugs	DEHB0404	2017	Skill- Vary the quality and nutritional values of plant based nutrients and herbal medicine.
Basic Microbial Techniques	DEFM0402	2017	Skill- Handling of microscope, identification of bacteria and culture





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Quality Assurance in Food Preservation Methods	DEFM0404	2017	Skill- drying, refrigeration, and fermentation. Modern methods include canning, pasteurization, freezing, irradiation, and the addition of chemicals.
Principles of Ecology	BSZO1102	2017	<p>Employability- Population:            Unitary and Modular populations            Unique and group attributes of population: Density, nasality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. Exponential and logistic growth, equation and patterns, r and K strategies            Ecosystem: Types of ecosystems with one example in detail, Food chain: Detritus and Grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies, • Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided.</p> <ul style="list-style-type: none"> <li>• Determination of population density in a natural/hypothetical community by quadrate method and calculation of Shannon-Weiner diversity index for the same community</li> <li>• Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, turbidity/penetration of light, determination of pH, and Dissolved Oxygen content</li> </ul>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<ul style="list-style-type: none"> <li>• (Winkler’s method), Chemical Oxygen Demand and free CO<sub>2</sub></li> </ul>
Cell Biology	BSZO1202	2017	<p>Employability - Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleolus, Chromatin: Euchromatin and Hetrochromatin and packaging (nucleosome), Mitosis, Meiosis, Cell cycle and its regulatio, GPCR and Role of second messenger (cAMP),</p> <ul style="list-style-type: none"> <li>• Preparation of permanent slide to show the presence of Barr body in human female blood cells/cheek cells.</li> <li>• Preparation of permanent slide to demonstrate               <ol style="list-style-type: none"> <li>i) DNA by Feulgen reaction</li> <li>ii) DNA and RNA by MGP</li> <li>iii) Mucopolysaccharides by PAS reaction</li> <li>iv) Proteins by Mercurobromophenol blue/Fast Green</li> </ol> </li> </ul>
Diversity of Chordates	BSZO2301	2017	<p>Employability - General characteristics and classification of cyclostomes up to class, General characteristics of Chondrichthyes and Osteichthyes, classification up to order Migration, Osmoregulation and Parental care in fishes, General characteristics and classification up to order; Parental care in Amphibians, General characteristics and classification up to order; Affinities of Sphenodon; Poison apparatus and Biting mechanism in snakes,</p>



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			General characteristics and classification up to order Archaeopteryx—a connecting link; Principles and aerodynamics of flight, Flight adaptations and Migration in birds, General characters and classification up to order
Fundamentals Of Biochemistry	BSZO2303	2017	Employability - Enzymes: Nomenclature and classification; Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation, Concept of $K_m$ and $V_{max}$ , Lineweaver-Burk plot; Multi-substrate reactions, Enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme action, <ul style="list-style-type: none"> <li>• Qualitative tests of functional groups in carbohydrates,</li> <li>• Qualitative tests of functional groups in protein</li> <li>• Qualitative tests of functional groups in lipids.</li> <li>• Separation of amino acid using Paper. Chromatography .</li> <li>• Action of salivary amylase under optimum conditions.</li> <li>• Effect of different pH on salivary amylase activity.</li> <li>• Effect of different Temperature on salivary amylase activity.</li> <li>• Effect of inhibitor on salivary amylase activity</li> </ul>



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Comparative Anatomy of Vertebrates	BSZO2401	2017	Employability - • Study of placoid, cycloid and ctenoid scales through permanent slides/photographs • Study of disarticulated skeleton of Amphibia/Reptilia/Aves/Mammal • Study of Mammalian skulls (Rabbit) • Study of Mammalian skulls (Rat)
Biochemistry of Metabolic Processes	BSZO2403	2017	Employability - Sequence of reactions and regulation of glycolysis, Citric acid cycle, Phosphate pentose pathway, Gluconeogenesis, Glycogenolysis and Glycogenesis, • To estimate the protein content of supplied tissue by colorimeter method • To estimate the glycogen content of supplied tissue by colorimeter method • To extract & colorimetric estimation of nucleic acid. • To demonstrate the effect of temperature on enzyme activity.
Principles of Genetics	BSZO3502	2017	Employability - Types of chromosomal aberrations (Classification, figures and with one suitable example of each), Molecular basis of mutations in relation to UV light and chemical mutagens; Detection of mutations: CLB method, attached X method, Sex Determination, Chromosomal mechanisms of sex determination in Drosophila and Man Extra - chromosomal Inheritance. Criteria for extra-chromosomal inheritance,



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			Antibiotic resistance in Chlamydomonas, Mitochondrial mutations in Saccharomyces, Infective heredity in Paramecium and Maternal effects., Transposons in bacteria, Ac-Ds elements in maize and P elements In Drosophila, Transposons in humans,
Developmental Biology	BSZO3601	2017	Employability - Regeneration: Modes of regeneration, epimorphosis, morphallaxis and compensatory regeneration (with one example each)., Ageing: Concepts and Theories, Implications of Developmental Biology Teratogenesis: Teratogenic agents and their effects on embryonic, development; in vitro fertilization, Stem cell (ESC), Amniocentesis, • Study of whole mounts and sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage,tadpole (external and internal gill stages) • Study of whole mounts of developmental stages of chick through permanent slides: • Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96hours of incubation (Hamilton and Hamburger stages)
Evolutionary Biology	BSZO3602	2017	Employability - Hardy-Weinberg Law (statement and derivation of equation, application of law to



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			<p>human Population); Evolutionary forces upsetting H-Wequilibrium; Natural selection (concept of fitness, selection coefficient, derivation of oneunit of selection for a dominant allele, genetic load, mechanism of working, types of selection, density-dependent selection, heterozygous superiority, kin selection, adaptive resemblances, sexual selection, Phylogenetic trees, Multiple sequence alignment, construction of phylogenetic trees, interpretation of trees</p>
Animal Biotechnology	BSZO3503	2017	<p>Entrepreneurship - Molecular Techniques in Gene manipulation, Cloning vectors: Plasmids, Cosmids, Phagemids, Lambda Bacteriophage, M13, BAC, YAC, MAC and Expression vectors (characteristics)., Production of cloned and transgenic animals: Nuclear Transplantation, Retroviral Method, DNA microinjection, Applications of transgenic animals: Production of pharmaceuticals, production of donor organs, knockout mice. Production of transgenic plants: Agrobacterium mediated transformation. Applications of transgenic plants: insect and herbicide resistant plants Animal cell culture, Expressing cloned genes in mammalian cells, Molecular diagnosis of genetic diseases (Cystic fibrosis, Sickle cell</p>



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			anemia) Recombinant DNA in medicines: Recombinant insulin and human growth hormone, Gene therapy 8. To study following techniques through photographs a. Southern Blotting b. Northern Blotting c. Western Blotting d. DNA Sequencing (Sanger's Method) e. PCR f. DNA fingerprinting Small project report
Fish and Fisheries	BSZO3504	2017	Entrepreneurship- Sustainable Aquaculture; Extensive, semi-intensive and intensive culture of fish; Pen and cage culture; Polyculture; Composite fish culture; Brood stock management; Induced breeding of fish; Management of finfish hatcheries; Preparation and maintenance of fish aquarium; Preparation of compound diets for fish, Role of water quality in aquaculture; Fish diseases: Bacterial, viral and parasitic; Preservation and processing of harvested fish, Fishery by-products Fish in research: Transgenic fish, Zebra fish as a model organism in research.
Immunology	BSZO3603	2017	Employability - Immunoglobulins : Structure and functions of different classes of immunoglobulins, Antigen-antibody interactions,



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			Immunoassays (ELISA and RIA), Structure and functions of MHC molecules. Endogenous and exogenous pathways of antigen processing and presentation Cytokines: Properties and functions of cytokines, Therapeutics Cytokines Complement System: Components and pathways of complement activation., 5. ABO blood group determination., 6. Cell counting and viability test from splenocytes of farm bred animals/celllines., 7. Demonstration of a. ELISA , b. Immunoelectrophoresis
Parasitology	BSZO3604	2017	Employability- Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity,Diagnosis, Prophylaxis and Treatment of Entamoeba histolytica, Giardia intestinalis, Trypanosoma gambiense, Leishmania donovani, Plasmodium vivax Study of structure, life cycle and importance of Meloidogyne (root knot nematode), Pratylenus (lesionnematode, All Experiments present in Syllabus
Skill in Apiculture (SEC-1)	BSLS2002	2017	Entrepreneurship-Cultivation of bees and honey harvesting techniques and entrepreneurship
Herbal Technology	BSLS2003	2017	Skill - Collection of wild herbs and their herbarium preparation Entrepreneurship - Extraction of an alkaloid





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Techniques in Medical Diagnostics	BSLS2004	2017	Employability- Study of D.L.C (Differential Leucocyte Count) using Leishman's stain., 3. Platelet count using haemocytometer, Determination of ABO Blood group, 7. Recording of blood pressure using a sphygmomanometer.
Fundamentals of Horticulture	ASHO1101	2018	Understanding the fundamentals of various aspects of horticulture crops :Employability
Fundamentals of Plant Pathology	ASPP1101	2018	Understanding the fundamentals of plant disease causing organisms and their management: Employability
NSS/NCC/Physical Education & Yoga Practices	ASPE1101	2018	Understanding and application of different yoga asanas and pranayama techniques for physical and mental well-being :Skill & Employability
Irrigation water management	ASAG1206	2018	Understands the practices of water management and its application in irrigation management : skill dev.& Employability
Production Technology for Vegetables and Spices	ASHO1203	2018	Understanding the different methods i.e. seed treatment and vegetative propagation for the production of vegetable crops: entrepreneurship & skill
Fundamentals of Entomology –I (Insect Morphology and Taxonomy)	ASEN1201	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Crop Production Technology – I (Cereals, millets and pulses) Kharif crops	ASAG2103	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability



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Fundamentals of Entomology- II (Insect ecology and concepts of IPM)	ASEN2102	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Weed management	ASAG2105	2018	Identification of Weeds and its management in different crops : Employability
Production technology of fruits and plantation crops	ASHO2102	2018	Understanding the different methods i.e. grafting, budding and layering for production of fruit and plantation crops: entrepreneurship & skill
Agricultural Informatics	ASAI2101	2018	To disseminate, capture, access information to achieve sustainable use of agricultural resources : employment.
Communication skills and personality development	ASEE2104	2018	Develop knowledge of English communication through presentation, extempore and GD: Skill & Employability
Crop Production Technology –II (Oil seeds, fiber, sugar, tobacco, and fodder Crops) Rabi crops	ASAG2204	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Production Technology for Ornamental Crops, MAP and Landscaping	ASHO2204	2018	To gain expertise in production of ornamental crops and landscaping : , Employability & skill development
Rain-fed Agriculture & Watershed Management	ASAG2211	2018	Understanding the methods of rainwater harvesting and groundwater recharging :Employability
Principles of seed technology	ASPG2202	2018	Gaining knowledge in seed storage, certification and marketing ways: employment
Diseases of Field and Horticultural Crops and their Management –I	ASPP2202	2018	Identification and management of diseases of field crops :employability



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Food safety and Standards	ASFE2201	2018	Understanding the different food safety principles i.e. pasturization, canning etc: Skill
Principles and practices of weed management	MAAG 1102*	2017	Skill development: Identification of different weeds and their control which in turn would further provide a scope to students in chemical industries
Principles and practices of water management	MAAG 1103*	2017	Skill development: The students can learn about judicious water management using different efficient technologies which would further lay emphasis on job opportunities as well as they can make themselves self sufficient by serving as entrepreneurs to serve the farming community
Agronomy of major cereals and pulses	MAAG 1204*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Agronomy of oilseed, fibre and sugar crops	MAAG 1205*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Cropping systems and sustainable agriculture	MAAG 1206*	2017	Skill development: The students acquire knowledge about different cropping systems under various climatic situations and they can make themselves self employed as successful entrepreneurs
Dry land farming and watershed management	MAAG2107*	2017	Skill development: On the basis of climatic situations, students will learn raising of different climate resilient crops



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Master's seminar	MAAG1291 *	2017	To exploit newly evolved research techniques for enhancing the traits in agronomically important species and learn the tips for giving good presentations.
Soil fertility and fertilizer use	MASA1101	2017	Skill development: Students gain knowledge on the application of fertilizers and soil fertility status
Management of problem soils and waters	MASA1202	2017	Skill development: students study different methods for the reclamation of problematic soils as well as their management
Statistical methods for applied sciences	MAST 2102	2017	Skill: To exploit various statistical tools as well as techniques to compile raw data for representing the results
Experimental designs	MAST 1201	2017	The students can analyze the data of field experiments and interpret the same in the result.
Library and information services	MALI1101	2017	Skill development: To gain knowledge on the utilization of library resources for the research finding of experiments.
Technical writing and communication Skills	MACS1101	2017	Skill development: learn the style and skill of writing technical papers
Intellectual property and its management in agriculture	MAIP 1201	2017	Employability and Skill development: students get an overall idea of IPR and their applications towards the protection of property rights
Basic concepts in laboratory techniques	MALT1201	2017	Skill: students do learn the usage of different laboratory equipments along with the standard operating procedures for handling them
Agricultural research, research ethics and rural development programmes	MAAR2101	2017	Employability and Skill development: Acquire knowledge



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			for research ethics and government policies.
Production technology of cool season vegetable crops	MAVS 1101*	2017	Skill: The students can train others as well as the knowledge can be implemented for carrying out research in collaboration with various government and non-government organizations.
Production technology of warm season vegetable crops	MAVS 1102*	2017	Skill: The students can train others as well as the knowledge can be implemented for carrying out research in collaboration with various government and non-government organizations.
Breeding of vegetable crops	MAVS 1103*	2017	Research: can carry out research to generate new varieties further leading to entrepreneurship
Production technology of under exploited vegetable crops	MAVS 1205*	2017	Entrepreneurship and research to conserve the fading races thereby promoting the importance of these races to the farming community for nutritional security
Seed production technology of vegetable crops	MAVS 2106*	2017	Entrepreneurship, skill and research: Development of quality seeds and planting materials
Fundamentals of processing of vegetables	MAVS 2108*	2017	Entrepreneurship and skill: To utilize the knowledge in various processing units
Post harvest technology for fruit crops	MAFS1205	2017	Entrepreneurship and skill
Principles of plant breeding	MAGP1103	2017	Research: can carry out research to generate new varieties which further lead to entrepreneurship
Principles and practices of water management	MAAG1103	2017	Skill and research: To learn the judicious utilization of water during various developmental stages of plants



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Principles of cytogenetic	MAGP 1102*	2017	Practical skills and concepts leading to entrepreneurship and research to generate high yielding and disease resistant varieties.
Techniques in molecular biology I	MAMB1205	2017	Skill: Students learn the techniques of molecular biology and further carry out research and also serve as entrepreneurs
Genomics and proteomics	MAMB 2110	2017	Research and entrepreneurship: The tools and techniques of both the sciences help the students to carry out research and further serve as entrepreneurs
Development perspectives of extension education	MAEX1101*	2017	Employability: Some concepts in this course and the rural development programs can help in getting employment
Development communication and information management	MAEX1102*	2017	Skill and research: students can learn the skills and involve in research activities
Diffusion and adoption of innovations	MAEX1103*	2017	Research: Students can carry out research on adoption and diffusion of innovations
Gender sensitization for development	MAEX1105*	2017	Research and employability: provide them an opportunity to work in sectors relating to women empowerment
Research methods in behavioral sciences	MAEX 1206*	2017	Students get an opportunity to learn the basic concepts of research
e-Extension	MAEX 1207*	2017	Skill: Students can learn the usage of various tools related to ICT activities and further carry out research
Market led extension management	MAEX 1208*	2017	Entrepreneurship: students can learn the marketing and entrepreneurial skills
Human Resource Development	MAEX 2109*	2017	Skill: Students can learn the skills of studying human behaviour



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			leading the management of human resources
Agricultural Marketing & Price Analysis	MAAE 1201	2017	Entrepreneurship: students can learn the marketing skills and serve as entrepreneurs
Agricultural Finance and Project Management	MAAE 2102	2017	Entrepreneurship and research: Students can learn the basic concepts of agricultural finance and thereby manage projects
Statistical methods for social sciences	MAST 1203	2017	Skill: Students can learn the usage of different statistical tools that in turn would provide them a scope for employment
Non-Parametrics	MAST 2104	2017	Skill: Students can learn the usage of different non parametrics such as descriptive statistics and statistical inferences which would help them for carrying out research activities
Participatory methods for technology development and transfer	MAEX1104	2017	Skill and employability: students can learn the basic concepts of participatory techniques and thereby help in technology transfer from lab to land
Entrepreneurship Development and Management in Extension	MAEX2110	2017	Entrepreneurship: Students do learn the entrepreneurial skills which ultimately provides them with a scope to serve as entrepreneurs
Taxonomy of Shellfish	FSRM1102	2017	Gain knowledge about the morphometric and meristic character of shellfish for identification. Skill development
Fish Food Organisms	FSAQ2109	2017	Learn and practice the nutritional requirements of fish/shellfish larvae and knowledge on mass culture and enrichment of live food organisms. Employability and Skill development



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Aquatic Ecology, Biodiversity and Disaster Management	FSEM2106	2017	Study the coastal resources, integrated coastal zone management strategies to conserve it in case of any disaster.
Freezing Technology	FSPT2103	2017	Understanding the different types of low temperature preservation, handling, storage of different type of fish and fishery products to minimize the spoilage along with post harvest loss. Employability and Skill development
Genetics and Breeding	FSAQ2111	2017	Gain knowledge on genetic basis of inheritance and breeding plans for commercially important fishes. Employability, Entrepreneurship and Skill development
Fish Immunology	FSHM2106	2017	Study the types of immunity, antigen-antibody interactions and learn the Serological methods in disease diagnosis. Employability and Skill development
Fisheries Economics	FSEE2102	2017	Learning the interface between economics and effective management decisions for fisheries business firm. Employability and Skill development
Coastal Aquaculture and Mariculture	FSAQ2204	2017	To gain knowledge in establishing and managing different fish/shellfish farming systems in coastal waters. Employability and skill development
Fish Nutrition and Feed Technology	FSAQ2208	2017	Practical knowledge of feed formulation and different feed processing techniques and prepare feed based on the nutritional requirements of





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			fish/shell fish. Employability and skill development
Fish Packaging Technology	FSPT2205	2017	Learn the different types of packaging, importance of packaging in fish processing, functions, objectives and requirements. Skill development
Fish and Shellfish Pathology	FSHM2201	2017	Study fish and shellfish pathogens, their control measures and treatments. Employability and Skill development.
Fishing Craft Technology	FSFE2203	2017	Study the operation of various types of traditional and mechanised fishing craft, design and modification. Skill development
Fisheries Extension Education	FSEE2207	2017	Acquire skills required to practice various fisheries extension approaches, the transfer of modern and scientific findings of lab to the farmers land.
Shellfish Hatchery Management	FSAQ2206	2017	Practical skills of seed production and hatchery management of commercially important crustaceans and molluscs and can setup his/her own hatchery. Employability, Entrepreneurship and Skill development.
Communication Skills and Personality Development	FSEE2208	2017	Students will improve interpersonal skills, active listening and responding skills, communication into everyday practice, teamwork and group discussions skills. Employability and Skill development.
Introduction to Forensics, Psychology, Law and Statistics	MSFS1101	2017	Skill : Student will gain knowledge of Laws, Assessment of Deception and Statistical analysis.



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Instrumental Techniques	MSFS1102	2017	Skill : Student learn working principle and instrumentation of instruments such as UV, IR, TLC etc.
Crime Scene Management and Forensic Physics	MSFS1103	2017	Skill & Employability : Skill to reconstruct crime scene. Student process the simulated crime scene. Student gains knowledge about examination of various evidences such as soil, glass, paint, foot print and lip prints.
Finger prints and Questioned Documents	MSFS1104	2017	Skill, Employability & Entrepreneurship, : Student learn about latent fingerprints and lift them for comparison & identification purpose.Gains knowledge about various Aspects of AFIS. Student also detects Signature, hand writing & document forgery, examines counterfeit currency, passport and seal impressions. Gains knowledge about instrumental techniques like ESDA, VSC, Stereo Microscope.
Instrumental Techniques Laboratory	MSFS1105	2017	Skill & Employability: Student perform experiments on UV absorption of drugs/dyes, TLC, IR spectroscopy of paints/drugs/dyes/organic compounds
Crime Scene Management and Forensic Physics Laboratory	MSFS1106	2017	Skill & Employability : Student perform density gradient analysis of soil samples, physical matching of broken glass bangles and different objects, reconstruction of mock crime scene
Finger prints and Questioned Documents Laboratory	MSFS1107	2017	Skill & Employability: Student examines and identify signature



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			and handwriting forgeries, alterations in documents, examination of intersceting strokes, comparison of fingerprints and development of latent fingerprints
Quality Management, Narcotic Drugs, Explosives, and Forensic Chemistry	MSFS1201	2017	Skill : Student learn about nature, types, collection & packaging of evidences like NDPS drugs and controlled substanes , low explosives, Fire debris, Petroleum Products, Beverages, Bribe Trap Cases, Adultrated food, Fibers.
Forensic Biology and Forensic Medicine	MSFS1202	2017	Skill : Student gains knowledge about basics of Human Anatomy, Physiology & Forensic Biology. Student learn about examination of skeletal remains to determine age, Sex & race Gains knowledge about medicolegal investigation such as cause of death, time since death etc.
Forensic Serology and DNA Profiling	MSFS1203	2017	Skill & Employability : Students learn about different ways to detect the presence of blood, semen, saliva and other body fluids , Performs DNA extraction, gains knowledge about basic methodologies used in forensic DNA analysis
Forensic Toxicology and Pharmacology	MSFS1204	2017	Skill & Employability, : Student learn about techniques used to isolate and Extract poisons\ Drugs from samples and determination of various poisons. Also gains knowledge about interpretation of toxicological findings and preparation of reports.



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Forensic Ballistics and Computer Forensics	MSFS1205	2017	Skill & Employability : Student gains knowledge about various aspects of ballistics, characteristics of ammunitions and Computer Forensics.
Quality Management, Narcotic Drugs, Explosives, and Forensic Chemistry Laboratory	MSFS1206	2017	Skill : Student learn and perform examination of NDPS drugs and controlled substanes , low explosives, Fire debris, Petroluem Products, Beverages, Bribe Trap Cases, Adultrated food, Fibers.
Forensic Biology and Forensic Medicine Laboratory	MSFS1207	2017	Skill : Student gains knowledge about basics of Human Anatomy, Physiology & Forensic Biology. Student performs examination of skeletal remains to determine age, Sex & race Gains knowledge about medicolegal investigation such as cause of death, time since death etc.
Forensic Serology and DNA Profiling Laboratory	MSFS1208	2017	Skill & Employability : Students perform experiments to detect the presence of blood, semen, saliva and other body fluids , Performs DNA extraction,
Forensic Toxicology and Pharmacology Laboratory	MSFS1209	2017	Skill & Employability, : Student isolate and Extract poisons\ Drugs from samples and detrmnes the presence of various poisons. Also gains knowledge about interpretation of toxicological finding and preparation of reports.
Forensic Ballistics and Computer Forensics Laboratory	MSFS1210	2017	Skill & Employability : Student also perform instrumental analaysis of GSR & examines bullets and cartridge cases to determine the source of origin.



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Pharmacology and Pharmaceutical Drug Analysis	MSFS2101	2017	Employability : Students learn about basic principles of pharmacology, pharmacokinetics & qualitative and quantitative analysis of Pharmaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology	MSFS2102	2017	Skill & Employability, : Students gains basic knowledge about disposition and translocation of toxicants, analytical toxicology, toxic agents such as pesticides, metals etc and their effects & applications of toxicology.
Modern and Applied Analytical Forensic Chemistry	MSFS2103	2017	Skill & Employability : Student learns about basic concepts of forensic nuclear chemistry, gains knowledge about drug chemistry, petroleum chemistry and fire chemistry. learns about analysis of lipids and fats of different oils and analysis of dairy products
Pharmacology and Pharmaceutical Drug Analysis Laboratory	MSFS2104	2017	Skill & Employability : Students do qualitative and quantitative analysis of Pharmaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology Laboratory	MSFS2105	2017	Skill & Employability, : Students do analysis of various poison such as metallic poison, pesticides, plant poisons etc. and gains knowledge about interpretation of toxicological finding and preparation of reports.
Modern and Applied Analytical Forensic Chemistry Laboratory	MSFS2106	2017	Skill & Employability : Student performs analysis of Various Cases in Forensic Chemistry, Validation of new methods & Accreditation in FSL's, Analysis of



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			NDPS, Explosives, Fire, Petroleum Products, Beverages, Bribe Trap Cases, Adultrated food, Fibers & Exmination of Forensic Chemicals.
Assignment	MSFS2107	2017	Skill : Student study various cases where forensic science played significant role in delivery of justice and write reports.
Seminar	MSFS2108	2017	Skill : Student takes up cases and topics relevant to their specialization subjects and delivers the same.
Advances in Physical Techniques	MSFS2121	2017	Employability : Student gains knowledge about thermal analysis and different spectroscopy techniques, microscopy techniques and forensic nanotechnology and forensic engineering
Concepts of Conventional and Modern Ballistics	MSFS2122	2017	Employability : student gains knowldege about operational features of firearms, ammunition, external ballistics, GSR analysis and procedures for test firing & other instruemntal techniques used for ballistics evidence analysis.
Audio Recognition and Video Analysis	MSFS2123	2017	Employability : Student gains knowledge about basic concepts of voice recognition, handling of audio evidences, processing of speech signals, Gold wave analysis & video analysis
Advances in Physical Techniques Laboratory	MSFS2124	2017	Skill & Employability : Students perform examination of evidences by EDXRF, measures RI of physical evidences.



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Concepts of Conventional and Modern Ballistics Laboratory	MSFS2125	2017	Skill & Employability : Students perform examination of barrel wash, analysis of GSR
Audio Recognition and Video Analysis Laboratory	MSFS2126	2017	Skill & employability : Students record, edit & process audi files using goldwave software, speech acquisition and analysis of speech samples using CSL-4500 software, Video analysis and detection of tampered video files using videofocus
Analytical Techniques	MSCM1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership
Basic Microbiology Lab	MSCM1105	2016	Techniques for staining microorganisms, isolating and culturing microorganisms: Skill and Employability and Enterpreunership
Business Communication	FCHU0203	2016	Enhancement of basic language skills, i.e., listening, speaking, reading and writing: Skill dev.
Systemic Bacteriology	MSCM1201	2016	Understanding the Morphological identification, pathogenesis, laboratory diagnosis and epidemiology of clinically significant bacteria: Skill dev and Employability
Molecular Biology & Clinical Biochemistry	MSCM1202	2016	Understanding the central dogma of life, Metabolic disorders and diagnostic enzymology, Biochemical tests for organ function: Employability
Applied Microbiology	MSCM1204	2016	Microscopic analysis of specimen collected: Skill dev. & Enterpreunership



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Bacteriology, Parasitology & Mycology Lab	MSCM1205	2016	Pathological investigations of urine, stool and other biological specimen; Culture for Pathogenic Fungi : Skill dev. & Employability & Enterpreunership
Project	MSCM2401	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	MSCM2402	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
Medical Laboratory Technology	MSMT1101	2016	Clinical specimen collection, storage, disposal; record maintenance; Quality control: Enterpreunership
Hematology	MSMT1103	2016	Understanding of hematology laboratory; Hematological disorders: Enterpreunership
Medical Instrumentation and Technique	MSMT1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership
Hematology Lab	MSMT1105	2016	Performing various hematological tests: Skill and Employability and Enterpreunership
Molecular Biology & Clinical Biochemistry	MSMT1202	2016	Understanding the central dogma of life, Metabolic disorders and diagnostic enzymology, Biochemical tests for organ function: Employability
Clinical pathology	MSMT1203	2016	Performing pathological investigations on human specimen: Skill dev. & Enterpreunership
Blood Banking	MSMT1205	2016	Blood collection and transfusion techniques and possible errors





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			associated with it: Skill dev. & Enterpreunership
Clinical pathology & Microbiology Lab	MSMT1204	2016	Collection of blood, stool, body fluids and study their chemical and morphological examination: Skill dev. & Enterpreunership culturing and identification of pathogenic microorganims: Skill dev. & Employability & Enterpreunership
Clinical Hematology	MSMT2302	2017	Quality assurance required in hematology; Examination of bone marrow: Skill dev and Enterpreunership
Immunology, Biochemistry & Histopathology Lab	MSMT2306	2017	Performing immunological/ serological tests and their interpretation: Skill dev and Employability. Assay on blood serum for biochemical test: Skill dev and Employability. Performing histopathological analysis and their interpretation: Skill dev and Enterpreunership.
Project	MSMT2401	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	MSMT2402	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
Basic Haematology	BSCM1103	2017	Carry out hematological investigations: Skill dev. & Employability & Enterpreunership
Instrumentation & Techniques	BSCM1104	2017	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Human Anatomy, Physiology & Haematology Practical	BSCM1105	2017	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability & Entrepreneurship
Clinical pathology & Diagnosis	BSCM1203	2017	Pathological investigations of urine, stool and other biological specimen: Skill dev. & Entrepreneurship
Clinical Pathology, Biochemisrty & Microbiology Practical	BSCM1204	2017	Performing pathological investigations on human specimen: Skill dev. & Entrepreneurship; Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship; principle of spectrophotometry, colometry, photometry and Clinical biochemistry tests: Skill dev and Employability and Enterepreneurship
Immunology	BSCM2301	2017	Understanding the concept of Innate & adaptive immune system; performing serological analysis: Skill dev. & Employability & Entrepreneurship
Bacteriology, Virology & Mycology Practical	BMCM2306	2017	Demonstration of serological technique in diagnostic virology, bacteriology; Isolation & identification of fungi & bacteria: Skill dev
Pharmaceutical Microbiology	BSCM2402	2017	Understanding of types & synthesis of antimicrobial agents: Employability and Enterepreneurship
Industrial Microbiology	BSCM2403	2017	Understanding the significance of microbes in fermentation process & industrial effluents: Skill dev and Employability and Enterepreneurship



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Biochemistry	BSCM2404	2017	Learning the principle of spectrophotometry, colometry, photometry and Clinical biochemistry tests: Skill dev and Employability and Enterepreneurship
Industrial, Public Health Microbiology & Biochemistry Lab.	BSCM2406	2017	Industrial visit to a fermentation factory; Isolation & identification of microorganisms from samples: Analysis of urine and serum sample for biochemical parameters: Skill dev and Enterepreneurship, Employability
Basic Hematology	BSMT1103	2016	Carry out hematological investigations: Skill dev. & Employability & Enterpreunership
Basic Medical Instrumentation & Techniques	BSMT1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership
Anatomy , Physiology & Hematology Lab	BSMT1105	2016	Understanding the physiological aspects of growth and development of Human organs/ tissues and hematological investigations: Employability & Enterpreunership
Clinical pathology	BSMT1203	2016	Pathological investiations of urine, stool and other biological specimen: Skill dev. & Enterpreunership
Clinical pathology Lab & Microbiology Lab	BSMT1204	2016	Performing pathological investigations on human specimen: Skill dev. & Enterpreunership, Microscopic analysis of specimen collected: Skill dev. & Enterpreunership
Immunology	BSMT2301	2017	Understanding the concept of Innate & adaptive immune



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			system; performing serological analysis: Skill dev. & Employability & Entrepreneurship
Applied Hematology	BSMT2302	2017	Concept of Haemopoietic disorders, laboratory diagnosis of leukemia, hemolytic anemia, haemophilia, ITP: Skill dev. & Employability & Entrepreneurship
Basic Histology	BSMT2304	2017	Concept of Histotechnology, histopathology: Skill dev. & Employability & Entrepreneurship
Advance Biochemistry	BSMT2402	2017	Learning the principle of spectrophotometry, colometry, photometry and Clinical biochemistry tests: Skill dev and Employability and Entrepreneurship
Advanced Hematology	BSMT2403	2017	Understanding the lab diagnosis for Leukamoid reactions, DIC: Skill dev and Employability and Entrepreneurship
Biochemistry & Advanced Microbiology Lab	BSMT2406	2017	Analysis of urine and serum sample for biochemical parameters: Skill dev and Entrepreneurship; Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship
Medical Laboratory Management	BSMT3502	2017	Patient management and quality management: Employability & Entrepreneurship
Project	BSMT3601	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	BSMT3602	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Basic Radiation Physics	BSRT1104	2016	Understanding of the concept of Radiation in the study of human anatomy and disease identification: Employability
Basic Medical Instrumentation and Technique	BSRT1105	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership
Anatomy and Physiology lab	BSRT1106	2016	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability & Enterpreunership
Equipments Of Radiotherapy	BSRT1203	2016	Conceptualization of linear accelarators, simulators, magnetrons and klestron: Employability & Enterpreunership
Medical Imaging Lab - 1	BSRT1204	2016	Care and maintenance of x-ray equipment: Skill dev & Enterpreunership
Advance Radiographic Technique	BSRT2302	2017	Familiariation with the equipments of ultrasound, basic principle of ct scanning and MRI: Employability
Basics Equipment's in Radiodiagnosis	BSRT2304	2017	Understanding of gamma rays and its use in radiography, magnetron and klestron: Skill dev and Enterpreunership
Medical Imaging Lab - 2	BSRT2305	2017	Performing radiographic positioning, application of contrast media, Darkroom procedures: Skill dev and Enterpreunership
Radiotherapy and Brachy Therapy Techniques In Malignant And Non Malignant Diseases	BSRT2401	2017	Concept on treatment of cancer, dose limits for individuals: Skill dev and Employability
Applied Equipments Of Radio Diagnosis	BSRT2402	2017	Understanding of patient preparartion for general



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
			radiologic procedures, concepts on nuclear medicine and PET scan: Enterpreunership
Hospital posting Medical Imaging Lab - III	BSRT2406	2017	Exposure to different hospitals, training of x-ray, CT and MRI: Skill dev. & Employability & Enterpreunership
Basics of Magnetic Resonance Imaging	BSRT3503	2017	Understanding of MRI scans of different organs: Skill dev and Employability
Orientation In Clinical Sciences	BSRT3505	2017	Understanding about different diseases and medicines: Employability
Medical Imaging Lab - IV	BSRT3506	2017	Access to CT, MRI and their indications: Skill dev. & Employability & Enterpreunership
Project	BSRT3601	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	BSRT3602	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
BASIC COMPUTER	BSOP1105	2015	Identifying the applications and use of computers: Skil and Employability
GENERAL PHYSIOLOGY	BSOP1103	2015	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability
COMMUNICATIVE ENGLISH-I	FCHU0201	2015	Enhancement of basic language skills, i.e., listening, speaking, reading and writing: Skill dev.
OCULAR ANATOMY	BSOP1202	2015	Identifying the microscopic structures of various tissues in the eye and correlating the structure with the functions: Employability



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OCULAR PHYSIOLOGY	BSOP1203	2015	Elucidating the physiological aspects of normal growth and development of the eye: Employability
OCCULAR MICROBIOLOGY AND PATHOLOGY	BSOP2301	2015	Understanding of how knowledge of pathological processes can be utilized in the investigation, management and prevention of disease: Employability
OPYOMETRIC OPTICS I	BSOP2303	2015	Ability to measure the power of lens, lens centration using conventional techniques, identify different forms of lenses: Skill dev. and Enterpreunership
CLINICAL EXAMINATION OF VISUAL SYSTEM	BSOL2301	2015	Performing various clinical tests, their interpretation and finding: Skill dev. and Entrepreneurship and Employability
CLINICAL OPTOMETRY-I	BSOL2302	2015	Measurement of lens power, lens centration using conventional techniques, transposition of various types of lenses: Skill dev. and Entrepreneurship and Employability
OCULAR DISEASES -I	BSOP2401	2015	Developing diagnostic approach towards management of the ocular diseases: Employability
OPTOMETRIC OPTICS II	BSOP2403	2015	Developing the art and science of dispensing spectacle lens and frames based on the glass prescription: Skill dev. and Entrepreneurship and Employability
OCULAR DISEASES II	BSOP2405	2015	Knowledge on course sequelae of ocular diseases, their diagnosis and management of the ocular diseases: Employability
CLINICAL OPTOMETRY II	BSOL2401	2015	To gain practical knowledge regarding Ocular Diseases, Visual



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			Optics, Optometric Optics: Skill dev. and Entrepreneurship and Employability
BINOCULAR VISION & SQUINT	BSOP3501	2015	Binocular muscle coordination; Integration of motor and sensory system into binocular vision; Differentiate different types of strabismic anomalies; non strabismic anomalies related to accommodation & convergence: Skill & Employability
OCULAR DISEASES LABORATORY II	BSOL3503	2015	Performing the basic workup for a patient in a hospital and clinic set up: Skill dev. and Entrepreneurship and Employability
STATISTICS & OCCUPATIONAL OPTOMETRY	BSOP3601	2015	Interpretation and ability to prescribe suitable corrective lenses and eye protective wear: Skill dev. and Entrepreneurship and Employability
PEDIATRIC & GERIATRIC OPTOMETRY	BSOP3602	2015	Ability to identify, investigate the age-related changes in the eyes: Skill dev. & Employability
OPTOMETRIC INSTRUMENTS LABORATORY-II	BSOL3602	2015	Gaining practical skill in handling the advanced instruments in an Optometry Lab: Skill dev. and Entrepreneurship and Employability
PROJECT	BSOP4701	2015	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Human Anatomy and Physiology I– Theory	BPHT1101	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments





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Pharmaceutical Analysis I – Theory	BPHT1102	2017	Skill-Employability-Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession
Pharmaceutics I – Theory	BPHT1103	2017	Skill- Employability- Entrepreneurship -Understand the impact of pharmaceutical solutions in a global, economic, environmental, and societal context
Pharmaceutical Inorganic Chemistry – Theory	BPHT1104	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Communication skills – Theory *	BPHT1105	2017	Skill- Students can improve their communication Skill
Human Anatomy and Physiology – Practical	BPHL1101	2017	Skill-allows Students to verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Analysis I – Practical	BPHL1102	2017	Skill- Employability- Students can assay ,prepared and standardized various Heavy metals and Chemicals
Pharmaceutics I – Practical	BPHL1103	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Pharmaceutical Inorganic Chemistry – Practical	BPHL1104	2017	Skill- Students can perform purity test on drugs or chemicals
Communication skills – Practical*	BPHL1105	2017	Skill- Students can improve their communication Skill
Remedial Biology – Practical*	BPHL1106	2017	Skill- Students can learn about structure and functional system of plant and animal kingdom



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Human Anatomy and Physiology II – Theory	BPHT1201	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Organic Chemistry I – Theory	BPHT1202	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Pathophysiology – Theory	BPHT1204	2017	Skill-Employability-student get to know about various communicable diseases and pathophysiology along with all the techniques for screening test .
Environmental sciences – Theory *	BPHT1206	2017	Employability- student get to know about basic knowledge about the environment and its allied problems
Human Anatomy and Physiology II –Practical	BPHL1201	2017	Skill- allow the verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Organic Chemistry I– Practical	BPHL1202	2017	Skill-Students can do qualitative analysis and synthesis of Organic Compound
Biochemistry – Practical	BPHL1203	2017	Skill- Students can demonstrate different Biochemical Test
Computer Applications in Pharmacy – Practical*	BPHL1204	2017	Skill-Allows students to details with Database, Database Management system, computer application in clinical studies and use of databases
Pharmaceutical Organic Chemistry II – Theory	BPHT2101	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			pharmaceutical problems in research and development sector.
Physical Pharmaceutics I – Theory	BPHT2102	2017	Skill- Employability- formulate and solve complex pharmaceutical problems in formulation development
Pharmaceutical Engineering – Theory	BPHT2104	2017	Skill -Employability- Enterprenurship- students can able to understand and perform unit operations, material handling techniques, screening test and plant lay out design for optimum use of resources used in Pharmaceutical industries
Pharmaceutical Organic Chemistry II – Practical	BPHL2101	2017	Skill-Stuents can do qualitative analysis and synthesis of Organic Compound
Physical Pharmaceutics I – Practical	BPHL2102	2017	Skill- Allows student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.
Pharmaceutical Microbiology – Practical	BPHL2103	2017	Skill- Allows students to study of all categories of microorganisims especially for the production of alchol antibiotics, vaccines, vitamins enzymes etc.
Pharmaceutical Engineering – Practical	BPHL2104	2017	Skill- Students can get fundamental knowledge on the art and science of various unit operations used in pharmaceutical industry
Pharmaceutical Organic Chemistry III– Theory	BPHT2201	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			pharmaceutical problems in research and development sector.
Medicinal Chemistry I – Theory	BPHT2202	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures, structure activity relationship of various drug molecules.
Physical Pharmaceutics II – Theory	BPHT2203	2017	Skill- Employability- formulate and solve complex pharmaceutical problems in formulation development
Pharmacology I – Theory	BPHT2204	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Pharmacognosy and Phytochemistry I– Theory	BPHT2205	2017	Skill - Students can do identification and evaluation, phytochemicals present in them and their medicinal properties
Medicinal Chemistry I – Practical	BPHL2201	2017	Skill - Students can get fundamental knowledge on the structure, chemistry and synthesis of each class of drug
Physical Pharmaceutics II – Practical	BPHL2202	2017	Skill-student get to know better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Pharmacology I – Practical	BPHL2203	2017	Skill -Student can Observe the effect of drugs on animals by simulated experiments
INTERNET AND WEB TECHNOLOGY	BCAC3501	2016	Skill - Design and development of web programming.
OFFICE AUTOMATION	CCCS0409	2016	Skill- Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.
RDBMS	BCAC2302	2016	Skill - Database and file management
Apparel Production	CUTM3031	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Heavy Vehicle Technology	CUTM3034	2017	Employability/ Entrepreneurship/Skill - Practice and Project
E-Vehicle Assembly and Service Technology	CUTM3037	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Poultry Farming	CUTM3039	2017	Employability/ Entrepreneurship/Skill
Design Supervising Wooden and Modular Furniture	CUTM3041	2017	Employability/ Entrepreneurship/Skill - Practice and Project
3D Modelling and Printing	CUTM3043	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Precast Concrete Manufacturing	CUTM3045	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Fabrication	CUTM3046	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Internet of Things	CUTM3048	2018	Employability/ Entrepreneurship/Skill - Practice and Project



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Mechatronics System Design	CUTM3049	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Editor	CUTM3054	2018	Employability/ Entrepreneurship/Skill - Practice and Project
<b>2019-20</b>			
Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Differential Equations	FCBS 0102	2016	Skill Development(Students will know about the modelling of different engineering application )
Linear Algebra & Vector	FCBS 0103	2016	Skill Development(Students will know about modelling of problems related to system of equations in engineering application)
Integral Transform	FCBS 0104	2016	Skill Development(Students will know to find the solution using laplace and fourier transform )
Complex Analysis	FCBS 0105	2016	Skill Development(Students will know to find the solution using complex integral)
Discrete Mathematics	FCBS 0106	2016	Skill Development(Students will know about graphs, sets and logic)
Calculus	FCBS0107	2017	Employability (Students will know about curvature, asymptotes)
Probability & Statistics	FCBS0108	2017	Employability (Students will know about probability distribution) Skill (Students will know about mean, media, mode)
Numerical Methods	FCBS0109	2017	Skill Development(Students will know about solution of differential equation using different numerical techniques)



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Electricity and Magnetism	FCBS0404	2016	Skill development ( Students will develop the skill of identifying circuit elements and operating different electrical circuits)
Basic Mechanics and Properties of Matter	FCBS0405	2016	Employability (knowledge enhancement)
Optics and Optical Fibres	FCBS0406	2016	Employability (knowledge enhancement)
Industrial Chemistry	FCBS0402	2016	Employability-: Preparation of soap, dyes and oil analysis ,Analysis of cement Skill-All Practices
Environmental Science	FCBS 0101	2016	Employability-Environment and its multidisciplinary nature,Biodiversity and its conservation,Causes, effects and control measures of pollution.
Foundations of English Communication	FCHU1201	2016	Skill Development(Students will develop basic interpersonal communication skill (BICS) )
Communicative Practice Laboratory -1	FCHU1202	2016	Skill Development(Students will enhance their communication skills in english both academic and professional context)
Business Communication	FCHU1203	2016	Skill Development(Students will enhance their communication skills in english in bussiness context)
Communicative Practice Laboratory-II	FCHU1204	2016	Skill Development(Students will enhance their communication skills in english both academic and professional context)
Corporate Readiness Laboratory	FCHU1205	2016	Skill Development(Students will develop professional communication skill)
IT Enabled Communication	FCHU1206	2016	Skill Development(Students will enhance their communicative



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			competency through the use of technology)
Career Communication	FCHU1207	2016	Skill Development(Students will enhance their communicative competency in professional career)
Personality Development	FCHU1208	2016	Skill Development(Students will learn basic etiquette in professional sphere )
Seminar and Technical Writing	FCHU1209	2016	Skill Development(Students will learn the convention followed in academic and technical writing )
Professional Etiquette	FCHU1210	2016	Skill Development(Students will learn basic etiquette in professional sphere )
Creative Writing	FCHU1211	2016	Skill Development(Students will enhance their competency level using innovative method for creative writing)
English for Competition (GRE/GMAT/TOEFL/IELTS)	FCHU1212	2016	Skill Development(Students will enhance their competency level to compete with students of global standard)
Life Skills Development (LSD) - IV	FCHU0216	2019	Skill Development(Students will develop life skill including time management skill, personality and others)
Economics	FCMG0101	2016	Skill Development(to provide students with a basic understanding of the economic principles, methodologies and analytical tools that can be used in business decision making problems ) Employability & Entrepreneurship (Student shall understand and apply the impact of economic policies on managerial decision-making by providing an understanding of





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			fiscal policy, and national and global economic issues affecting business.)
Accounting & Finance	FCMG0102	2016	Skill Development-Students will be able to create, balance and deliver a budget and use budget information for planning and decision purposes; Employability & Entrepreneurship (Students to Undertake various costing techniques and information for planning and decision-making)
Management Processes and OB	FCMG0103	2016	Skill Development-Students shall be able to analyze and compare different models used to explain individual behaviour; Employability & Entrepreneurship (Students shall be able to resolve conflict, motivate the employees, handle stress and communicate effectively and manage diversified workforce in workplace)
Production and Operation Management	FCMG0104	2016	Skill Development (Acquire a working understanding of the roles/functions of production management in the context of business enterprise.) Employability & Entrepreneurship (Student can use specialized knowledge in Operations Management to solve business processes )
Marketing Management	FCMG0105	2016	Skill Development (Students will learn the application of various marketing tools for solving business problems). Employability and Entrepreneurship (students will acquire and develop the



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			marketing skills to be a successful marketing person )
Introduction to Research	FCMG0108	2016	Skill Development (Students will be able to understand the process of doing a research). Employability and Entrepreneurship (Students will be able to write a research report. )
Indian Society and Culture	FCMG0113	2016	Skill Development (Students will be familiarized with the science and technology policies that would benefit modern India). Employability and Entrepreneurship (Students would develop an idea about the socio-cultural environment in which they would be working as scientists, researchers and entrepreneurs. )
Disaster Management	FCMG1201	2016	Skill Development (students would begin to understand the relationship between vulnerability, disasters, disaster prevention, risk reduction and the basic understanding of the research methodology for risk reduction measures.). Employability and Entrepreneurship (Students would develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity )
Engineering Mechanics	ENFC0101	2018	Skill development (To provide the student with a thorough understanding of concept, drawing and free body diagrams.)



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Material Sciences	ENFC0102	2017	Employability and Skill development ( Students will able to identify materials for engineering use.Students will able to select best materials for a specific design and production.)
Thermodynamics	ENFC0103	2018	Skill development (Students will be able to prepare energy balance sheet will be able to understand various processes of thermodynamic cycles Will be familiar with the steam table which will further help them in advanced thermodynamics for understanding power cycles)
Geometric Modelling Lab	ENFC0202	2018	Skill development(Students will be able to Demonstrate use of CAD in Civil Construction, basic knowledge of operating software & commands, and benefit of civil developments in the construction industry. Do 2d &3d drafting /design with AUTO CAD software.)
3D Modeling	ENFC0204	2018	Skill Development (learning software which helps to draw complicated drawings and also helps in producing detail drawings in proper scale. Learning software which helps to better visualize complicated forms and also helps in producing photo realistic images of those 3D forms)
Electrical Workshop Practice	ENFC0205	2018	Skill development( Students will Enhance their skill of operating electrical instruments, hand tools and power tools)



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Engineering Metrology and Measurements	ENFC0401	2017	Employability and Skill development ( To Make Students Familiar with the Measuring Systems, and the Standard of Measurements. Learns about Basic Measurement Devices.Selecting Suitable Measuring Instruments for Basic and Typical Applications in the Industries.)
Basic Fluid Mechanics	ENFC0402	2017	Skill development(• After completion of the course, the students will able to evaluate finite difference/volume schemes on model problems of computational fluid dynamics. • Students will learn to develop steady state mechanical energy balance equation for fluid flow systems, estimate pressure drop in fluid flow systems)
Basic Surveying	ENFC0403	2017	Skill development(Doing centering, leveling & measuring coordinate points of area and calculation, transfer to data from Total station to software spectrum link Doing field work using of simple machine parts such as Total – Station, Auto- level)
Basic Electrical Engineering	ENFC0404	2017	Skill Development ( Students will get the skill to design devices and systems using electrical components such as resistors, capacitors, transistors, etc
Electrical Machines	ENFC0405	2018	Skill Development ( Students will get the skill to analyze about the principle of operation &



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			performance of rotating electrical machine like DC Motor, DC Generator, and Transformer
Introduction to automation	ENFC0406	2018	Skill development(Students will be able to use a number of PLC programming languages to develop control solutions.)
Programming in C	ENFC0409	2018	Skill And Employability(Case study to be given to students on uses of C program for development of various real time applications like online examination system, online quiz competition etc. )
Programming for Problem Solving – Java	ENFC0412	2017	Skill And Employability(Understands the concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)
Data Base Management System	ENFC0414	2018	Skill And Employability( Hands on training on Client/Server Architecture- System Structure , Instance and schema, Data Models, Types of DBMS Query Processing and Optimization: Evaluation of Relational algebra expressions-Query Equivalence-Transaction Processing: Built in SQL functions, Sub Queries-Joins-DCL – TCL- Views – Sequences – Index – Locks PL/SQL Basics – Exceptions – Cursors - Stored Functions – Triggers Case study in industrial standards of Database Management)



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<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Electronics and Its Application	ENFC0415	2018	Employability (Students will develop an updated knowledge in the latest trends)
Electronic Devices	ENFC0416	2018	Employability (Students will get the fundamentals cleared for the basics required in the industry)
Data Structures and C Programming	ENFC0419	2018	Skill And Employability(Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems)
Operating System	ENFC0422	2018	Skill And Employability(This course enables students to understand the basic concepts of operating system with different types of OS, services and system calls, get knowledge of process management, Inter process communication and various CPU scheduling algorithms. It also helps to understand the concept of memory management -paging and segmentation and learn about various I/O systems and mass storage structures.)
Block Chain and Smart Contracts	ENFC0424	2018	Skill And Employability(Hands on in design and program smart contracts and decentralized applications)
Object Oriented Programming through Java	ENFC0902	2018	Skill And Employability(Understands the



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)
Software Engineering using Agile	ENFC0904	2018	Skill (Students get to apply software engineering principles and techniques learnt to a real-life project topic of their choice in a contemporary domain and design-implement novel solution by working together as a team.
Hydraulics & Hydraulic Machines	CECC0103	2018	Skill development(Effectively use performance calculations Understand the accelerated flight performance Understand takeoff and landing performance Effectively use and understand stability for Aircraft. Able to understand the process of aerodynamic designing)
Disaster Preparedness & Planning Management	CECC0102	2018	Entrepreneurship(The student will develop competencies in The application of Disaster Concepts to Management. Analyzing Relationship between Development and Disasters. Ability to understand Categories of Disasters. Realization of the responsibilities to society)
Estimation & Quantity Surveying	CECC0201	2017	Skill development(Students will be able to Estimating, brick calculations & cost for different materials, foundation & footing calculations. Gain knowledge about how to



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			schedule & estimate different construction works both manually and using software.)
Pre-Fabricated Structures	CECC0202	2018	Skill Development(• After completion of the courses the students will gain knowledge of the processes of planning, production, storage, transportation and site installation of various prefabricated units pertaining to a civil engineering construction project • Students will develop innovative ideas about prefabricated structures)
Concrete Technology	CECC0412	2017	Skill(Demonstrate test and analysis of cement, aggregate, sand, effect of water cement ratio. Prepare concrete, carry out simple formwork and reinforcement with the application of modern Power Tools. Prepare reinforcement of different R.C.C. members i,e, Foundation, beams, columns, slabs, Retaining Wall, etc. Erect scaffolding and make the intricate formwork at different locations. Prepare a bar bending schedule and demonstrate bar bending and calculate the estimated quantity of materials.)
Soil Mechanics	CECC0401	2018	Employability(• Students will gain knowledge on soil mechanics and the concepts involve in it





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<ul style="list-style-type: none"> <li>• Students will develop skill on laboratory experiments, empirical methods and software aids involve in soil mechanics)</li> </ul>
Foundation Engineering	CECC0402	2017	Employability(To obtain knowledge about soil properties and methods of soil properties determination in the laboratory, using field tests and considering comparable experience. Basic stability and deformation problems. Principle of spread and deep foundation design. To understand fundamental knowledge of geotechnical works for soil improvement, interaction of structure and subsoil. Basic design methods for excavation and foundation pits with dewatering and sealing systems)
Transportation Engineering	CECC0403	2018	Employability(• Students will gain knowledge on planning, material selection for construction, Economics and finance and designing of elements on highway. <ul style="list-style-type: none"> <li>• Acquire the skill of designing the geometric elements of highway using AUTOCAD CIVIL 3D software.)</li> </ul>
Water supply & Waste water Management	CECC0415	2018	Employability(• Students will gain knowledge and the concepts involve in it <ul style="list-style-type: none"> <li>• Students will develop skill on laboratory experiments, empirical methods and software aids involve in hydrology)</li> </ul>
Hydrology &Water Resources Engineering	CECC0416	2018	Employability(• Students will gain knowledge on and the concepts



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			involve in it • Students will develop skill on laboratory experiments, empirical methods and software aids involve)
Quality Control and Risk Management in Construction	CECC0414	2018	Entrepreneurship(• Students will gain knowledge on and the concepts involve in it • Students will develop skill on laboratory experiments, empirical methods and software aids involve)
Computer Aided Design of Steel Structure	CECC0407	2017	Skill development(Perform free hand sketching of basic geometrical constructions and multiple views of objects. Concept of projection, Types of section, PEB structure & Steel structure work. able to know the process of making sketches, types of projections, designing of beam, columns and shear walls.)
Computer Aided Design of Concrete Structure	CECC0408	2017	Skill development(Perform free hand sketching of basic geometrical constructions and multiple views of objects. Concept of projection, Types of section, PEB structure & Steel structure work. able to know the process of making sketches, types of projections, designing of beam, columns and shear walls.)
Strength of Material	CECC0411	2018	Employability(Students will acquire knowledge and skill to analyze the effect of force and motion on rigid bodies to solve engineering problems through



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			application of basic laws of mechanics.)
Construction Equipment Management	DECP0101	2018	<p>Entrepreneurship(Students will be able to work with the latest trend of the construction industry needs.</p> <p>Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.</p> <p>Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning.</p> <p>Students will plan various projects relating to advanced building technology with trust.</p> <p>Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant.</p> <p>Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Site Supervision & Measurement Methods	DECP0401	2018	<p>Employability(• Students will gain knowledge on and the concepts involve in it</p> <p>• Students will develop skill on laboratory experiments, empirical methods and software aids involve)</p>
Repairs, Renovation and Rehabilitation of Structures	DECP0403	2018	<p>Employability(• After successful completion of the course the students will have capability/knowledge of various important, monumental but</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			distressed and damaged modern materials that longevities old concrete and masonry structures)
Tendering Process, Bidding Contract Agreements & Arbitration	DECP0601	2018	Employability(• Upon successful completion of the course, students shall be fit in CPWD, state Government departments and infrastructural organizations, persons working in development projects in public or private sectors. Consultancy units, research organizations as well as self-employed practitioners engaged in the planning, design, Procurement, construction, operation and maintenance. • Apply legal aspects of construction projects in construction contract, of issues related to contract administration, apply various disputes resolution techniques including arbitration)
Software Based Project Scheduling and Management	DECP0301	2018	Entrepreneurship(• Identify various activities of a construction project and the critical path for executing the same. • Carry out a major project and prepare a document that contains all aspects of a construction project. )
Project	DEET0300	2015	Employability development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>involved in the design and construction process.            Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning.            Students will plan various projects relating to advanced building technology with trust.            Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant.            Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Internship	DEET0800	2015	Employability (Skill development course)
Earthquake Resistant Design	DEPD0102	2018	Employability(• To study correlation with architectural design and performance of building during earthquake • To study advanced structural design parameters • To analyze the detailing of reinforcement design and its impact on performance )
Barrier Free Design	DEPD0103	2018	Employability(• To study the various provisions in the code • To design or modification based on provision in the code • To analyze the improved performance of the same building with different set of users)
Remote Sensing & Digital Image Processing	DESP0401	2018	Employability(• Students will gain knowledge of basic concepts of remote sensing, aerial



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			photogrammetry. • Students will gain knowledge of applications different satellites imagery, image classification techniques and image analysis and interpretation.)
Geospatial Technology and its Application	DESP0901	2018	Employability(• Students will gain knowledge about the structure of spatial data including file associations, attribute tables, Metadata, coordinate systems, and projections. • To develop software skills in programs used for map production in the modern cartographic workflow.)
Photogrammetry and its Application	DESP0402	2018	Employability(• Students will gain knowledge about the survey by Photogrammetry method. • Prepare DEM, TIN model and generate contour map.)
Lidar Remote Sensing and its Applications	DESP0201	2018	Employability(• Students will gain knowledge about LIDAR and its application. • Students will be more skilled in CATIA Civil module )
Smart City Planning	DESP0202	2018	Skill development(• Students will gain knowledge about to design and plan a twin city model. • Students will get more knowledge on designing of building, road, drainage etc. through Autodesk Infracore and 3D EXPERIENCE Platform)
Introduction to Gaming & Simulation	CSCC0901	2018	Skill And Employability(End to End Game Development Pipeline)
Introduction to Cyber Security	CSCC0902	2018	Skill And Employability(Students have done activities like network analysis, intrusion detection in



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			the network and file integrity using different open source tool.)
AI & ML using Python	CSCC0903	2018	Skill And Employability( Implemented different Real life Projects in the field of medical and Agricultural image processing)
Computer Organization and Architecture	CSCC0410	2018	Skill And Employability(Students had Implemented various VPC,VPN and optimization of network cost and also Understand and building the skills of sub-netting and routing mechanisms)
Design Analysis and Algorithms	CSCC0412	2018	Skill( Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems. )
Data Warehousing and Data Mining	CSCC0414	2018	Skill (Student will able to design data warehouse with dimensional modeling and apply OLAP operations.)
Building of Cloud Infrastructure	DECT0901	2015	Skill And Employability( Analyze and Understand the functioning of different components involved in Amazon web services and also acquire cloud technology skill for cloud partitioner certification which helps students in getting jobs in different MNCs)



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Deployment Architecture -I	DECT0902	2015	Skill And Employability(Evaluate cloud application requirements and make architectural recommendations for implementation, deployment and provisioning applications on AWS)
Deployment Architecture - II	DECT0903	2015	Skill And Employability(Ability to evaluate cloud application requirements and make architectural recommendations for implementation, deployment and provisioning applications on AWS)
Advanced Networking	DECT0904	2015	Skill And Employability(Students had Implemented various VPC,VPN and optimization of network cost and also Understand and building the skills of sub-netting and routing mechanisms)
Problem Solving through Coding	DEST0201	2015	Skill And Employability(Obtain skills to solve problems involving text, numbers and graphics, producing a top-level plan with refinements.)
Linux and Lamp Administration	DEST0402	2015	Skill And Employability(Obtain skills in Linux server administration. Content includes LINUX and Web server installation, system startup/shutdown, hardware configuration, disk and file system structure, package management, TCP/IP networking, system management and security, X-Windows usage and configuration, user management )





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Testing and Test Automation	DEST0403	2015	Skill And Employability( students had applied various modern software testing processes in relation to software development and project management)
Python for Data Science and Machine Learning	DEML0201	2015	Skill And Employability(Implement ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able to solve problems in areas computational finance, image processing and computer vision, energy and natural language processing.)
Supervised and Unsupervised Machine Learning	DEML0401	2015	Skill And Employability(Implement several ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able to solve problems in areas computational finance, image processing and computer vision, energy and natural language processing.)
ML Techniques in Image Processing	DEML0202	2015	Skill And Employability( Implemented different Real life Projects in the field of medical and Agricultural image processing)
Introduction to IT Networking & Security	DEIS0121	2015	Skill And Employability(To understand, design and implement appropriate security technologies and policies to protect computers and digital information)



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Advanced Networking	DEIS0421	2015	Skill And Employability( Understand and explain Data Communications System and its components and Identify the different types of network topologies and protocols. Enumerate the layers of the OSI model and TCP/IP and explain the functions of each layer, identify the different types of network devices and their functions within a network )
White Hat Hacking Techniques and Tools	DEIS0422	2015	Skill And Employability( Information technologies skill like vulnerabilities, defense-in-depth, penetration testing, the methodology for pen testing/ethical hacking, vulnerability management, incident management, and creating and implementing a security policy will be understood)
Information Technology Infrastructure Library	DEIS0122	2015	Skill And Employability( Obtain the skill about IT Service Management best practices, generic concepts, key principles, gain a comprehensive understanding of the purpose and scope of service strategy, service design, service transition, service operations, and Continual Service Improvement)
Network Security Audit of an Organisation	DEIS0221	2015	Skill And Employability(To perform an IT Network security audit of an organization and prepare a detailed report



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			identifying different weakness of the architecture)
Electromagnetic Field Theory	ECCC0101	2019	Skill Development This subject is a base subject for wireless communication, Antenna Engineering and other advanced communication based subject.
Analog Electronic Circuits	ECCC0401	2018	Skill Development and Employability ( Its an important subject in the curriculum. Its also equivalently important for facing interviews in industry.)
Digital Electronic Circuits	ECCC0402	2018	Skill Development and Employability (Its an important subject in the curriculum. Its also equivalently important for facing interviews in industry.)
Networks and Systems	ECCC0403	2018	Employability (Its also equivalently important for facing interviews in industry. Evaluate Complex Frequencies, Pole-Zeros of an Admittance or Impedance function and sketch Pole-Zero Plots and to find Resonance, Q-Factor and Bandwidth)
Analog Communication Systems	ECCC0405	2017	Employability (Familiar with analog radio transmitters and receivers Verify the Noise performance of different Modulation Techniques)
Digital Communication Systems	ECCC0406	2017	Employability (Illustrate the classification of channels, Entropy coding methods and different types of Error control codes along with their encoding/decoding)



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			algorithms. Examine the Performance of different Digital Carrier Modulation schemes of Coherent and Non-coherent type based on Probability of error)
VLSI Design	ECCC0407	2017	Employability (Design combinational and sequential circuit using CMOS logic Enhancement of complex digital VLSI logic design skill of students which will help them to complete any project work undertaken in higher semesters. Perform back-end physical design)
Microwave and Radar Communications	ECCC0410	2017	Employability (Integrate the concept of bunching and velocity modulation to summarize the operation of micro wave tubes and the high frequency limitations of conventional tubes. Analyze the principle, operation and characteristics of different Radars and its applications)
Antenna and Wave Propagation	ECCC0411	2018	Employability (Analyze antenna parameters Evaluate the features and analyze the radiation pattern of antennas by using simulation tools Compare wave propagation techniques and illustrate the radio wave behavior in different modes of communications)
Transmission & Distribution	ELCC0101	2018	Skill development ( Students will develop the SKILL related to various electrical power



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			transmission and distribution schemes available in India.)
Distributed Generation & Micro Grid	ELCC0103	2017	Skill development(Students will be able to enhance their power system generation skill under microgrid)
Electrical Circuit Drawing (Using Auto CAD)	ELCC0202	2018	Skill development(Students will know the use of AutoCAD Software and will develop skill of designing generalized electrical Machine blueprint)
Network Theory	ELCC0401	2018	Skill development ( Students will develop the designing skill of various electrical network topology)
Electronic Measurement & Instrumentation	EECC0409	2018	Skill development ( Students will develop the SKILL about various bridges used to measure R, L, C and measuring instruments like Galvanometer, Potentiometer, CT & PT )
Linear Integrated Circuits & Application	ELCC0403	2018	Employability(Students will be able to design, filter, amplifier circuit and also skilled to solve problem related to linear IC)
Control System	ELCC0406	2018	Skill development ( Students will develop the SKILL related to time domain and frequency domain analysis, root locus, bode plot, nyquist plot etc.)
General PLC	DEIA0101	2018	Skill development(Students will develop skill of designing Automatic Control System using PLC)
Basic Electrical (Automation based) and Panel Designing	DEIA0201	2018	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using



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			relevent software & hardware tools)
Supervisory Control and Data Acquisition (SCADA)	DEIA0401	2018	Skill development (Students will gain Functional skill set with hands-on; on Dynamics of Industrial Automation by using SCADA-Schneider-Wonder ware In Touch tools)
Micro Range Programmable Logic Controller	DEIA0402	2018	Skill development (Students will gain Functional skill about the Programmable logic controller used for micro range applications)
Small Range Programmable Logic Controller	DEIA0403	2018	Skill development (Students will gain Functional skill about the Programmable logic controller used for small range applications)
Medium Range Programmable Logic Controller	DEIA0404	2018	Skill development (Students will gain Functional skill about the Programmable logic controller used for medium range applications)
Human Machine Interface (HMI)	DEIA0202	2018	Skill development (Students will gain Functional skill set with hands-on; on PLC based Automation System by using HMI-Allen Bradley-Panel View C600 tools)
Variable Frequency Drive	DEIA0203	2018	Skill development (Students will gain Functional skill to operate the Drive by changing system Frequency)
Modern Transmission and Distribution System	DEOM0101	2018	Skill Development ( Students will learn about the Transmission and Distribution system used in Modern days)
Operation and Testing of Power and Distribution Transformer	DEOM0401	2018	Skill Development ( Students will learn about the operation and testing procedures used in Power & Distribution Transformer)



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System Protection and Auxiliaries	DEOM0402	2018	Skill Development ( Students will develop different protection scheme with hardware & software integration)
Construction of HT and LT lines and Cables	DEOM0102	2018	Skill Development ( Students will develop skill set with hands on training & practice on Routine test of LT & HT Line Cable upto 33KV class)
Safety Practice and First Aid	DEOM0201	2018	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques)
Electrical System Layout and Drawing	DEOM0202	2018	Skill Development ( Students will develop different electrical system layout with software application)
Power System Market, Act and Regulations	DEOM0103	2018	Employability (Student will learn power market operation & energy audit process with hands on practice which will lead them to placement in power & energy trading company)
Design of Transformer Core and Winding	DEDRO101	2018	Skill Development ( Students will Manufacture three phase Distribution Transformer of 11KV class as per BIS specification)
Manufacturing of Transformer HT and LT Winding	DEDRO201	2018	Skill Development ( Students will Manufacture three phase Distribution Transformer windings as per BIS specification, during project work)
Manufacturing of Transformer Tank and Accessories	DEDRO202	2018	Skill Development ( Students will Manufacture three phase Distribution Transformer Tank and accessories as per BIS specification, during project work)



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Testing and Commissioning	DEDR0401	2018	Skill Development ( Students will develop skill set with hands on training & practice on Type & Routine test of distribution transformer upto 33KV class)
Safety and Protection	DEDR0402	2018	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques & operation of protection schemes in transformer)
Transformer Repair and Maintenance	DEDR0403	2018	Skill Development ( Students will develop skill set with hands on training & practice on Repair & Maintenance of distribution transformer upto 33KV class)
Renewable Energy Sources and Technology	DERE0161	2015	Skill Development (Students will learn and develop the different technologies of renewable energy Sources)
Solar Photovoltaic Technology	DERE0162	2015	Skill Development (Students will learn and develop the different technologies of Solar photovoltaic)
Solar Thermal Technology	DERE0163	2015	Skill Development (Students will learn and develop the hybrid generations that combines the solar photovoltaic along with the Thermal power generations)
Solar Systems for Buildings	DERE0464	2015	Skill Development (Students will learn and develop the roof top solar generation system)
Solar Power Plant	DERE0465	2015	Skill Development (Students will learn the principle of solar power plant)
Decentralized and Smart Power Grids	DERE0466	2015	Skill Development (Students will learn the principle of solar power plant)





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Solar Photovoltaic Laboratory	DERE0267	2015	Skill development (Students will gain the knowledge with hands-on; on different smart power grids like wind, solar by using relevant software & hardware tools)
Solar Thermal Laboratory	DERE0268	2015	Skill Development (Students will develop hands-on, on different solar related live product/project)
Quality Control and Reliability Engineering	MECC0101	2018	Skill development (The students can able to apply the concept of SQC in process control for reliable component production.)
Fluid Power Control	MECC0102	2018	Employability and Skill development (To impart knowledge to students on fundamentals of hydraulic and pneumatic power and their circuits with industrial applications.)
Introduction to Hybrid and Electric Vehicles	MECC0103	2018	Employability and Skill development (Students will acquire knowledge regarding the testing and performance of electric vehicles)
Renewable Energy Systems	MECC0104	2018	Skill (To have a knowledge of energy scene in India.To acquire the skill of analyzing and designing renewable energy systems.To expose the students about energy demand and supply situation in India.)
Manufacturing Technology 1	MECC0401	2017	Skill And Employability (Students will have Knowledge and Skills to Understand Actual Manufacturing Processes used in Industry and will be Able to Correlate a Specific Process with the Part / Component being Produced.



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			Students will be Able to Select the Most Optimum Manufacturing Process for a Specific Product Design and Application.)
Manufacturing Technology 2	MECC0402	2017	Skill And Employability (Students will be Able to Do Process Planning, Develop CNC Part Programs. Students will have Knowledge and Skills to Operate CNC Machines.)
Design for Manufacturing	MECC0403	2017	Skill And Employability (Students will be able to select appropriate manufacturing technology and process to produce a product effectively with quality and optimized production cost.Students will have skills and knowledge to use softwares like CATIA, Novaflow and Solid CV, ProCAST, Flow-3D Cast, DEFORM-3D and PAM-STAMP 2G.)
Finite Element Analysis	MECC0404	2017	Skill And Employability (Students will be Able to Deploy Practical and Industrial Approach using FEA towards Solving Engineering Problems)
Digital Manufacturing	MECC0405	2017	Skill And Employability (Students will be able to use modern software like DELMIA-Quest (Dassault System) and Camtesia to conceptualise and create 3D factory layouts and optimise resource planning.Students will be able to do simulation of manufacturing processes using software tools.)
Fundamentals of Heat Engine	MECC0415	2018	Skill And Employability (Students will be able to test internal combustion engines for various



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			performance parameters using engine test rigs.Students will be able to carry out emission tests using various types of fuels commonly used in internal combustion engines.)
Design of Thermal Energy Systems	MECC0407	2017	Skill And Employability (Students will be able to identify and select, design and implement appropriate thermal energy system corresponding to specific need.)
Mechanics of Machines	MECC0410	2017	Skill And Employability (Students will have knowledge and skills to analyze , design and develop mechanisms suiting specific applications. Students will have knowledge skills to study and understand working of complex mechanisms and machines enabling them to safely operate and maintain such installations)
Design of Transmission Systems	MECC0412	2018	Skill And Employability (To Enable the Students to Design Basic Transmission Elements using prior theoretical Knowledge)
Fluid Mechanics and Heat Transfer	MECC0414	2017	Skill And Employability (Students will be able to analyze and design various Equipment used in industry using principles of Fluid Mechanics and Heat Transfer)
Introduction to Automobile Engineering	DEAE0101	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad.There are large number of job opportunities in automobile designing, research &



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			development, sales & service. The students can also successfully run their own business in this field.)
Entrepreneurship Opportunities in Automobile Trade	DEAE0102	2018	Employability and Skill development ( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Maintenance of Automobile	DEAE0204	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Design of Basic Automobile Components	DEAE0205	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Subsystems of Automobile	DEAE0401	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in



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Empowering Communities...*

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			automobile designing, research & development, sales & service.The students can also successfully run their own business in this field.)
Design and Maintenance of Electric Vehicles	DEAE0402	2018	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad.There are large number of job opportunities in automobile designing, research & development, sales & service.The students can also successfully run their own business in this field.)
Jigs and Fixtures	DECM0101	2015	Employability and Skill development ( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Process Planning and Cost Estimation	DECM0102	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing



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Empowering Communities...*

Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Conventional Machining for Cylindrical Shape Component	DECM0201	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Conventional Machining for Prismatic Shape Component	DECM0202	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of



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Empowering Communities...*

Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
CNC Machining	DECM0603	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Non-Traditional Machining and 3D Printing	DECM0604	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)



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Wood Engineering	DECM0203	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Project	DECM0300	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Internship	DECM0800	2015	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Joining Processes & Technology	DEWD0403	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Arc Welding, Gas Welding & Brazing	DEWD0201	2015	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Metal Transfer & Weld Metallurgy	DEWD0102	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			national and international levels in the industry as qualified welding inspector.)
Design of Welded Joints (CATIA)	DEWD0101	2015	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Welding of Stainless Steel, Aluminium, Copper, Cast Iron and Hard Surfacing	DEWD0603	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Testing of Welded Joints (DT, NDT & Microstructure)	DEWD0604	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Project	DEWD0300	2018	Employability and Skill development( This gives oppertunities for self employed by opening a small-scale welding shop to a medium scale industry.skill certification will



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			make the candidate recognised in national and international levels in the industry as qualified welding inspector.)
Basic Metallurgy	DEOC0134	2015	Employability and Skill development (Understand the correlation between processing, structure and properties of metals. Ensure production of metallic components for use in consumer or engineering products)
Power Plant Engineering	DEOC0131	2015	Skill development (Students will be able to work out the problems related to power plant engineering. Students will be able to understand the basics of power plant design.)
Information Theory & Coding	DEOC0136	2018	Employability Design the channel performance using Information theory. Comprehend various error control code properties. Apply linear block codes for error detection and correction. Apply convolution codes for performance analysis & cyclic codes for error detection and correction. Design BCH & RS codes for Channel performance improvement against burst errors
Mobile Communication	DEOC0135	2018	Employability Understand the new trends in mobile/wireless communications networks, understand multiple radio access techniques, analyze various routing algorithms used in mobile/wireless networks,



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			identify the issues in transport and application layers.
Power System Generation	DEOC0121	2015	Skill development ( Students will learn the SKILL of generating electrical powers from different sources used in Power System)
Electromagnetic Theory	DEOC0122	2015	Employability Knowledge of, physical interpretation, and ability to apply Maxwell's equations to determine field waves, potential waves, energy and charge conservation conditions. Experimental measurement of voltages induced by time varying magnetic flux. Flux determination.
Power Quality and FACTS	DEOC0123	2018	Skill development ( Students will learn the SKILL of different power quality issues and flexible AC transmission systems)
Soft Computing Techniques - II	DEOC0124	2018	Skill development(Students will develop the SKILL related various techniques used in soft computing)
MATLAB for Electronics	DEOC0233	2018	Employability Able to use Matlab for interactive computations. Familiar with memory and file management in Matlab. Able to generate plots and export this for use in reports and presentations. Able to program scripts and functions using the Matlab development environment.
Basic Electrical Maintenance	DEOC0221	2015	Skill development(This course will enable students to safely undertake electrical maintenance



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			of domestic and Industrial appliances)
Automotive Electrician	DEOC0222	2015	Skill development(Student will acquire the skills to identify and solve problems related to electrical parts (harness) of the vehicle)
Advanced Power Electronics	DEOC0421	2015	Skill development (Students will gain Functional skill set with hands-on; on Advnce Applications in Power Electronics by using relevent tools)
Electrical Drives	DEOC0422	2015	Skill development (Students will gain Functional skill set related to different DC & AC drives.)
Advance Control System	DEOC0423	2015	Skill development (Students will gain Functional skill related to control theory, Advanced process control (APC) that refers to a broad range of techniques and technologies implemented within industrial process control systems
Instrumentation and Measurement	DEOC0424	2018	Skill development ( Students will develop the SKILL about various bridges used to measure R, L, C and measuring instruments like Galvanometer, Potentiometer, CT & PT )
PCB Design and Analysis	DEOC0425	2018	Employability To design and fabricate PCB for prototyping as well as in Industrial Production environment. This will help students to innovate faster with electronics technology.
Advanced Structural Analysis	MTSE1101	2019	Skill development(• Skill in developing computer program for the structural analysis of two-



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			dimensional frames. • To obtain some experience in the use of modern structural analysis programs.)
Structural Dynamics	MTSE1102	2019	Skill development(To provide basic knowledge of mathematics, science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system, component or process as per needs and specifications when subjected to dynamic loads.)
Theory of Elasticity & Plasticity	MTSE1103	2019	Skill development(• Ability to apply the knowledge of mathematics, science and engineering with Elasticity concept to solve problems in two Dimensional Problems in Polar Coordinates. • To provide the students with basic skill of plasticity concept applicable in structural systems)
Architectural Design	MTSE1104	2019	Skill development(Provide skill with a well-educated workforce that is ready and able to perform valuable architectural and construction engineering and managerial services immediately after graduation The ideas / concepts learned in Basic Design and other related subjects have to be carried forward into the architectural design now envisaged. The exercises may be taken up as mentioned herein.)



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Bridge Engineering	MTSE1105	2019	Skill development(At the end of the course, the students have a skill to: <ul style="list-style-type: none"> <li>• Design the slab culvert, Box culvert</li> <li>• Design the T beam bridge and substructures</li> <li>• Design the Bridge bearings</li> <li>• Design the steel bridge for railway)</li> </ul>
Computer Graphics	MTSE1106	2019	Skill development(At the end of the course, the students have a skill and employability to: Event driven I/O and callback programming & typical structure of an interactive, real-time computer graphics program " 2&3D transformations, homogeneous co-ordinates, post-multiplication " Modelling and instantiat)
MATLAB for Civil Engineers	MTSE1107	2019	Employability (Differential equations and its application to engineering problems Soft computing applications to engineering problems)
Finite Element Method	MTSE1201	2019	"Skill development(• Enable the students to identify, formulate and skill to engineering problems related to one, two and three Dimensional structures subjected to static loads. <ul style="list-style-type: none"> <li>• To show the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to wrong analysis)"</li> </ul>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Concrete Technology	MTSE1202	2019	Skill development(• To study and understand various types of technology added in concrete • Have a skill to develop in design of various grades of concrete)
Research Methodology & IPR	MTRM1201	2019	Skill development(1. Skill to research problem formulation. 2. Analyze research related information 3. Follow research ethics 4. Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.)
Structural Engineering Lab	MTSE1203	2019	"Skill development(To provide basic knowledge of mathematics, science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system, component or process as per needs and specifications when subjected to dynamic loads.)"
3D Modeling using ANSYS and CATIA	ISSE1205	2019	Skill development(Introduction to Engineering Design Different types of Numerical Methods & Applications, Practical Applications of FEA, Basics of finite element method (FEM),)
Design of Prefabricated Structures	MTSE0101	2019	Skill development(• Grasp of the construction methods using these elements have the skill of the construction methods using these prefabricated elements)
Renovation and Retrofitting of green structures	MTSE0102	2019	Skill development(By the end of this course students will have the skill /knowledge of





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<ul style="list-style-type: none"> <li>• various distress and damages to concrete and masonry structures</li> <li>• the importance of maintenance of structures, types and properties of repair materials etc)</li> </ul>
Advanced Construction Materials	MTSE0103	2019	Skill development( <ul style="list-style-type: none"> <li>• To study the polymers in civil engineering construction</li> <li>• To study the corrosion of concrete in various environments)</li> </ul>
Soil Dynamics and Geotechnical Earthquake Engineering	MTSE0104	2019	Skill development(Develop skill in applying theory of vibrations to basic facets of soil behavior under dynamic loading together with the exposure of the fundamental principles of wave propagation in engineering example)
Industry Internship and Project - I	MTIP2101	2019	Employability(On successful completion of this course student will able to: <ul style="list-style-type: none"> <li>• Get Experience of working conditions on live projects of company.</li> <li>• learn soft skill viz. Self-Confidence, widen Strong Work Ethic toward work, Positive Attitude towards work, develop effective Communication Skills, Time Management Abilities, Problem-Solving Skills etc.</li> <li>• Find successful employment after graduation.)</li> </ul>
Industry Internship and Project - II	MTIP2201	2019	Employability(On successful completion of this course student will able to: <ul style="list-style-type: none"> <li>• Get Experience of working conditions on live projects of company.</li> </ul>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<ul style="list-style-type: none"> <li>• learn soft skill viz. Self-Confidence, widen Strong Work Ethic toward work, Positive Attitude towards work, develop effective Communication Skills, Time Management Abilities, Problem-Solving Skills etc.</li> <li>• Find successful employment after graduation.)</li> </ul>
Traffic Engineering And Management	ISTE1101	2019	Skill development(• To learn traffic studies, their analysis and their interpretation. <ul style="list-style-type: none"> <li>• To learn analysis of LOS.</li> <li>• To learn design of signal.</li> <li>• To learn transportation system management.)</li> </ul>
Pavement Materials And Construction	ISTE1102	2019	Employability(• To learn about characteristic of subgrade soil. <ul style="list-style-type: none"> <li>• To learn about characteristic of road aggregates.</li> <li>• To learn about characteristic of paving grade bitumen.</li> <li>• To learn about characteristic of cement used in road construction.)</li> </ul>
Transportation Infrastructure Design	ISTE1104	2019	Employability(• To learn Geometric Design of Cross Sectional Elements of various types of roads. <ul style="list-style-type: none"> <li>• To learn Geometric Design of Horizontal Alignment of Roads</li> <li>• To learn Geometric Design of Vertical Alignment of Roads.</li> <li>• To learn transportation system management)</li> </ul>
Pavement Material Lab	ISTE1106	2019	Skill development(• To learn about characteristic of subgrade soil. <ul style="list-style-type: none"> <li>• To learn about characteristic of</li> </ul>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)
Traffic Survey Practice	ISTE1107	2019	Skill development(• Fieldwork using Hi-Tech surveying instruments • Clustering using field traffic data • Preparation of questionnaires for OD survey
Pavement Analysis And Design	ISTE1201	2019	Skill development(• To learn about various factors affecting pavement design. • To learn about stress analysis of the pavement. • To learn about various methods of flexible pavement design. • To learn about various methods of rigid pavement design.)
Highway Project formulation and Economics	ISTE1202	2019	Employability(• To learn Geometric Design of Cross Sectional Elements of various types of roads. • To learn Geometric Design of Horizontal Alignment of Roads • To learn Geometric Design of Vertical Alignment of Roads. • To learn transportation system management)
Traffic Safety	ISTE1203	2019	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Research Methodology For Engineers	ISRM1201	2019	Employability(Meaning of Research , Objectives of Research ,Motivation in Research ,Types of Research Research Approaches ,Significance of Research ,Research Methods versus Methodology Research and Scientific Method ,Importance of Knowing How Research is Done ,)
Survey Lab	ISTE1204	2019	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Transportation Engineering Design Practice	ISTE1205	2019	Skill development(Gain knowledge about the software used in transportation like surface creation, surface profile and cross section of roads.)
Remote Sensing And GIS for Transportation Engineering	ISTE1207	2019	Skill development(• Ability to understand the basics and characteristics of remote sensing.



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<ul style="list-style-type: none"> <li>• Ability to process remotely sensed data.</li> <li>• Ability to draw information from remotely sensed data.</li> <li>• Ability to understand the basics and application of GPS in transportation engineering)</li> </ul>
Pavement Evaluation ,Rehabilitation and Maintenance	ISTE1208	2019	Employability(• To learn about characteristic of subgrade soil. • To learn about characteristic of road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)
Project Management	ISTE1209	2019	Employability(Identify functions of project management including estimating, job controls, field data collection, scheduling, accounting and design. * method that uses technology to measure cost and productivity through the full life-cycle of enterprise level projects * Contract Management and Tendering
Environmental Impact Assessment for Transportation Projects	ISTE1210	2019	Employability(• environmental issues in decision-making) .• impacts of transportation projects on air quality, society, economy, ecology and travel .• Ecological disturbances . Environmental Issues in Industrial Development
Industry Internship and Project-1	ISTE2101	2019	Employability(Student will be doing live project For 4 months in an Industry and submit a Project



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			Report to concerned guide certified by the Industry Engineer)
Industry Internship and Project-II	ISTE2200	2019	Employability(Student will be performing internship for 3-months in Industry and submitted a report and duly certified certificate from the competent Engineer in charge)
Computer Applications to Power System Analysis	MTPS1101	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
Non-Linear Control Systems	MTPS1102	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
Micro Controller Application with PLC	MTPS1103	2019	Skill development (Students will gain Functional skill set with hands-on; on Micro Controller & Application of Micro Controllers in System Dynamic by using relevant software & hardware tools)
SCADA- Compatible with all PLC	MTPS1104	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Advanced Electrical in Automation	MTPS1105	2019	Skill development (Students will gain Functional skill set with hands-on; on Advnce Applications Such as Load Changing



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Automation in Power Networks by using relevant tools)
Sensors and VFDInterface to PLC and SCADA	MTPS1106	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Digital Control System Applied to Power System	MTPS1201	2019	Skill development (Students will gain Functional skill set with hands-on; on Digital Control System Applied to Power System by using relevant software & hardware tools)
Power System Dynamics & Stability	MTPS1202	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
SCADA-Compatible with fixed brand of PLC	MTPS1203	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Distributed Control System	MTPS1204	2019	Skill development (Students will gain Functional skill set with hands-on; onDistributed Control System by using relevant software & hardware tools)
Power System Monitoring by HMI	MTPS1205	2019	Skill development (Students will gain Functional skill set with hands-on; on Power System Monitoring by HMI by using relevant software & hardware tools)
High voltage Engineering	MTPS0101	2019	Skill development (Students will gain Functional knowledge with



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
			hands-on; on high voltage engineering application in transformer workshop)
Optimization Techniques in Power System	MTPS0102	2019	Skill development (Students will gain Functional knowledge with hands-on; on digital applications in power system techniques)
Digital Power System Applications	MTPS0103	2019	Skill development (Students will gain Functional knowledge with hands-on; on high voltage engineering application in transformer workshop)
Power Quality Analysis	MTPS0104	2019	Skill development (Students will gain Functional knowledge of power quality)
Non-Conventional Renewable Energy	MTPS0105	2019	Skill development (Students will gain Functional knowledge with hands-on; on different RE electriccity generation process)
Renewable Energy System Integration with Grid	MTPS0106	2019	Skill development (Students will gain Functional knowledge with hands-on; on RE system integration with grid application in transformer workshop)
Concepts of Smart Grid Technology	MTPS0107	2019	Skill development (Students will gain Functional knowledge with hands-on; on smart grid system operation)
Distribution System Engineering	MTPS0108	2019	Skill development (Students will gain Functional knowledge on power distribution system)
Power System Security	MTPS0109	2019	Skill development (Students will gain Functional knowledge with hands-on; on system security in power system)
Digital Signal Processing Applications in Power System Protection	MTPS0110	2019	Skill development (Students will gain Functional knowledge with hands-on; of DSP power system protection)





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Industry Internship and Project – II/Dissertation	MTIP2102	2019	employability (Student will learn on power system operation & energy audit process with on the job training which will lead them to placement in power & energy company)
Basic Engineering Chemistry	BTPH1101	2019	Skill Development (Demonstrate knowledge of fundamentals of chemistry and application in context of biomolecules)
Basic Electrical Engineering	FCEL0101	2019	Skill Development (Demonstrate knowledge of basics of electrical engineering and introduction to industrial electrical equipments)
Basic Electrical Engineering Laboratory	FCEL0202	2019	Skill Development (Enhancing students skill on electrical equipments such as motor, transformers etc)
Comprehensive and communication skills in English	ASEL1101	2019	Entrepreneurship (Develop academic and social English competencies in speaking)
Basic Concepts of Ayurveda, Human Anatomy & Physiology	CCAY0101	2019	Skill (Students will learn about different organ systems of Human body and get introduction to ayurvedic system of medicine)
Basic Engineering Chemistry Laboratory	BTPH1201	2019	Skill Development (Demonstrate knowledge of fundamentals of chemistry and application in context of biomolecules)
Workshop Practice	BTME0401	2019	Employability and skill development (Analyze the different applications of different shops.)
Environmental Science	FCAG0101	2019	Entrepreneurship (Understand different resources such as mineral resources, food resources, water resource, energy resources, natural resources and land resources)



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Mathematics Bridge Course	BTPH1102	2019	Skill Development (Solve simple mathematical problems wrt vector algebra, trigonometry etc. for application in their field of engineering.)
Pharmacognosy-Concepts of Authenticity & Analytical Chemistry	CCAY0402	2019	Employability (Learn about different herbal drug and their application which improves their employability)
Basic Electronics Engineering	FCEC0101	2019	Skill Development and Employability (Application of OPAMP in various purposes)
Basic Electronics Laboratory	FCEC0201	2019	Skill Development and Employability (Application of OPAMP in various purposes)
Engineering Physics	FCPH0102	2019	Skill Development (Delivered content on magnetism and its effect on electricity which is essential for maintenance and making motors, industrial equipments etc.)
Physics Laboratory	FCPH0202	2019	Skill Development (Hands on experience with LCR circuits, motors, phase calculations which is essential for maintenance and making motors, industrial equipments etc.)
Engineering Drawing	FCME0202	2019	Employability and skill development (Draw orthographic projection of solids like cylinders, cones, prisms and pyramids including sections.)
Automation and Mechatronics	DEME0401	2019	Skill Development and Employability (the importance of maintenance of structures, types and properties of repair materials etc)
Heat & Mass Transfer	BTME0405	2018	Skill development (understand the principles of heat conduction



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			and convection, analyze the mathematical and practical aspects of heat exchangers)
Basic Electrical Engineering	BTEE0401	2018	Employability and skill development (Formulate and solve complex AC, DC circuits, know the requirement of transformers, explain electric power economics and energy management)
Refrigeration & Air-conditioning	BTME0406	2018	Employability and skill development (effect of different components on the refrigerating machines, different refrigerants and refrigeration equipments, able to designing of air-conditioning system and estimation of air-conditioning load)
Dairy Engineering	BTAE0401	2018	Employability (Completing this course students can get job in dairy industry as dairy engineers or they can start their own milk processing startup).
Fat Rich Dairy Products	BTDT0407	2018	Employability and entrepreneurship (After completing this course students can get job in dairy industry in production department).
Microbiology of Dairy Products	BTDT0408	2018	Skill development and Employability (Students can go for higher studies (m.Tach and PhD) or can get job in quality control lab in dairy industry as a dairy microbiologist)
Human Nutrition	BTBS0402	2018	Skill development (Get the basic idea of milk and milk product nutrition, digestion, toxicants etc.)



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Starter Cultures and Fermented Milk Products	BTDT0409	2018	Skill development and higher studies (Being the starter culture market has shown consistent growth over the years, students can move to higher studies and prefer dairy starter culture research as well as get appointed to related jobs in dairy industries).
Condensed & Dried Milks	BTAE0403	2018	Entrepreneurship and employability (The course leads to the gateway of industrial openings related to manufacturing of condensed and dried milk power).
Quality and Safety Monitoring in Dairy Industry	BTDT0410	2018	Employability and skill development (Being a research cum industrial based course, a student can opt for different types of jobs such as Quality Control Executive, Quality Analyst, Quality Assurance Supervisor as well as enhance their career in Quality Management in dairy plants).
Ice-cream & Frozen Deserts	BTDT0411	2018	Entrepreneurship and employability (The course leads to the gateway of industrial openings related to manufacturing of ice-cream and frozen foods).
Chemistry of Dairy Products	BTDT0412	2018	Skill development and employability (The course is mainly based upon laboratory chemical analysis and creating specifications for milk and milk products which will help the students to do higher studies in chemistry).



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Fundamentals of Dairy Extension	BTAS0402	2018	Employability (student can be placed in different sectors of employment (cooperatives, banks, NGOs, dairy extension officers etc.)
Evolution of Management Thought	MGGM1101	2011	Application of Basic management principles- Skill development
Basic Communication Skills	MGGM1102	2011	Competence in oral, written, and visual communication: Employability, Use current technology Practicals - Skill development
Managerial Economics	MGGM1104	2014	Analysis of demand, supply, production, market; Application of different economic paradigms using Microeconomics concepts- Employability
Data analysis through Microsoft Excel	MGDA1109	2019	Data Analysis using software- Skill development
Accounting for Managers	MGFM1101	2011	Preparation of financial statement, preparation of cost sheet and financial analysis of financial statements: Employability & Entrepreneurship
Marketing Management	MGMK1101	2011	Interpretation complex marketing issues facing by a variety of enterprises: Employability & Entrepreneurship
Organizational Behaviour	MGGM1105	2011	Analyze and compare different models of Human Behaviour - Employability, Entrepreneurship
Management Information Systems	MGIT1202	2011	Utilize Management Information Systems in achieving business competitive advantage - Employability, Entrepreneurship & Skill development
Communication Perspective of Management	MGGM1206	2011	Write business proposals and reports- Employability,



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			Entrepreneurship & Skill development
Human Resource Management	MGHR1201	2011	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability & Entrepreneurship
Management & Market Research	MGGM1207	2011	Understand how marketing research fits into the broader strategic planning process, with reference to existing theories, concepts and models from within the program: Employability & Entrepreneurship Plan and undertake qualitative or quantitative Market Research and demonstrate the ability to appropriately analyze data to resolve marketing issues: Skill Development
Financial Management	MGFM1202	2011	Application of concepts of financial management, investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship
Production & Operations Management	MGOM1201	2011	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship
Economic Environment of Business	MGGM1208	2014	Analysis of economic policy and environment- Employability, Entrepreneurship
Aptitude and Career Enhancement-I (Practice )	MGGM1210	2014	Quatitative aptitude and logical analysis- Employability, Entrepreneurship & Skill development
Operation Research	MBDM1202	2017	Manage and enhance the sales force productivity and



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			performance:Employability & Entrepreneurship
Summer Internship Programme	MGGM1211	2011	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Strategic Management and Ethics	MGGM2318	2015	Conduct analysis of competitive situations of the enterprise and introduction of ethical practices - Employability, Entrepreneurship
Sales and Distribution Management (Elective)	MGMK2302	2011	Manage and enhance the sales force productivity and performance:Employability & Entrepreneurship
Logistics and Supply Chain Management	MGOM2302	2011	Analyzing the manufacturing operations of a firm- Employability, Entrepreneurship
Legal Environment for Enterprise	MGGM2315	2011	Analyze business issues and to understand broader legal issues- Employability, Entrepreneurship
Project Management	MGGM2316	2011	Describe a project life cycle, identify the resources needed for each stage, develop a project scope - Employability, Entrepreneurship
Live Project	MGEL2401	2015	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
GIS and Participatory Planning	MGEL2403	2015	Identification of the resources needed, develop a project scope utilizing GIS technology- Skill development
Rural Marketing	MGMK2312	2015	Able to successfully enter the rural market for promotion of his products and services:



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			Employability & Entrepreneurship;
Services Marketing	MGMK2313	2015	Able to deliver services successfully Employability & Entrepreneurship
Customer Relationship Management	MGMK2314	2015	Formulate and assess strategic, operational and tactical CRM decisions: Employability & Entrepreneurship
Consumer Behaviour	MGMK2305	2011	Detect the relevance of consumer behaviour to the entire marketing process, the nature and stages of consumers' decision making and the factors influencing consumers' choices: Employability & Entrepreneurship;
Brand Management and Marcomm	MGMK2306	2011	Appraise key issues in managing brand portfolio and making strategic branding decisions: Employability & Entrepreneurship
B2B Marketing	MGMK2307	2011	Effective B2B marketing strategy design and execution: Employability & Entrepreneurship;
Retail Management	MGMK2315	2011	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
International Marketing	MGMK2316	2015	Assess an organization's ability to enter and compete in international markets: Employability & Entrepreneurship;
Social Marketing	MGMK2310	2011	Develop a strategic plan for identifying opportunities for implementing social marketing in a company:Employability & Entrepreneurship





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Digital Marketing	MGMK2311	2015	Apply various concepts and importance of digital marketing - Visualize various application in diverse areas of sales & marketing - Employability & Entrepreneurship;
GIS for Marketing	MGMK2317	2015	Develop customer marketing applications such as acquisition, marketing, messaging, purchasing, and retention: Employability & Entrepreneurship;
Service Marketing Management	MGMK2318	2019	Design service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of customer service offerings: Employability & Entrepreneurship
Advanced Managerial Accounting	MGFM2310	2015	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship;
Financial Derivatives	MGFM2311	2015	Competent in derivative products such as forward, future, option & swap and to make on line trading on futures and options: Employability & Entrepreneurship;
Financial Institutions, Markets & Services	MGFM2305	2011	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;
Commercial Banking and ALM	MGFM2306	2011	Use techniques for Asset/Liability Management for smooth operation of the Bank. This will help in employability in Banking Sector - Employability & Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Insurance & Risk Management	MGFM2307	2011	Use techniques for identifying, measuring and managing the risk - Employability & Entrepreneurship
Security Analysis And Portfolio Management	MGFM2308	2011	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal & Financing(PAF)	MGFM2309	2014	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Corporate Restructuring	MGFM2312	2015	Use techniques of Financial Corporate valuation and Engineering - Employability & Entrepreneurship
Financial Planning and Wealth Management	MGFM2313	2015	Use methods to determine the ways of personal tax planning, retirement and estate planning for an individual and design a financial plan -Employability & Entrepreneurship
Current Asset Management	MGFM2314	2015	Evaluate comparative current asset management policies and their impact on the firm's profitability, liquidity, risk and operating flexibility: Employability & Entrepreneurship;
Financial Analytics	MGFM2315	2019	Able to work with large amounts of financial data without difficulty for analysing and interpreting the financial statements for various decision making purposes:



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Employability & Entrepreneurship;
Organization Change and Development	MGHR2305	2011	Bring out appropriate changes in the organization and becoming a change agent- Employability, Entrepreneurship
Knowledge Management	MGHR2308	2011	Critically apply theories and models to organizations for success- Employability, Entrepreneurship
Human Resource Planning and Sourcing	MGHR2312	2015	Development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes- Employability, Entrepreneurship
Training and Development	MGHR2311	2011	Assess, design and implement various methods, techniques and sources of training- Employability & Skill development
Leadership Development	MGHR2313	2015	Develop critical thinking skills and lead the organization- Employability, Entrepreneurship
Organization Structure and Design	MGHR2310	2014	Designing effective organizational structure keeping in view business strategies - Employability, Entrepreneurship
Rural Immersion Programme	MGRM2305	2015	Carry out participatory planning with the community, develop strategies for intervention - Employability & Skill development
Sustainable Livelihood System	MGRM2306	2015	Introduce and train people on alternative livelihood options- Employability, Entrepreneurship & Skill development
Public System Management	MGRM2307	2015	Comprehend and apply the basic principles of public administration model - Employability, Skill development



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Natural Resource Management	MGRM2309	2015	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve management objectives- Employability and Entrepreneurship
Social Entrepreneurship	MGRM2310	2015	Students will be able to establish social enterprises- Entrepreneurship
Gender and Development	MGRM2311	2015	Utilize the different tools and techniques for gender planning, analysis and evaluation in the development sector- Employability
Hospital Administration	MGHM2301	2017	Create policy and processes and execute decisions in compliance with the legal, regulatory and ethical considerations inherent in managing healthcare systems and organizations- Employability
Management Information Systems for Hospital	MGHM2302	2017	Analyze existing systems and design technology solutions appropriate to the hospital- Employability & Skill development
Management of Out-Patient Department	MGHM2303	2017	Deal the issues effectively in emergency services, can plan, organize and supervise the activities of Minor Operation Theatre, Manage treatments of referral & cross referral cases- Employability & Skill development
Risk and Disaster Management	MGHM2304	2017	Handle Security Management Effectively in Hospitals, Control and Prevent hospitals from getting infected, Plan and design fire protection in hospitals, Handel radioactive waste



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			collection and disposal in hospitals- Employability
Legal and Ethical Issues for Hospitals	MGHM2306	2017	Handle medico-legal issues effectively, Ensure appropriate patient relationship, Handle trade unions - Employability
Project Management in Health Care	MGHM2308	2017	Plan and implement health sector projects, Carry out feasibility analysis of health sector projects, Carry out demand analysis in health care sector- Employability
Marketing of Hospital Services	MGHM2309	2017	Handle challenges in hospital services marketing, Design new hospital services, Engage appropriate channels for hospital service marketing, Use marketing communication with technical knowledge- Employability, Entrepreneurship
Patient Care and Behaviour	MGHM2311	2017	Motivate patients and instrumental in shaping positive attitude towards hospital, Carry out audit on patient behaviors, Handle the role of hospital administrator effectively- Employability & Skill development
Web Traffic Generation	MBDM2201	2017	Increase traffic in any website, Popularizing websites- Employability, Entrepreneurship & Skill development
Link Building & e-WoM	MBDM2202	2017	Increase links through web, Building relationships through the web- Employability, Entrepreneurship & Skill development
Social Media Marketing	MBDM2203	2017	Develop effective social media marketing strategies for various types of industries and



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			businesses- Employability, Entrepreneurship
Branded Content and the Future of Media	MBDM2204	2017	Develop and market branded contents, Employability,
Ideas, Brands and Business	MBDM2205	2017	Make strategic branding decisions- Employability, Entrepreneurship
Brand Planning and Consumer Insights	MBDM2206	2017	Design and execute intelligent and innovative research studies to scan the environment, identify consumer insights, and use those insights to manage the brand- Employability, Entrepreneurship
Digital Strategies and Planning	MBDM2207	2017	Create a digital marketing plan and budget; identify suitable measures to set objectives and evaluate digital marketing - Employability & Entrepreneurship;
Mobile & E-Mail Marketing	MBDM2208	2017	Ability for technology adoption, various devices, changing nature of services and ecosystems - Skill development
Search Engine Optimization	MBDM2209	2017	Able to improve sales volume through search engine optimization - Skill development
Search Engine Marketing	MBDM2210	2017	Able to improve sales volume through Google AdWords and other elements of Search Ad - Skill development
Technology of e-Commerce	MBDM2211	2017	Able to integrate distributed database technologies within the internet architecture - Skill development
Online Reputation Management	MBDM2212	2017	Ability to give a structure of quality websites and portals - Skill development



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Affiliate Marketing	MBDM2213	2017	Able to structure quality web designing for affiliate marketing - Skill development
Web Content Writing	MBDM2214	2017	Ability to develop creativity and creating quality content- Skill development
Power Plant System	MGPM2302	2018	Plan and administer policies for power plants, Handle usages of equipment in power plants effective, Carry out job designing appropriately- Employability,
Project Planning, Analysis and Management	MGPM2303	2018	Carryout feasibility analysis of projects (Market, Technical, Financial and Economic), design project plan, Apply the risk management plan and analyze the role of stakeholders- Employability, Entrepreneurship
Integrated Energy Management & Power Planning	MGPM2305	2018	Develop plan for sustainable use of alternative sources of energy, Plan for generation and sharing of load, Central power system and grid plan - Employability
Financing Energy Sector Projects	MGPM2306	2018	Carry out feasibility study of projects for micro, small and medium enterprises, Handle legal issues effectively, Handle project financing- Employability, Entrepreneurship
Power Pricing & Power Purchase Agreement	MGPM2307	2018	Develop agreements for power purchase, Calculate capital cost operational cost, development cost- Employability, Entrepreneurship
Renewable Energy for a Sustainable Future	MGPM2310	2018	Plan for utilization of renewable energy, Design facilities for solar, wind and tidal energy- Employability, Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Risk Hazard and Environment	MGPM2311	2018	Establish first aid facilities, Plan for risk reduction, Develop hazardous waste management - Employability
Energy Conservation & Update	MGPM2312	2018	Establish first aid facilities, Plan for risk reduction, Develop hazardous waste management - Employability
Maintenance Management and Inventory Control	MGPM2313	2018	Handle inventory properly, Job designing, Manage production maintenance- Employability,
Service Operations Management	MGOM2303	2011	Carry out optimal inventory management- Employability, Entrepreneurship
Total Quality Management	MGOM2311	2011	Use statistical approach for quality control, ISO and QS certification process- Employability, Entrepreneurship & Skill development
Technology Management	MGOM2312	2015	Technology adoption and technology transfer- Employability, Entrepreneurship
Purchase and Materials Management	MGOM2305	2011	Develop materials requirement planning technique, handle issues related to overstocking and under stocking- Employability, Entrepreneurship
Environment & Industrial Safety	MGOM2306	2011	Formulate or design a system, process, procedure, or program to meet desired safety needs- Employability, Entrepreneurship
Business Process Re-engineering & Simulation	MGOM2307	2011	Model and develop improved business processes that require IT and organizational redesign- Skill development
Enterprise Resource Planning	MGOM2308	2011	Develop Generic Model of ERP and Implementation of General ERP Methodology- Employability,





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Entrepreneurship & Skill development
Production Planning and Inventory Control	MGOM2309	2018	Develop Production planning and handel control issues in both service and manufacturing industries- Employability, Entrepreneurship
Supply Chain Modelling	MGOM2310	2011	Value creation and revamping supply chains for becoming competitive in the market- Employability, Entrepreneurship
Data analysis through Microsoft Excel	MGDA1109	2019	Data Analysis using software- Skill development
Data base & Data warehouse	MGDA1110	2019	Able to make better business decisions by using Data warehousing business intelligence tool- Skill Development
Information System in Business	MGDA1210	2019	Analyze actions affecting the business as well as prepare cost estimates and forecasts- Employability & Entrepreneurship
Data Visualisation with Power BI and Tableau	MGDA1216	2019	Able to represent data visualization for business analytics- Skill development
Python	MGDA1217	2019	Can use Python for data analysis and visualization.- Skill Development
R Programming	MGDA1218	2019	Use R programming for statistical computing and graphics to clean, analyze, and graph data. - Skill Development
Artificial Intelligence, Machine learning & Unstructured Data analytics	MGDA1221	2019	Make data-driven recommendations and decisions based on only the input data- Skill Development
Selling and Reporting Skills of Pharmaceutical Product	MGPH1203	2019	Handle pharmaceutical marketing efficiently-Employability, Entrepreneurship



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Pharmaceutical Brand Management	MGPH2101	2019	Development of brand of a product- Employability, Entrepreneurship
Pharmaceutical Sales and Distribution Management	MGPH2102	2019	Increase pharmaceutical sales, develop promotional strategy,- Employability, Entrepreneurship
Drug Regulatory Affairs & Intellectual Property Rights	MGPH2104	2019	Able to manufacture and sale of pharmaceuticals-Employability, Entrepreneurship
Financial Reporting & Analysis	MGPH2106	2019	Analyze financial statements-Employability
Marketing Management	MGMK1101	2018	Interpretation complex marketing issues facing by a variety of enterprises: Employability & Entrepreneurship
Sustainable Entrepreneurship Development	MGDM0103	2018	To promote sustainable enterprises- Employability, Entrepreneurship
Project Management	MGAM0102	2018	Describe a project life cycle, identify the resources needed for each stage, develop a project scope - Employability, Entrepreneurship
Summer Internship	MGDM0801	2018	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship
Development and Globalisation	MGDM0107	2018	Analyzing the manufacturing operations of a firm, dealing with fundamental issues of development and globalization - Employability
Research Methods	MGAM0103	2018	Application of modern analytical tools and techniques for management decision making, research designing, sampling, analysis of data, hypothesis formulation and testing- Employability, Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Gender Issues in Development	MGDM0109	2018	Adopt different tools and techniques for gender planning, analysis and evaluation in the development sector- Employability
Development Internship	MGDM0802	2017	Skills to appraise concepts at real time situations-Skill development
Development Action Research Thesis	MGDM0301	2018	To develop writing and analytical skills- Skill development
Accounting for Managers	MGFA1101	2018	Preparation of financial statement, preparation of cost sheet and financial analysis of financial statements: Employability & Entrepreneurship
Agriculture Action Research Thesis	MGAM0301	2018	To develop writing and analytical skills- Skill development
Micro and Macro Economics	MGDM 1104	2014	Application of different economic paradigms using Microeconomics concepts- Employability
IT Enabled Communication	MGDM 1103	2014	Use IT tools for effective communication - Skill development
Financial Inclusion and Micro-finance	MGDM 2303	2014	To appraise the scenario of financial inclusion in the country , acquire skills to operate in Micro Finance sector - Employability, Entrepreneurship
Economic Environment for Agriculture	MGAM1204	2017	Developing aggregate capacity plans and agricultural policies for sustainable agricultural development, risk management strategies and MPS in operation environments- Employability
ICT in Agriculture	MGAM1102	2017	Applications of information & Community technology in various fields of agriculture and promoting the applications of ICT



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			in agriculture - Employability, Entrepreneurship
Agricultural Marketing	MGAM1203	2017	Effectively evaluate the challenges and prospects of agri marketing system, : Employability & Entrepreneurship
Natural Resource Management	MGDM 2406	2014	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve management objectives- Employability and Entrepreneurship
Post-harvest and Processing Management (Theme Based)	MGAM2108	2017	Carry out Interdisciplinary approach to post-harvest management including biology, agricultural sciences, and management, Employability,
Live-stock management (Theme Based)	MGAM2203	2017	Manage animals for food and fiber production: Employability & Entrepreneurship
Commodity market and trading (Theme Based)	MGAM2209	2017	Develop plans to minimize risk through trade strategies: Employability, Entrepreneurship
Agricultural Internship	MGAM0802	2014	To apply and evaluate the learned concepts, theories at real time situations- Skill development
Basic Financial Accounting	BBAR1102	2015	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Management Principles and Applications	BBAR1103	2016	Application of Basic management principles in organizations- Employability
Micro Economics	BBAR1104	2015	Utilize micro economic concepts and techniques to take business decisions Employability & Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Computer application in Business	BBAR1105	2016	Identify and utilize appropriate technology for effective decision-making and improved performance- Skill Development
Organisational Behaviour	BBAR1202	2015	Analyze and compare different models of Human Behaviour - Employability, Entrepreneurship
Business Statistics	BBAR1203	2016	Use statistical tools for managerial decision-making- Employability, Entrepreneurship
Macro Economics	BBAR1204	2015	Apply macroeconomic perspective to solve business issues and take appropriate policy decision-Employability & Entrepreneurship
MS EXCEL	BBAR1205	2016	Use Microsoft Excel for data analysis-Skill Development
Human Resource Management	BBAR2101	2015	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability & Entrepreneurship
Principles of Marketing	BBAR2102	2016	Solving marketing issues faced by a variety of enterprises : Employability & Entrepreneurship;
Cost & Management Accounting	BBAR2103	2016	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship
Production & Operation Management	BBAR2105	2015	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship
Research Methodology	BBAR2201	2015	Application of modern analytical tools and techniques for management decision making, research designing, sampling, analysis of data, hypothesis



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			formulation and testing- Employability, Entrepreneurship
Operation Research	BBAR2202	2015	Develop a report that describes the model and the solving technique, analyze the results and propose recommendations in language understandable to the decision-making processes in Management - Employability, Entrepreneurship
Financial Management	BBAR2203	2016	Application of concepts of financial management, investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship
Tally and ERP	BBAR2205	2016	Preparation of financial statement of different types of organizations with Tally: Skill development
Financial Institutions and Markets	BBAR3101	2016	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;
Business Law for Managers	BBAR3102	2016	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters- Employability & Entrepreneurship
Summer Internship	BBAR3103	2015	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Strategic Management	BBAR3204	2019	Conduct analysis of competitive situations of the enterprise they would be employed with, or the enterprise they would set up: Employability & Entrepreneurship



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Entrepreneurship Development	BBAR3202	2016	Develop business plan, assess the various opportunities and constraints for new business, develop entrepreneurial traits- Entrepreneurship
SPSS	BBAR3203	2016	Use SPSS for analyzing data and define a variety of statistical variables-Skill Development
International Finance	BBAF3101	2016	Use techniques for managing the financial issues in international environment - Employability
Investment Banking & Financial Services	BBAF3102	2016	Use techniques for raising funds from capital market and from different sources- Employability
Investment Analysis & Portfolio Management	BBAF3103	2016	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal	BBAF3104	2016	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Business Analysis & Valuation	BBAF3105	2016	Analyze and interpret the financial statements for various decision making purposes: Employability & Entrepreneurship
Strategic Corporate Finance	BBAF3107	2016	Use valuation principles, tools & techniques, the link between valuation and corporate finance, management buy-outs valuing real assets in the presence of risk: tracking portfolios and real asset valuation- Employability



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Research Project	BBAF3108	2016	Identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship
Consumer Behaviour	BBAM3101	2016	Apply the concepts and theories covered in the course to devise effective solutions: Skill Development
Advertising & Brand Management	BBAM3103	2016	Appraise key issues in managing brand portfolio and making strategic branding and advertising decisions: Employability & Entrepreneurship
Retail Management	BBAM3104	2016	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
Distribution & Supply Chain Management	BBAM3105	2016	Design and implement distribution channel strategy: Employability, Entrepreneurship
Marketing of Services	BBAM3106	2016	Design service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of customer service offerings: Employability
International Marketing	BBAM3107	2016	Assess an organization's ability to enter and compete in international markets: Employability & Entrepreneurship;
Research Project	BBAM3108	2016	Competent with identification of research problems, collection of data and analysis of data : Employability & Entrepreneurship
Hospitality management	BBAM3109	2016	Create policy and processes and execute decisions in compliance with the legal, regulatory and ethical considerations inherent in





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			managing organizations in hospitality sector- Employability
HRD : Systems & Strategies	BBAH3101	2016	Prepare strategies for development of human resources in organizations- Employability
Training & Development	BBAH3102	2016	Prepare training calander and training contents by analysing the need-Employability
Management of Industrial Relations	BBAH3103	2016	Plan policies towards Labour Welfare and maintain sound Industrial Relations-Employability, Entrepreneurship
Performance & Compensation Managemen	BBAH3104	2016	Fixing performance standards and performance indicators that reflect the employees range of responsibilities, Designing a pay structure- Employability, Entrepreneurship
Counselling & Negotiation Skills for Managers	BBAH3105	2016	Negotiation with business enterprises- Employability, Entrepreneurship
Cross Cultural HRM	BBAH3106	2016	Diversity management respecting the culture of employees- Employability, Entrepreneurship
Talent & Knowledge Management	BBAH3107	2016	Develop knowledge management process in the organization- Employability
Research Project	BBAH3108	2016	Knowledge and skills in preparing a project report- Employability, Entrepreneurship
International Trade Policy & Strategy	BBAB3101	2016	Analyze new opportunities in international trade, global supply and value chains, investment agreements, trade in services, competition policy and regional economic integration- Employability



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Global Business Environment	BBAB3102	2016	Analyze the key decisions that multinational firms make in relation to the choice of markets and entry strategies- Employability
International Accounting & Reporting System	BBAB3105	2016	Prepare the mandatory financial statements, according to the IFRS- Employability
Multinational Business Finance	BBAB3106	2016	Can handle – Problems and issues in foreign investment, Manage payment settlements- Employability
Research Project	BBAB3108	2016	Project writing skills and utilization of research methodologies in a project- Employability, Entrepreneurship
Financial Accounting I	BCFA1102	2017	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Business Mathematics	BBAR1106	2017	Data analysis using mathematical function- Employability & Entrepreneurship
Business Economics	BCFA1104	2017	Apply macroeconomic perspective to solve business problems- Employability & Entrepreneurship
Business Law	BCOR1202	2017	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters- Employability & Entrepreneurship
Business Environment	BBAR1206	2017	Analyze business environment and take appropriate decision Employability and Entrepreneurship
Financial Accounting II	BCFA1207	2017	Preparation and use of financial statement of different types of



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			organizations: Employability & Entrepreneurship
Indirect Taxes / GST	BBAR2107	2017	Calculate and file GST, levy and collection of tax, input tax credit, IGST act GSTN etc.: Employability & Entrepreneurship
Tally.ERP 9	BBAR2109	2017	Preparation of financial statement of different types of organizations with Tally: Skill development
Cost & Management Accounting	BBAR2110	2017	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship
Corporate Law	BBAR2108	2017	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters- Employability & Entrepreneurship
E-Commerce	BBAR2209	2017	carry out entrepreneurial activities electronically (E-commerce) Employability
Advanced Excel	BBAR2208	2017	Utilize advance features of Ms-excel in the day to day activities of the business,alsofor improved decesion making and performance- Skill development
Auditing	BBAR2210	2017	Identify the areas of fraud and errors in the accounts and take corrective actions while presenting the audit report: Employability
Business Ethics & Governance	BBAR2206	2017	Inroduction of ethical practices in business - Employability, Entrepreneurship
Corporate Accounting	BBAR3109	2017	Develop Accounting procedures used in corporates and the strategies involved in the corporate decisions.: Employability & Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Financial Market Operation	BBAR3110	2017	Analyze Money market, Capital market, its instruments and apply the same in organizations- Employability
On Job Internship-I	BBAR3111	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
On Job Internship-II	BBAR3211	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Communication Research Methods	MAMC1101	2018	Analyze data with techniques of social science, media research - Skill development
Introduction to Print & Electronic Media	MAMC1102	2018	Competence in Print and Electronic Media and can work in Print and Electronic Media industry-Skill development and Employability
Society, Media and Communication	MAMC0501	2018	Skill development and Entrepreneurship; Competence on the media business, its functioning and generate idea on inter relationship between media and society.
Cultural Studies	MAMC0903	2016	Skill development; Competence in the process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures
Advanced Digital Media	MAMC1103	2018	Students will be able to Competence skills in modern media and will be able to analyze advertising, Marketing, social networking and using social media for different purposes. -



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Skill development and Employability
Film studies	MAMC1105	2018	Students will be able to develop skills in different aspects of Film and will be able to analyze film- Employability
Advertising and Public Relations	MAMC1106	2018	After studying this paper student will be able to employ Public Relations and Advertising industry and its functioning.-Employability
Thesis	MAMC0301	2018	Employability: Analysing Media issues and analysis of media content.
Animation	MCDE0601	2016	Ability to create quality animation performance through a creative and professional portfolio using principles of animation. Will help in Employability and Skill development
Radio Jockeying	MCDE0602	2016	Skill development in aggregate capacity to develop the skills of a Radio Jockey.
TV Anchoring	MCDE0603	2016	Skill development in the aggregate capacity to develop the skills of a Television Anchor.
Fashion Photography	MCDE0604	2016	Skill development: Developing competency for professional fashion photography.
Camera Operator	MCDE0605	2018	Skills development and Employability in camera handling and planning and producing programs for television and Photography.
Video Editor	MCDE0606	2018	Skill development in television field and its functioning. Build the ability to develop and demonstrate strategic plans and planning methods in television content production.



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Web Content Development	MCDE0607	2016	Skill development and Entrepreneurship: Competence in Content development for web site or digital media.
Sound Engineer	MCDE0608	2018	Skill development on sound editing with different software.
Adobe tools and Illustrations	MCDE0609	2018	Work on Adobe Illustrator in the beginner level, and on graphics designing. Skill Development and Employability
Communication in History and History of Communication	MCFC0501	2016	Utilise the skill in communication of the students- Skill development and students can able to work in new communication technologies at different points of time- Employability/
Introduction to Communication Theory	MCCC0101	2016	Use the Communication skill and able to differentiate between different forms and types of communication and Competence of audience research traditions.- Skill development
Introduction to Print and Electronic Media	MCFC1101	2018	Competence in Print and Electronic Media and can work in Print and Electronic Media industry-Skill development
Introduction to Social Media	MCCC1101	2018	Student will able to get employment on Social media- Employability
Media, Communication and Culture	MCFC 0902	2016	Enhance the skill of student can analyze process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures- Skill development
Electronic Media	MCCC1102	2018	Students can develop their skills in in TV/Radio/ Digital media platforms.



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Development Communication	MCCC0904	2016	Students will make strategy designing and campaign designing skill and able to develop contents for development purposes.-Skill development
Intercultural Communication	MCCC0905	2016	Competence on intercultural communication and culture influences the communication process across societies and the role of culture to influence nonverbal communication-Skill development
Gender and Communication	MCCC0906	2016	Students will enhance their skill and able to raise gender issues and role of media in it-Skill development
Film Studies	MCCC1103	2018	Students will be able to develop skills in different aspects of Film and will be able to analyze film as an art. -Skill development, Employability
PR and Advertising	MCCC1104	2018	After studying this paper student will be able to employ Public Relations and Advertising industry and its functioning- Employability and Skill Development
Digital Media	MCCC1105	2018	Students will be able to develop skills in new media and will be able to analyze advertising, Marketing, social networking and using social media for different purposes. Employability and Entrepreneurship
Final Project	MCCC0301	2016	Skill development;Analysing Media issues and analysis of media content.
Mathematical Physics	MSCP1101	2017	Skill - Tensors: Tensor analysis, Pseudo-tensors, Dual tensors. Gamma function and Beta



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Function, Fourier Transforms: Fourier Transforms, Properties of Fourier Transforms, Convolution Theorem. Partial differential equations (PDEs): Second order PDEs, Classification of PDEs, Laplace equation, Fourier's Heat flow equation, Wave equation. Green's Functions: One-dimensional problems, Qualitative idea of Green's functions in 2- and 3-dimensions.
Classical Mechanics	MSCP1102	2017	Employability - Variational principle, Central force problem, Canonical transformations, Poisson Bracket, Hamiltonian-Jacobi Theory and transition to Quantum mechanics, Small Oscillations.
Quantum Physics I	MSCP1103	2017	Employability - Angular Momentum, The Hydrogen Atom, Perturbation Theory.
Computational Physics	MSCP1203	2017	Skill - Learning several numerical differentiation and integral methods to solve physical problems. Problems are solved using programming.
Electronics Devices Lab	MSCP1205	2017	Skill - Experiments done on electronic devices like Junction Diodes, Zener Diode, BJT, FET, OPAMP, Rectifiers circuits etc.
Quantum Physics II	MSCP2303	2017	Employability - Variational Methods, WKB Approximation, Time Dependent Perturbation Theory, Scattering Theory.
Introduction to Research	MSRM5101	2017	Skill - Research Process, Data Analysis, Building Mathematical





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			Models, Documentation and Presentation.
Advanced Physical Chemistry I	MSCC1101	2019	Employability-Chemical Dynamics ,Adsorption,Electrochemistry, Enterperneurship-Micelles,
Polymer Chemistry	MSCC1104	2019	Employability-Kinetics of melting, crystal morphology, free volume, distribution of molecular size, stoichiometric imbalance. X-ray diffraction study, Microscopy,Price - Alfrey equation, Flory - Huggins theory, polymer fractionation, Mark - Houwink - Sakurada equation, diffusion coefficient and friction factor,Power Law for pseudo plastic liquids, effect of shearing forces, segmental friction factor, Bueche theory. Skill-Thermal analysis and physical testing,Polymer Processing- I&II,Elastic deformation, shear modulus and compliances, Maxwell model, Voigt model, dynamic viscoelasticity, molecular theory for viscoelasticity - Rouse model,Mechanical properties
Advanced Inorganic Chemistry III	MSCC2301	2019	Skill-Instrumental Method of Analysis,Raman Spectroscopy,Homogeneous and Heterogeneous Catalysis,Displacement and Isomerization reaction. Hydrogenation, Hydroformylation, Wacker (Smidt) Process, Olefin Metathesis, Fischer-Tropsch synthesis, Zeigler-Natta polymerization, Water gas



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			reaction Employability- Mechanism of Substitution Reactions, Electron Transfer Reactions
Seminar	MSCS2401	2019	Skill-To creat a research mind in students
Chemistry Laboratory 4	MSCC2403	2019	Skill-Instrumental Methods of Analysis Lab
Biovia project	MSBV0301	2019	Skill -Students will know simulation,design of a drug molecules/materials and it's characteristic analysis by using biovia softawre
MATHEMATICAL MODELLING	MSMA 4701	2017	Skill- Mathematical modelling through ordinary differential equations of first order. Employability - Mathematical modelling through the systems of ordinary differential equations
DIFFERENTIAL GEOMETRY	MSMA 4705	2017	Employability - Fundamental Triads, Curves, Serret-Frenet Formulae, Curvatures and torsion of a curve at a point.
ADVANCED CALCULUS	MSMA 4802	2017	Skill- Derivatives of functions on $R^n$ , Differentiation of composite functions Employability - Set functions, Transformations and Multiple integrals
FLUID DYNAMICS – I	MSMA 4804	2017	Employability - Fundamental equations of the flow of viscous compressible fluids
ADVANCED NUMERICAL ANALYSIS	MSMA 5202	2017	Employability -Eigen values and Eigen Vectors: Basic power method, Rayleigh Quotient, Shifted power method



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STATICS & DYNAMICS	DEHD0101	2017	Skill- To develop in students the ability to analyze dynamics problems in a simple and logical manner through the application of several basic principles.
FORTRAN-95 PROGRAMME	BSMA2002	2017	skill- Learn fundamental concepts of FORTRAN-95 and able to translate scientific and engineering problems into machine understandable.
Microbiology	MSBO1101	2017	Higher studies/Employability- Students learn on preparation and sterilization of media, plating, slanting of media, isolation of bacteria in pure culture
Plant Diversity	MSBO1102	2017	Higher studies/Skill-Pursue higher studies and enhance their skill on culture, maintenance of cyanobacteria, use of cyanobacteria as biofertilizer, algae in the environment, agriculture, biotechnology and industry
Cell Biology	MSBO1103	2017	Employability-Perform comparative karyotypic analysis, techniques like extraction and separation of DNA by gel electrophoresis, squashing technique for the study of different stages of mitosis and meiosis
Plant Ecology	MSBO1104	2017	Employability-Practical on biodiversity measurement by different indices, calculation and problem solving.
Botany Laboratory-I	MSBO1105	2017	Employability/Skill-Acquire general idea on instruments used in microbiology laboratory



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Genetics and Molecular Biology	MSBO1201	2017	Higher studies/Skill- Students can isolate plant DNA & quantification of extracted DNA by spectrophotometric method, plasmid DNA isolation and techniques and DNA sequencing.
Biostatistics and Instrumentation	MSBO1203	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy and data analysis using chi square test, student t test etc.
Environmental Pollution and Management	MSBO1204	2017	Employability-Testing water and soil quality, practicals on Phytoremediation and pollution management.
Systematics and Pathology	MSBO2301	2017	Employability-Identification of plants, plant diseases and control measures
Natural Resource Management and Utilization	MSBO2302	2017	Skill/ Employability- Bioresource management.
Embryology and Anatomy	MSBO2303	2017	Skill-Gain practical knowledge on anatomical identifications of plant parts
Techniques of Tissue Culture	MSBO2304	2017	Entrepreneurship- Practicle on Production of synthetic seeds, Techniques of surface sterilization and plant regeneration via organ culture
Scientific visit	MSBP2301	2017	Skill- Observe and get knowledge on various fields of research in science in different scientific organization.
Plant Biotechnology and Bioinformatics	MSBO2401	2017	Entrepreneurship/Employability- Practicle on Production of synthetic seeds, Techniques of surface sterilization and plant regeneration via organ culture



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Eco toxicology & Waste Management	MSBO2402	2017	Employability-Practicle on E-waste management, smart waste management; landfilling-biological processes, leachate control and treatment, site management
Microbial Technology &Physiology	MSBO2403	2017	Employability-Perform fermentation technology, Food processing technology
Project/Dissertation	MSBP2401	2017	Employability- Problem analysis by opting the project work, findings and presentation
Seminar	MSBS2401	2017	Skill-Build up confidence to present their research paper in Conferences/Seminars
Bio-fertilizer	MSLS1001	2017	Skill- Isolation of Rhizobium or Aztobacter from plant root nodules& rhizosphere, Identification of soil cyanobacteria from different soil samples. Preparation of culture media. Crop development using azolla as abiofertiliser.
Tools and Techniques in Biosciences	MSLS1002	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy etc.
Medical Diagnostics	MSLS1005	2017	Skill-Perform experiment on stool ,sputum and semen ,urine, blood analysis and and problem solution.
Biosystematics and Taxonomy	MSZO1102	2019	Employability - . History of Classification Trends in biosystematics: Chemotaxonomy cytotaxonomy and molecular taxonomy, ,Taxonomic procedures: Taxonomic collections, preservation,



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			curetting, process of identification. Taxonomic keys, different types of keys, their merits and demerits. Taxonomic categories. Evaluation of biodiversity indices Evaluation of Shannon. Weiner Index, International code of Zoological Nomenclature (ICZN): , Hardy-Weinberg law of genetic equilibrium, . Trends in Evolution Molecular Evolution Gene evolution, Evolution of gene families. Assessment of molecular variation
Cell & Molecular Biology	MSZO1103	2019	Employability - CellSignaling: Signalling molecules and signal receptors, second messengers, G protein coupled receptors, activation of gene transcription by G protein coupled receptors, Lampbrush chromosome, Polytene chromosome, telocentric chromosome, Interphase chromatin, Euchromatin and Heterochromatin, karyotype and its significance Cell cycle: Molecular models and events. Regulators and checkpoints in cell cycle, DNA synthesis by reverse transcription, DNA Repair: mismatch repair, base excision, nucleotide excision, direct repair, SOS repair, Prokaryotic and eukaryotic translation.
Biochemistry	MSZO1104	2019	Employability - Carbohydrate metabolism: Glycolysis, TCA cycle, pentose-phosphate pathway. Gluconeogenesis, glycogen



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			<p>metabolism, regulation of carbohydrate metabolism, Oxidative phosphorylation, electron transport and ATP synthesis, Enzymes: General properties, nomenclature and classification, extraction and assay Michaelis-Menten kinetics and its significance, Brigg's-Halden modification, determination of Vmax and Km, Mechanism of enzyme action: general acid-base catalysis, covalent catalysis, metal catalysis Mechanism of action of RNase, Lysozyme and Chymotrypsin, Coenzymes and vitamins, Enzyme inhibition: competitive, non-competitive inhibition, determination of Ki, allosteric regulation, covalent modification</p>
Microbiology	MSZO1202	2019	<p>Skill - General features of Archaea, Structure, Nutrition and Reproduction of Eubacteria, Genetic recombination in bacteria (Transformation, Conjugation and Transduction), General features and pathogenicity of mycoplasma, Ricktsia and Spirochaetes. Plant virus- TMV, structure, transmission, pathogenicity and replication Animal viruses - HIV, structure, transmission, pathogenicity and replication Treatment and prevention by anti-virals and vaccine,, Microbial toxins: types, mode of actions and pathogenicity. Bacterial toxins:</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Endo and exotoxins, fungal toxins: toxins of Aspergillum, Penicillium, Fusarium and Alternaria Algal toxins: cyanotoxins and dinotoxins. Chemotherapeutic agents: antibiotics and their mode of action; bacterial drugs (Penicillin, fluoroquinolones, tetracycline and aminoglycosides)
Genetics	MSZO1203	2019	Skill - Sex chromosomes, Chromosomal sex determination: XX-XY, XX-XO and ZZ-ZW systems, Compound sex chromosome, Meiotic behaviour of chromosomes: Primary & Secondary non-disjunction, Genic balance theory of sex determination, Sex determination in humans and Drosophila with special reference to SRY and sex lethal genes, Sex determination in plants with special reference to Melandrium, Linkage groups: Complete and incomplete linkage ,Crossing over: Relationship between genetic and cytological crossing over, Relationship between crossing over and chaisma formation, molecular mechanism of crossing over, Mitotic Recombination, Recombination within gene. Structural and numerical alterations in chromosomes: Spontaneous and induced mutations, physical and chemical mutagens, chromosomal





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			aberrations, meiotic behavior of deletion, duplication, inversion and translocation. Euploids and aneuploids-classification, origin, induction, role of polyploidy in evolution and practical significance in crop improvement.
Immunology and Cancer Biology	MSZO1204	2019	Employability - Antigen – Antibody interaction (Antibody affinity, Radial and Double immune diffusion, Radioimmunoassay, ELISA- Indirect, Direct, Sandwich, ELISPOT, Competitive, Western blotting), Major histocompatibility complex and MHC restriction, Antigen Processing and Presentation, Generation of humoral and cell mediated immune response, BCR and TCR, generation of diversity, Complement system(Classical, Alternate and lectin pathway), Cytokines- Types and their role in immune regulation, Activation and regulation of B and T lymphocytes, Cell-mediated cytotoxicity and Antibody dependent cell mediated cytotoxicity, Hypersensitivity, Autoimmunity and Transplantation., Role of carcinogens and DNA repair in cancer
Zoology Laboratory-II	MSZO1205	2019	Skill - 1. Study of Museum Specimen 2. Study of anatomical slides 3. Detection of genetically disorder.



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			4. Estimation of gram +ve & -ve bacteria 5. Method & techniques of Bacterial culture 6. Study of immunological method 7. Study of different Parasitic forms. 8. Identification of parasitic forms 9. Antigen-Antibody Interaction (Haemoagglutination assay) 10. Identification of histological slides of lymphoid tissue 11. Immunization Protocol Demonstration of Thioglycolate induced peritonitis (cell infiltration and Inflammatory exudates) 12. Sessional work (Internal evaluate)
Physiology & Endocrinology	MSZO2301	2019	Skill - The heart: cardiac cycle & its regulation, pulmonary ventilation, respiratory surface & gas exchange, regulation of respiration, transport of gases, acid base balance. Excretory system: Urine formation, glomerular filtration, tubular function, renal Mechanism of concentrating & diluting urine General organization of central nervous system, Type of neuronal cells, Structure and function of neuron and glia, Chemical messengers, Hormones & their feedback systems, Mechanism of hormone action (fixed membrane- and mobile receptor mechanisms),



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>hormonal signalling, Pineal, Thymus &amp; gastrointestinal hormones, Anatomy, chemistry and biological action of adenohipophysial</p> <p>&amp; neurohipophysial hormones, Thyroid gland: Anatomy, biosynthesis &amp; function of thyroid hormones, Parathyroid gland: Anatomy &amp; function of parathyroid hormone.</p> <p>Endocrine pancreas: Anatomy, Biosynthesis, chemistry &amp; functions of pancreatic hormones, Adrenal gland:</p> <p>Anatomy, biosynthesis, functions of cortical &amp; medullary Hormones, Gonads: Anatomy and biological actions of gonadal hormones.</p>
Animal Biotechnology	MSZO2302	2019	<p>Skill - Animal cell and tissue culture technology: Cell culture laboratory design and equipment, Media and reagents,</p> <p>Different types of cell culture, application, scale up Biotechnology in improvement of livestock: Fish breeding,</p> <p>Androgenises and Gynogenesis in fish, Polyploidy in fish, Gene manipulation in aquaculture.</p> <p>Reproductive biotechnology: Cryopreservation and</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Cryoprotection and gamete banking, Assisted reproductive technology, In vitro fertilization and embryo transfer, ICSI, Sperm sexing, Vermi-culture and Vermicomposting for alternative sustainable agriculture. Soil fauna in soil formation &amp; fertility, Organic farming, Fish culture in flow through system and recirculation technology., Medical Biotechnology: Disease diagnostic markers, Gene therapy, Mechanism of gene therapy (antisense, virus mediated, immunotherapy, stem cell therapy), Drug delivery and targeting, Forensic Biotechnology,</p>
Ecotoxicology	MSZO2303	2019	<p>Employability - Productivity, Production and analysis. Recycling and reuse technologies for solid and liquid wastes and their role in environmental conservation. Remote sensing –basic concepts and applications of remote sensing techniques in environmental conservation. Environmental indicators and their role in environmental balance., , Vehicular exhaust pollution causes and remedies, Noise pollution, Toxicity testing principles, hazards, risks and their control methods., Food toxicants and their control methods, Public Health Hazards due to environmental disasters, Pesticides, types, nature and their</p>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			effects on environment, Important heavy metals and their role in environment, Agrochemical use and misuse, alternatives, Occupational Health Hazards and their Control
Zoology Laboratory-III	MSZO2305	2019	Skill - 1. Study of T.S,V.S,L.S of different mammalian organ 2. Detection of protein ,carbohydrate, lipid 3. Tissue culture 4. Gel Electrophoresis, Blotting 5. DATA interpreting 6. Estimation of toxic in Water Sample 7. Various tools & techniques 8. Estimation of DNA 9. Estimation of RNA 10. Separation of proteins, lipids & nucleic acids from tissues and their quantification 11. Isolation of genomic DNA from animal tissue/blood 12. Agarose gel electrophoresis of DNA 13. SDS PAGE (Demonstration) 14. Microscopy, Microtomy and Histological techniques. 15. Isolation of Mitochondria 16. WBC & RBC counting 17. Estimation of haemoglobin 18. Study of slides of endocrine glands 19. Chromatographic separation of biomolecules (Amino acids /sugars/lipid)
Developmental Biology	MSZO2401	2019	Skill - Primordial germ cells, Spermatogenesis, Oogenesis, Fertilization: Ultrastructure of



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			<p>sperm and ovum, biochemical aspects of fertilization, Cell-cell interaction and cell signalling during morphogenesis in early embryo.; Ageing: Mitochondrial control of ageing, insulin pathway control of ageing and possible relation to oxygen radicals, "Ageless" animals and environmental control of ageing, senescence &amp; cell death, Application of developmental biology in medicine and animal husbandry: In vitro fertilization and embryo transfer, embryo sexing, Gene expression and human disease: Inborn errors of nuclear RNA processing, inborn errors of translation, Teratogenesis: Environmental assaults on human development, teratogenic agents like alcohol, retinoic acid etc.</p>
Instrumentation & Biophysics	MSZO2402	2019	<p>Skill - Principle of operation and Instrumentation of Light, Fluorescence and Electron Microscopes Ultraviolet-visible absorption spectroscopy: Principle, Instrumentation and application, Fluorescence spectrophotometry: Principle, Instrumentation and application Radioisotope techniques: Nature of radioactivity, isotopes in biochemistry, measurement of radioactivity (carbon dating, Geiger-Muller counting and liquid scintillation counting).Principles of electrochemical techniques:</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Electrochemical cells and reactions, potentiometry and voltametry, the pH electrode. Centrifugation techniques: Basic principles of sedimentation, Types of centrifuges, Types of rotors, Methods in preparatory ultracentrifugation (differential and density gradient centrifugation). Chromatographic techniques: Principles of chromatography (Adsorption and Partition chromatography), planar chromatography (Paper and Thin-layer chromatography), Column chromatography (Gas chromatography, Gel exclusion/permeation chromatography, Ion exchange chromatography, Affinity chromatography, HPLC). Electrophoretic techniques: General principles, support media, electrophoresis of proteins (SDS-PAGE, native gels, gradient gels, isoelectric focusing gels and two dimensional gels), electrophoresis of nucleic acids (Agarose, pulse-field and sequencing gels). Blotting techniques (Southern, northern and western blotting). Biophysics: pH meter and measurement of Ph, Paper chromatography of amino acids, mixtures, identification of unknown amino acids and sugars, Gel filtration chromatography (Separation of</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			starch from glucose), Thin layer chromatography of amino acids and sugar, Serum electrophoresis, Determination of absorption coefficient and concentration of unknown solutions by calibration curve using a coloured solution, Absorption spectrum of a coloured solution (KMnO <sub>4</sub> ), Drawings using camera lucida
Environment and Pollution Management	MSZO2403	2019	Employability - biomass production, biotechnology for generation of biogas , Classification, formation, survey and land capability, soil structure and profile, soil reaction and buffering, Management and remediation of soil pollution, management and decontamination of saline, acidic, alkaline and mine waste soil, management of water logged, sandy and peat soil, degradation of organic pollutants in soil environment, ex situ and in situ bioremediation of contaminated soil: biopile, bioventing, biosparging and bio slurping., Pollutants in air: Major air pollutants; oxides of nitrogen, sulphur and carbon-sources, effects and environmental reactions, particulate air pollutants; methods of air pollution control, particle settling chamber, inertial separator, cyclone filters, electrostatic precipitators, gaseous pollutant





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			control-scrubber, absorbers, thermal decomposers, biological filters
Environmental Science	FCBS0101	2016	Employability - Environmental Science
Thermal Physics	BSPH1201	2016	Employability - Laws of Thermodynamics, Carnot engine & efficiency. Carnot's Theorem. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Applications of Second Law of thermodynamics, Entropy, Thermodynamic Potentials, Kinetic Theory of Gases, Molecular Collisions, Real Gases. Skill- Thermal Physics Lab
Elements of Modern Physics	BSPH2402	2017	Employability - Radioactivity, Fission and Fusion, Lasers. Skill - Elements of Modern Physics Lab
Experimental Techniques	BSPH3503	2017	Employability - Experiments are done on, Thermostat, ultrasonic transducer, Calibrate Semiconductor type temperature sensor (AD590, LM35, or LM75), Create vacuum in a small chamber using a mechanical (rotary) pump and measure the chamber pressure using a pressure gauge, design and study the Sample and Hold Circuit, Design and analyze the Clippers and Clampers circuits using junction diode etc enables them to become Lab Technician. Enterprenuership - Transducers &



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			industrial instrumentation, Digital Multimeter, Sensors Skill - Experimental Techniques Lab
Embedded systems- Introduction to Microcontroller	BSPH3504	2017	Employability - Embedded system, microprocessors, 8051 microcontroller, 8051 I/O port programming, Interfacing 8051 microcontroller to peripherals, Embedded system design and development. Enterprenuership - 8051 I/O port programming, Interfacing 8051 microcontroller to peripherals, Embedded system design and development. Skill - Embedded System: Introduction to Microcontrollers Lab.
Advanced Mathematical Physics-II	BSPH3507	2017	Employability - Enterprenuership - Skill -
Communication System	BSPH3604	2017	Employability - Communication and Navigation systems, Satellite Communication, Mobile Telephony System, mobile communication network, Enterprenuership - Mobile Telephony System, mobile communication network, Skill - Communication Electronics Lab
Physics Workshop Skills	BSPH2001	2017	Skill - Experiments are done to learn different measurement methods, different types of welding, drilling, cutting metal sheets, milling, drilling etc. Learn to work with several electrical circuits and instruments.



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Electrical circuits and Network Skills	BSPH2003	2017	Skill - Experiments done to understand and analyze circuits and networks, to design circuits and networks involving various electrical instruments.
Basic Instrumentation Skills	BSPH2004	2017	Skill - Designing and implementing systems utilizing analog / digital control devices and learn to take measurements using digital and analog instruments. Experiments are done to learn about CRO, Q meter, LCR circuit and Oscilloscope.
Applied Optics	BSPH2005	2017	Skill - Learning about different light sources, detectors, holography and photonics.
Inorganic chemistry-I	BSCH1101	2019	Skill- Wave mechanics and Inorganic Chemistry-I Lab , enterpreneurship-Atomic Structure-2,Periodicity of Elements-1&2, Employability-Chemical Bonding-1&2, Oxidation-Reduction
Physical Chemistry-I	BSCH1102	2019	Employability-Gaseous state 1 & 2 ,enterpreneurship-Liquid state:,gaseous state-3,Solid state,Ionic Equilibria-1&2, Skill-bravis lattices,Qualitative treatment of acid - base, Physical Chemistry Practice
Physical Chemistry-II	BSCH1202	2019	Employability-Chemical Thermodynamics,Second Law of Thermodynamics,Third Law of thermodynamics,Systems of Variable Composition,Dilute solutions . Enterpreneurship-Chemical Equilibrium,Thermochemistry. Skill-Physical Chemistry-II Practice



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Inorganic chemistry-II	BSCH2301	2019	Skill-General Principles of Metallurgy-1,-Inorganic Chemistry Practice. Employability-Acids and Bases,Chemistry of s and p Block Elements-1,Boric acid and borates, boron nitrides, borohydrides (diborane) carboranes and graphitic compounds, silanes,Chemistry of s and p Block Elements-3,preparation and properties of Clathrates, Inorganic Polymers .
Inorganic Chemistry-III	BSCH2401	2019	Employability-Coordination Chemistry-1&2,Transition Elements,Lanthanoids and Actinoids. Skill-separation of lanthanides, Bioinorganic Chemistry-1,2 and Inorganic Chemistry Practice
Physical Chemistry-IV	BSCH2403	2019	Employability-Electrical & Magnetic Properties of Atoms and Moleculesand Application . Skill-Electrochemistry :II, Physical Chemistry Practice. Enterperneurship- Electrochemistry :I
Industrial Chemicals and Environment	BSCH3503	2019	Employability-Industrial Gases and Inorganic Chemicals,Inorganic Chemicals,Energy & Environment,Biocatalysis. Skill-Environment and its segments, Water Pollution,Industrial effluents from the following industries and their treatment, Industrial Chemicals & Environment practice.
Research Methodology for Chemistry	BSCH3603	2019	Skill-Methods of Scientific Research and Writing Scientific Papers-II,Chemical Safety and



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			Ethical Handling of Chemicals, Safe storage and use of hazardous chemicals, Recovery recycling and reuse of laboratory chemicals, Data Analysis-I & II.
Instrumental Methods of Chemical Analysis	BSCH3604	2019	Skill-Introduction to spectroscopic methods of analysis, Molecular spectroscopy, Separation techniques, Instrumental Methods of Chemical Analysis practice. Employability-Molecular spectroscopy instrumentation and application, Atomic spectroscopy, Spectrophotometer's principle and application,
Ordinary Differential Equations	BSMA1202	2016	Skill –To understand solving Free Undamped Motion of a Spring System using Python and other skills Employability- Be competent in solving linear/non-linear 1st & higher order ODEs using analytical methods to obtain their exact solutions.
Numerical Analysis	BSMA2401	2017	Skill – Numerical Solution of different linear and non-linear equations using software. Employability - Perform error analysis to select an appropriate numerical model and to estimate errors in numerical solution of a given problem.
Discrete Mathematical Structure	BSMA3602	2017	Skill –To work with different types of Sets, Lattices and Boolean Algebra using Python Employability - To learn a particular set of mathematical facts and to apply their



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			applications in many subjects of Computer Science and Engineering such as Cryptography, Theory of Computation & Data Networking.
Analysis-II	BSMA2301	2017	Skill - To describe various theorems about Riemann sums and Riemann integrals and emphasize the proofs' development. Employability - Apply change of variables in double integrals and triple integrals
Modern Algebra	BSMA2302	2017	Skill - To introduce students to the language and precision of modern algebra Employability - Work effectively with others to discuss homework problems put on the board.
Partial Differential Equations and System of Ordinary Differential Equations	BSMA2303	2017	Skill - Introduce students to how to solve linear Partial Differential Equations with different methods. Employability - Identify and solve Laplace, Diffusion and Wave equations.
Tools and Techniques in Bioscience	BSLS2005	2017	Skill-Hand on practice on different tool like PAGE, XRF, chromatography, spectroscopy etc.
Food processing	BSLS2007	2017	Skill- Analysis of nutritional value, isolation and purification of essential oil and pigments.
Plant tissue culture	BSLS2009	2017	Skill- Isolation of Explants Establishment and Maintenance of Callus and media preparation and culture.
Nursery and gardening	BSLS2010	2017	Skill- Vegetative propagation: air-layering, cutting and selection of



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			cutting, Gardening: definition, objectives and scope - different types of gardening - landscape and home gardening
Medicinal Botany	DEHB0401	2017	Skill- Perform practicals on medicinal plants identification, isolation of phytochemicals.
Traditional Botany and Phytochemistry	DEHB0402	2017	Skill- Students can easily identify and classify plants, prepared and seposited herbarium, they also practiced digital documentation of herbarium.
Standardization and Quality Control of ASU Drugs	DEHB0404	2017	Skill- Varyify the quality and nutritional values of plant based nutrients and herbal medicine.
Basic Microbial Techniques	DEFM0402	2017	Skill- Handling of microscope ,identification of bacteria and culture
Quality Assurance in Food Preservation Methods	DEFM0404	2017	Skill- drying, refrigeration, and fermentation. Modern methods include canning, pasteurization, freezing, irradiation, and the addition of chemicals.
Fundamentals of Horticulture	ASHO1101	2018	Understanding the fundamentals of various aspects of horticulture crops :Employability
Fundamentals of Plant Pathology	ASPP1101	2018	Understanding the fundamentals of plant disease causing organisms and their management: Employability
Irrigation water management	ASAG1206	2018	Understandsanding the practices of water management and its application in irrigation management : skill dev.& Employability
Fundamentals of Entomology –I (Insect Morphology and Taxanomy)	ASEN1201	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability



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Fundamentals of Entomology- II (Insect ecology and concepts of IPM)	ASEN2102	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Weed management	ASAG2105	2018	Identification of Weeds and its management in different crops : Employability
Production technology of fruits and plantation crops	ASHO2102	2018	Understanding the different methods i.e. grafting, budding and layering for production of fruit and plantation crops: entrepreneurship & skill
Agricultural Informatics	ASAI2101	2018	To disseminate, capture, access information to achieve sustainable use of agricultural resources : employment.
Communication skills and personality development	ASEE2104	2018	Develop knowledge of english communication through presentation, extempore and GD: Skill & Employability
Crop Production Technology –II (Oil seeds, fiber, sugar, tobacco, and fodder Crops) Rabi crops	ASAG2204	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Production Technology for Ornamental Crops, MAP and Landscaping	ASHO2204	2018	To gain expertise in production of ornamental crops and landscaping : , Employability & skill development
Rain-fed Agriculture & Watershed Management	ASAG2211	2018	Understanding the methods of rainwater harvesting and groundwater recharging :Employability
Principles of seed technology	ASPG2202	2018	Gaining knowledge in seed storage, certification and marketing ways: employment
Diseases of Field and Horticultural Crops and their Management –I	ASPP2202	2018	Identification and management of diseases of field crops :employability





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Entrepreneurship Development and Business Communication	ASEE3103	2018	Development of entrepreneurial mindset and entrepreneurial skills for building a start-ups: skill dev
Pests of field Crops and Stored Grain and their Management	ASEN3103	2018	Identification and management of store pest and management of field crops :employability
Diseases of Field and Horticultural Crops and their Management-II	ASPP3103	2018	Identification and management of diseases of horticultural crops :employability
Crop Improvement-I (Cereals,millets,pulses and oil seeds etc)(Kharif crops)	ASPG3104	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Principles of food science and nutrition	ASFS3101	2018	Identification of microbes in food processing and packaging: employability
Geoinformatics and Nano-technology for Precision Farming	ASAG3110	2018	To gain knowledge in nano materials and geoinformatics applications i.e. moonsoon tracking system, drainage networks for precision farming:Employability, skill and entrepreneurship
Farming System & Organic farming for Sustainable Agriculture	ASAG3207	2018	To gain expertise in organic farming practice: Employability, skill development and Entrepreneurship
Post-harvest Management and Value Addition of Fruits and Vegetables	ASHO3205	2018	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development
Pests of horticultural crops and their management and Beneficial Insects	ASEN3204	2018	Identification and management of crop & storedgrain pests :employability & skill dev



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Crop Improvement-II (fibre, sugar, starches, narcotics, Vegetables, fruits, and flowers)	ASPG3205	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Principles of Integrated Pest and Disease Management (50% Entomology and 50% Pathology)	ASPP3204	2018	Identification of insects pests of different crops and its integrated pest management- Entrepreneurship& skill dev,employability
Protected cultivation and post harvest technologies	ASAE3204	2018	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development
Intellectual Property Rights	ASIP3201	2018	Understanding the process to file patent and register for copyrights:skill and Employability.
Food safety and Standards	ASFE2201	2018	Understanding the different food safety principles i.e. pasturization, canning etc: Skill
Principles and practices of weed management	MAAG 1102*	2017	Skill development: Identification of different weeds and their control which in turn would further provide a scope to students in chemical industries
Principles and practices of water management	MAAG 1103*	2017	Skill development: The students can learn about judicious water management using different efficient technologies which would further lay emphasis on job opportunities as well as they can make themselves self sufficient by serving as entrepreneurs to serve the farming community
Agronomy of major cereals and pulses	MAAG 1204*	2017	Skill development: Students gain an insight into the different package and practices for raising



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			different agronomic crops under varied agroclimatic conditions.
Agronomy of oilseed, fibre and sugar crops	MAAG 1205*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Cropping systems and sustainable agriculture	MAAG 1206*	2017	Skill development: The students acquire knowledge about different cropping systems under various climatic situations and they can make themselves self employed as successful entrepreneurs
Dry land farming and watershed management	MAAG2107 *	2017	Skill development: On the basis of climatic situations, students will learn raising of different climate resilient crops
Master's seminar	MAAG1291 *	2017	To exploit newly evolved research techniques for enhancing the traits in agronomically important species and learn the tips for giving good presentations.
Soil fertility and fertilizer use	MASA1101	2017	Skill development: Students gain knowledge on the application of fertilizers and soil fertility status
Management of problem soils and waters	MASA1202	2017	Skill development: students study different methods for the reclamation of problematic soils as well as their management
Statistical methods for applied sciences	MAST 2102	2017	Skill: To exploit various statistical tools as well as techniques to compile raw data for representing the results
Experimental designs	MAST 1201	2017	The students can analyze the data of field experiments and interpret the same in the result.
Library and information services	MALI1101	2017	Skill development: To gain knowledge on the utilization of



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			library resources for the research finding of experiments.
Technical writing and communication Skills	MACS1101	2017	Skill development: learn the style and skill of writing technical papers
Intellectual property and its management in agriculture	MAIP 1201	2017	Employability and Skill development: students get an overall idea of IPR and their applications towards the protection of property rights
Basic concepts in laboratory techniques	MALT1201	2017	Skill: students do learn the usage of different laboratory equipments along with the standard operating procedures for handling them
Agricultural research, research ethics and rural development programmes	MAAR2101	2017	Employability and Skill development: Acquire knowledge for research ethics and government policies.
Production technology of cool season vegetable crops	MAVS 1101*	2017	Skill: The students can train others as well as the knowledge can be implemented for carrying out research in collaboration with various government and non-government organizations.
Breeding of vegetable crops	MAVS 1103*	2017	Research: can carry out research to generate new varieties further leading to entrepreneurship
Production technology of under exploited vegetable crops	MAVS 1205*	2017	Entrepreneurship and research to conserve the fading races thereby promoting the importance of these races to the farming community for nutritional security
Seed production technology of vegetable crops	MAVS 2106*	2017	Entrepreneurship, skill and research: Development of quality seeds and planting materials



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Fundamentals of processing of vegetables	MAVS 2108*	2017	Entrepreneurship and skill: To utilize the knowledge in various processing units
Post harvest technology for fruit crops	MAFS1205	2017	Entrepreneurship and skill
Principles of plant breeding	MAGP1103	2017	Research: can carry out research to generate new varieties which further lead to entrepreneurship
Principles and practices of water management	MAAG1103	2017	Skill and research: To learn the judicious utilization of water during various developmental stages of plants
Principles of cytogenetic	MAGP 1102*	2017	Practical skills and concepts leading to entrepreneurship and research to generate high yielding and disease resistant varieties.
Techniques in molecular biology I	MAMB1205	2017	Skill: Students learn the techniques of molecular biology and further carry out research and also serve as entrepreneurs
Genomics and proteomics	MAMB 2110	2017	Research and entrepreneurship: The tools and techniques of both the sciences help the students to carry out research and further serve as entrepreneurs
Development perspectives of extension education	MAEX1101*	2017	Employability: Some concepts in this course and the rural development programs can help in getting employment
Development communication and information management	MAEX1102*	2017	Skill and research: students can learn the skills and involve in research activities
Diffusion and adoption of innovations	MAEX1103*	2017	Research: Students can carry out research on adoption and diffusion of innovations
Gender sensitization for development	MAEX1105*	2017	Research and employability: provide them an opportunity to work in sectors relating to women empowerment



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Research methods in behavioral sciences	MAEX 1206*	2017	Students get an opportunity to learn the basic concepts of research
e-Extension	MAEX 1207*	2017	Skill: Students can learn the usage of various tools related to ICT activities and further carry out research
Market led extension management	MAEX 1208*	2017	Entrepreneurship: students can learn the marketing and entrepreneurial skills
Human Resource Development	MAEX 2109*	2017	Skill: Students can learn the skills of studying human behaviour leading the management of human resources
Agricultural Marketing & Price Analysis	MAAE 1201	2017	Entrepreneurship: students can learn the marketing skills and serve as entrepreneurs
Agricultural Finance and Project Management	MAAE 2102	2017	Entrepreneurship and research: Students can learn the basic concepts of agricultural finance and thereby manage projects
Statistical methods for social sciences	MAST 1203	2017	Skill: Students can learn the usage of different statistical tools that in turn would provide them a scope for employment
Non-Parametrics	MAST 2104	2017	Skill: Students can learn the usage of different non parametrics such as descriptive statistics and statistical inferences which would help them for carrying out research activities
Participatory methods for technology development and transfer	MAEX1104	2017	Skill and employability: students can learn the basic concepts of participatory techniques and thereby help in technology transfer from lab to land
Entrepreneurship Development and Management in Extension	MAEX2110	2017	Entrepreneurship: Students do learn the entrepreneurial skills which ultimately provides them



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			with a scope to serve as entrepreneurs
Taxonomy of Shellfish	FSRM1102	2019	Gain knowledge about the morphometric and meristic character of shellfish for identification. Skill development
Fish Food Organisms	FSAQ2109	2019	Learn and practice the nutritional requirements of fish/shellfish larvae and knowledge on mass culture and enrichment of live food organisms. Employability and Skill development
Aquatic Ecology, Biodiversity and Disaster Management	FSEM2106	2019	Study the coastal resources, integrated coastal zone management strategies to conserve it in case of any disaster.
Freezing Technology	FSPT2103	2019	Understanding the different types of low temperature preservation, handling, storage of different type of fish and fishery products to minimize the spoilage along with post harvest loss. Employability and Skill development
Genetics and Breeding	FSAQ2111	2019	Gain knowledge on genetic basis of inheritance and breeding plans for commercially important fishes. Employability, Entrepreneurship and Skill development
Fish Immunology	FSHM2106	2019	Study the types of immunity, antigen-antibody interactions and learn the Serological methods in disease diagnosis. Employability and Skill development
Fisheries Economics	FSEE2102	2019	Learning the interface between economics and effective management decisions for fisheries business firm.



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			Employability and Skill development
Coastal Aquaculture and Mariculture	FSAQ2204	2019	To gain knowledge in establishing and managing different fish/shellfish farming systems in coastal waters. Employability and skill development
Fish Nutrition and Feed Technology	FSAQ2208	2019	Practical knowledge of feed formulation and different feed processing techniques and prepare feed based on the nutritional requirements of fish/shell fish. Employability and skill development
Fish Packaging Technology	FSPT2205	2019	Learn the different types of packaging, importance of packaging in fish processing, functions, objectives and requirements. Skill development
Fish and Shellfish Pathology	FSHM2201	2019	Study fish and shellfish pathogens, their control measures and treatments. Employability and Skill development.
Fishing Craft Technology	FSFE2203	2019	Study the operation of various types of traditional and mechanised fishing craft, design and modification. Skill development
Fisheries Extension Education	FSEE2207	2019	Acquire skills required to practice various fisheries extension approaches, the transfer of modern and scientific findings of lab to the farmers land.
Shellfish Hatchery Management	FSAQ2206	2019	Practical skills of seed production and hatchery management of commercially important crustaceans and molluscs and can setup his/her own hatchery.





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			Employability, Entrepreneurship and Skill development.
Communication Skills and Personality Development	FSEE2208	2019	Students will improve interpersonal skills, active listening and responding skills, communication into everyday practice, teamwork and group discussions skills. Employability and Skill development.
Introduction to Forensics, Psychology, Law and Statistics	MSFS1101	2017	Skill : Student will gain knowledge of Laws, Assessment of Deception and Statistical analysis.
Instrumental Techniques	MSFS1102	2017	Skill : Student learn working principle and instrumentation of instruments such as UV, IR, TLC etc.
Crime Scene Management and Forensic Physics	MSFS1103	2017	Skill & Employability : Skill to reconstruct crime scene. Student process the simulated crime scene. Student gains knowledge about examination of various evidences such as soil, glass, paint, foot print and lip prints.
Finger prints and Questioned Documents	MSFS1104	2017	Skill, Employability & Entrepreneurship, : Student learn about latent fingerprints and lift them for comparison & identification purpose. Gains knowledge about various Aspects of AFIS. Student also detects Signature, hand writing & document forgery, examines counterfeit currency, passport and seal impressions. Gains knowledge about instrumental techniques like ESDA, VSC, Stereo Microscope.
Instrumental Techniques Laboratory	MSFS1105	2017	Skill & Employability: Student perform experiments on UV



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			absorption of drugs/dyes, TLC, IR spectroscopy of paints/drugs/dyes/organic compounds
Crime Scene Management and Forensic Physics Laboratory	MSFS1106	2017	Skill & Employability : Student perform density gradient analysis of soil samples, physical matching of broken glass bangles and different objects, reconstruction of mock crime scene
Finger prints and Questioned Documents Laboratory	MSFS1107	2017	Skill & Employability: Student examines and identify signature and handwriting forgeries, alterations in documents, examination of intersceting strokes, comparison of fingerprints and development of latent fingerprints
Quality Management, Narcotic Drugs, Explosives, and Forensic Chemistry	MSFS1201	2017	Skill : Student learn about nature, types, collection & packaging of evidences like NDPS drugs and controlled substances , low explosives, Fire debris, Petroleum Products, Beverages, Bribe Trap Cases, Adulterated food, Fibres.
Forensic Biology and Forensic Medicine	MSFS1202	2017	Skill : Student gains knowledge about basics of Human Anatomy, Physiology & Forensic Biology. Student learn about examination of skeletal remains to determine age, Sex & race Gains knowledge about medicolegal investigation such as cause of death, time since death etc.
Forensic Serology and DNA Profiling	MSFS1203	2017	Skill & Employability : Students learn about different ways to detect the presence of blood, semen, saliva and other body fluids , Performs DNA extraction,



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			gains knowledge about basic methodologies used in forensic DNA analysis
Forensic Toxicology and Pharmacology	MSFS1204	2017	Skill & Employability, : Student learn about techniques used to isolate and Extract poisons\ Drugs from samples and determination of various poisons. Also gains knowledge about interpretation of toxicological findings and preparation of reports.
Forensic Ballistics and Computer Forensics	MSFS1205	2017	Skill & Employability : Student gains knowledge about various aspects of ballistics, characteristics of ammunitions and Computer Forensics.
Quality Management, Narcotic Drugs, Explosives, and Forensic Chemistry Laboratory	MSFS1206	2017	Skill : Student learn and perform examination of NDPS drugs and controlled substances , low explosives, Fire debris, Petroleum Products, Beverages, Bribe Trap Cases, Adulterated food, Fibres.
Forensic Biology and Forensic Medicine Laboratory	MSFS1207	2017	Skill : Student gains knowledge about basics of Human Anatomy, Physiology & Forensic Biology. Student performs examination of skeletal remains to determine age, Sex & race Gains knowledge about medicolegal investigation such as cause of death, time since death etc.
Forensic Serology and DNA Profiling Laboratory	MSFS1208	2017	Skill & Employability : Students perform experiments to detect the presence of blood, semen, saliva and other body fluids , Performs DNA extraction,
Forensic Toxicology and Pharmacology Laboratory	MSFS1209	2017	Skill & Employability, : Student isolate and Extract poisons\ Drugs from samples and determines the



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			presence of various poisons. Also gains knowledge about interpretation of toxicological finding and preparation of reports.
Forensic Ballistics and Computer Forensics Laboratory	MSFS1210	2017	Skill & Employability : Student also perform instrumental analysis of GSR & examines bullets and cartridge cases to determine the source of origin.
Pharmacology and Pharmaceutical Drug Analysis	MSFS2101	2017	Employability : Students learn about basic principles of pharmacology, pharmacokinetics & qualitative and quantitative analysis of Pharmaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology	MSFS2102	2017	Skill & Employability, : Students gains basic knowledge about disposition and translocation of toxicants, analytical toxicology, toxic agents such as pesticides, metals etc and their effects & applications of toxicology.
Modern and Applied Analytical Forensic Chemistry	MSFS2103	2017	Skill & Employability : Student learns about basic concepts of forensic nuclear chemistry, gains knowledge about drug chemistry, petroleum chemistry and fire chemistry. learns about analysis of lipids and fats of different oils and analysis of dairy products
Pharmacology and Pharmaceutical Drug Analysis Laboratory	MSFS2104	2017	Skill & Employability : Students do qualitative and quantitative analysis of Pharmaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology Laboratory	MSFS2105	2017	Skill & Employability, : Students do analysis of various poison such



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			as metallic poison, pesticides, plant poisons etc. and gains knowledge about interpretation of toxicological finding and preparation of reports.
Modern and Applied Analytical Forensic Chemistry Laboratory	MSFS2106	2017	Skill & Employability : Student performs analysis of Various Cases in Forensic Chemistry, Validation of new methods & Accreditation in FSL's, Analysis of NDPS, Explosives, Fire, Petroleum Products, Beverages, Bribe Trap Cases, Adultrated food, Fibres & Exmination of Forensic Chemicals.
Assignment	MSFS2107	2017	Skill : Student study various cases where forensic science played significant role in delivery of justice and write reports.
Seminar	MSFS2108	2017	Skill : Student takes up cases and topics relevant to their specialization subjects and delivers the same.
Molecular Biology and Genetics	MSFS2111	2017	Skill & Employability : Student gains knowldege about immunology, metabolism of DNA, RNA and protein, phylogenetic tools, population genetics and bioinformatics, methodologies of DNA analysis, molecular autopsy
Biotechnology in Pharmaceutical Sciences	MSFS2112	2017	Skill & Employability, : Student studies about recombinant DNA Technology, Quality Assurance and Quality control, Studying Bioinformatics, intellectual property rights.
Environmental Biotechnology	MSFS2113	2017	Skill & Employability, : Student learns about pollutants in samples & estimation of BOD. Student gains knowledge about



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			measurement of pollutants with the help of biosensor and biomarker, Measurement of Biomagnification, Waste water management and Treatment.
Molecular Biology and Genetics Laboratory	MSFS2114	2017	Skill & Employability : Student performs extraction of protein from various biological samples, SDS-PAGE for protein analysis, quantification of DNA, Extraction of DNA from different sources. Analysis of protein structure using RASMOL.
Biotechnology in Pharmaceutical Sciences Laboratory	MSFS2115	2017	Skill & Employability, : Student performs isolation of bacteria by different methods, restricted digestion of DNA, Agarose gel electrophoresis, western blotting
Environmental Biotechnology Laboratory	MSFS2116	2017	Skill & Employability, : Student performs practicals to detect pollutants in samples & estimation of BOD., Physical characterisation of waste
Advances in Physical Techniques	MSFS2121	2017	Employability : Student gains knowledge about thermal analysis and different spectroscopy techniques, microscopy techniques and forensic nanotechnology and forensic engineering
Concepts of Conventional and Modern Ballistics	MSFS2122	2017	Employability : student gains knowledge about operational features of firearms, ammunition, external ballistics, GSR analysis and procedures for test firing & other instrumental techniques used for ballistics evidence analysis.



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Audio Recognition and Video Analysis	MSFS2123	2017	Employability : Student gains knowledge about basic concepts of voice recognition, handling of audio evidences, processing of speech signals, Gold wave analysis & video analysis
Advances in Physical Techniques Laboratory	MSFS2124	2017	Skill & Employability : Students perform examination of evidences by EDXRF, measures RI of physical evidences.
Concepts of Conventional and Modern Ballistics Laboratory	MSFS2125	2017	Skill & Employability : Students perform examination of barrel wash, analysis of GSR
Audio Recognition and Video Analysis Laboratory	MSFS2126	2017	Skill & employability : Students record, edit & process audi files using goldwave software, speech acquisition and analysis of speech samples using CSL-4500 software, Video analysis and detection of tampered video files using videofocus
Modern Trends in Fingerprint Sciences	MSFS2131	2017	Employability : Student gains knowledge about composition of latent print residue, different chemical methods used for development of latent fingerprints, enhancement by laser techniques & AFIS
Questioned Document and Forensic Accounting	MSFS2132	2017	Skill, Employability, Entrepreneurship, : Student gains knowledge about instrumental techniques like ESDA, VSC, Stereo Microscope. Examination of aging of paper, Basics of Forensic Accounting.
Forensic Photography and Biometric Traits	MSFS2133	2017	Skill & Employability : Student will gain knowledge about Basics of crime scene photography and laboratory photography. Student



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			also gains knowledge about techniques of Biometric recognition ( hand fingerprint, facial iris and retina.
Modern Trends in Fingerprint Sciences Laboratory	MSFS2134	2017	Skill, Employability & Entrepreneurship : Student performs Development of latent fingerprints. analysis of palatoprints, comparison of males and females fingerprints, cheiloscopy.
Questioned Document and Forensic Accounting Laboratory	MSFS2135	2017	Skill, Employability, Entrepreneurship, :Student performs examination of ink, determining age of document, examination of currency notes, passport, stamp rubberstamp impressions
Forensic Photography and Biometric Traits Laboratory	MSFS2136	2017	Skill & Employability : Students take photographs of simulated crime scene and enhances the images using photo shop.
Principles of Information Security	MSCS1101	2019	Employability-Focus on the CIA models, tools, and techniques for enforcement of security
Digital Forensics	MSCS1102	2019	Employability -Focus on analysis and assessment of risk assesment process & control
Computer Networks	MSCS1103	2019	Skill Development , Employability-Learning about computer network & network security
Cyber Crime & Investigations	MSCS1104	2019	Skill Development,Employability-Learning about Analytical Skills,Comprehension of Cybersecurity Fundamentals and good practices for digital evidence and digital forensics: Skill Development





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Intellectual Property Rights	MSCS1105	2019	Employability-Making the students aware of their rights for the protection of their invention done in their project work
Number theory & Cryptography	MSCS1201	2019	Skill Development,Employability- implement and analyze algorithms for integer factorization and primality testing: Skill Development
Advanced Information Security	MSCS1202	2019	Skill Development, Employability- Focus on the CIA models, tools, and techniques for enforcement of security
Cyber Forensics	MSCS1203	2019	Skill Development, Employability- Focus on analysis and assessment of risk assesment process & control : Skill Development, Employability
System and Network Security	MSCS1204	2019	Skill Development, Employability- Gaining practical experience in installation, monitoring, and troubleshooting of current LAN systems
Cyber Law	MSCS1205	2019	Entrepreneurship-Cyber law is associated with all the areas of business & law which have a technological bend like E-commerce Entrepreneurship.
Basics of forensic sciences	BSFS0401	2019	Skill : Student gains knowledge about fundamentals of forensic science, organizational setup of different FSLs in India, functioning of national and international investigative agencies, code of conduct, ethical issues, professional standards, qualification of forensic scientists, report writing.



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Crime and society	BSFS0402	2019	Skill : Student studies basic concepts of criminology, criminal profiling, types of crime, victimology, penology, psychological disorders and criminality, CJS, case studies
Criminal law	BSFS0403	2019	Skill : Student studies criminal procedure code, IPC, IEA, constitutions of india, acts pertaining to socio- economic and environmental crimes
Forensic Psychology	BSFS0404	2019	Skill : Student gains knowledge about fundamental concepts of forensic psychology and forensic psychiatry , the legal aspects of forensic psychology, significance of criminal profiling, the importance of psychological assessment in gauging criminal behaviour, tools and techniques for detection of deception ( polygraph, narco analysis, brain mapping)
Analytical Techniques	MSCM1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Entrepreneurship
Basic Microbiology Lab	MSCM1105	2016	Techniques for staining microorganisms, isolating and culturing microorganisms: Skill and Employability and Entrepreneurship
Systemic Bacteriology	MSCM1201	2016	Understanding the Morphological identification, pathogenesis, laboratory diagnosis and epidemiology of clinically significant bacteria: Skill dev and Employability



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Molecular Biology & Clinical Biochemistry	MSCM1202	2016	Understanding the central dogma of life, Metabolic disorders and diagnostic enzymology, Biochemical tests for organ function: Employability
Applied Microbiology	MSCM1204	2016	Microscopic analysis of specimen collected: Skill dev. & Enterpreunership
Parasitology & Mycology Lab	MSCM1207	2017	Pathological investigations of urine, stool and other biological specimen; Culture for Pathogenic Fungi : Skill dev. & Employability & Enterpreunership
Mini Project	MSCM2311	2017	Conducting experimental/ research work by engaging in a project: Skill dev and Employability
Project	MSCM2403	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	MSCM2404	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
Medical Laboratory Technology	MSMT1101	2016	Clinical specimen collection, storage, disposal; record maintenance; Quality control: Enterpreunership
Hematology	MSMT1103	2016	Understanding of hematology laboratory; Hematological disorders: Enterpreunership
Medical Instrumentation and Technique	MSMT1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership



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Hematology Lab	MSMT1105	2016	Performing various hematological tests: Skill and Employability and Enterpreunership
Molecular Biology & Clinical Biochemistry	MSMT1202	2016	Understanding the central dogma of life, Metabolic disorders and diagnostic enzymology, Biochemical tests for organ function: Employability
Clinical pathology	MSMT1203	2016	Performing pathological investigations on human specimen: Skill dev. & Enterpreunership
Blood Banking	MSMT1205	2016	Blood collection and transfusion techniques and possible errors associated with it: Skill dev. & Enterpreunership
Clinical pathology Lab	MSMT1206	2016	Collection of blood, stool, body fluids and study their chemical and morphological examination: Skill dev. & Enterpreunership
Microbiology Lab	MSMT1207	2017	culturing and identification of pathogenic microorganims: Skill dev. & Employability & Enterpreunership
Clinical Hematology	MSMT2302	2017	Quality assurance required in hematology; Examination of bone marrow: Skill dev and Enterpreunership
Histopathology Lab	MSMT2310	2017	Performing histopathological analysis and their interpretation: Skill dev and Enterpreunership
Mini Project	MSMT2311	2017	Conducting experimental/ research work by engaging in a project: Skill dev and Employability
Basic Hematology	BSCM1103	2017	Carry out hematological investigations: Skill dev. & Employability & Enterpreunership



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Basic Medical Instrumentation & Techniques	BSCM1104	2017	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Entrepreneurship
Anatomy, Physiology & Haematology Lab	BSCM1105	2017	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability & Entrepreneurship
Clinical pathology & Diagnosis	BSCM1203	2017	Pathological investigations of urine, stool and other biological specimen: Skill dev. & Entrepreneurship
Clinical pathology Lab	BSCM1205	2017	Performing pathological investigations on human specimen: Skill dev. & Entrepreneurship
Microbiology Lab	BSCM1206	2017	Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship
Immunology	BSCM2301	2017	Understanding the concept of Innate & adaptive immune system; performing serological analysis: Skill dev. & Employability & Entrepreneurship
Virology & Mycology Lab	BSCM2307	2017	Demonstration of serological technique in diagnostic virology; Isolation & identification of fungi: Skill dev
Pharmaceutical Microbiology	BSCM2402	2017	Understanding of types & synthesis of antimicrobial agents: Employability and Entrepreneurship
Industrial Microbiology	BSCM2408	2017	Understanding the significance of microbes in fermentation process & industrial effluents: Skill dev and Employability and Entrepreneurship



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Analytical Biochemistry	BSCM2404	2017	Learning the principle of spectrophotometry, colometry, photometry and Clinical biochemistry tests: Skill dev and Employability and Enterepreneurship
Industrial Microbiology Lab	BSCM2410	2017	Industrial visit to a fermentation factory: Skill and Employability
Public Health Microbiology Lab	BSCM2411	2017	Isolation & identification of microorganisms from samples: Skill dev and Employability
Diagnostic Bacteriology	BSCM3509	2017	Study of Lab diagnosis for Enteric infection, RTI, Oral & stomach infection: Skill & Employability
Research Methodology	BSCM3510	2017	Study of Scientific writing, Selection of problem, criteria for selecting a research title, research hypothesis: Skill dev
Mini Project	BSCM3512	2017	Conducting experimental/ research work by engaging in a project: Skill dev and Employability
Project	BSCM3603	2017	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	BSCM3604	2017	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
Basic Hematology	BSMT1103	2016	Carry out hematological investigations: Skill dev. & Employability & Enterpreunership
Basic Medical Instrumentation & Techniques	BSMT1104	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership



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Anatomy and Physiology lab	BSMT1105	2016	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability & Entrepreneurship
Clinical pathology	BSMT1203	2016	Pathological investigations of urine, stool and other biological specimen: Skill dev. & Entrepreneurship
Clinical pathology Lab	BSMT1205	2016	Performing pathological investigations on human specimen: Skill dev. & Entrepreneurship
Microbiology Lab	BSMT1206	2017	Microscopic analysis of specimen collected: Skill dev. & Entrepreneurship
Immunology	BSMT2301	2017	Understanding the concept of Innate & adaptive immune system; performing serological analysis: Skill dev. & Employability & Entrepreneurship
Applied Hematology	BSMT2302	2017	Concept of Haemopoietic disorders, laboratory diagnosis of leukemia, hemolytic anemia, haemophilia, ITP: Skill dev. & Employability & Entrepreneurship
Basic Histology	BSMT2304	2017	Concept of Histotechnology, histopathology: Skill dev. & Employability & Entrepreneurship
Histology Lab	BSMT2308	2017	Performing experiment on Histotechnology: Skill dev and Employability
Advanced Hematology	BSMT2403	2017	Understanding the lab diagnosis for Leukamoid reactions, DIC: Skill dev and Employability and Entrepreneurship
Analytical Biochemistry	BSMT2407	2017	Learning the principle of spectrophotometry, colometry, photometry and Clinical



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			biochemistry tests: Skill dev and Employability and Entrepreneurship
Biochemistry Lab	BSMT2410	2017	Analysis of urine and serum sample for biochemical parameters: Skill dev and Entrepreneurship
Parasitology Lab	BSMT2411	2017	Identification of parasites collected from human specimens: Skill dev and Employability
Medical Laboratory Management	BSMT3502	2017	Patient management and quality management: Employability & Entrepreneurship
Introduction to Quality and patient safety	BSMT3508	2017	Studying of culture of safety, Quality improvement innovations: Skill dev and Employability
Research Methodology	BSMT3509	2017	Study of Scientific writing, Selection of problem, criteria for selecting a research title, research hypothesis: Skill dev
Mycology and Virology Lab	BSMT3510	2017	Performing experiments using culture media and staining techniques for identification of fungi: Skill dev
Mini Project	BSMT3511	2016	Conducting experimental/ research work by engaging in a project: Skill dev and Employability
Project	BSMT3603	2016	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	BSMT3604	2016	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Entrepreneurship
Basic Radiation Physics	BSRT1104	2016	Understanding of the concept of Radiation in the study of human





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			anatomy and disease identification: Employability
Basic Medical Instrumentation & Techniques	BSRT1105	2016	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership
Anatomy and Physiology lab	BSRT1106	2016	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability & Enterpreunership
Equipments Of Radiotherapy	BSRT1203	2017	Conceptualization of linear accelarators, simulators, magnetrons and klestron: Employability & Enterpreunership
Medical Imaging Lab - 1	BSRT1204	2017	Care and maintenance of x-ray equipment: Skill dev & Enterpreunership
Advance Radiographic Technique	BSRT2302	2017	Familiariation with the equipments of ultrasound, basic principle of ct scanning and MRI: Employability
Basics Equipment's in Radiodiagnosis	BSRT2304	2017	Understanding of gamma rays and its use in radiography, magnetron and klestron: Skill dev and Enterpreunership
Medical Imaging Lab - 2	BSRT2305	2017	Performing radiographic positioning, application of contrast media, Darkroom procedures: Skill dev and Enterpreunership
Radiotherapy and Brachy Therapy Techniques In Malignant And Non Malignant Diseases	BSRT2401	2017	Concept on treatment of cancer, dose limits for individuals: Skill dev and Employability
Applied Equipments Of Radio Diagnosis	BSRT2402	2017	Understanding of patient preparartion for general radiologic procedures, concepts



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			on nuclear medicine and PET scan: Enterpreunership
Hospital posting Medical Imaging Lab - III	BSRT2406	2017	Exposure to different hospitals, training of x-ray, CT and MRI: Skill dev. & Employability & Enterpreunership
Basics of Magnetic Resonance Imaging	BSRT3503	2017	Understanding of MRI scans of different organs: Skill dev and Employability
Orientation In Clinical Sciences And Course Contents	BSRT3505	2017	Understanding about different diseases and medicines: Employability
Medical Imaging Lab - IV	BSRT3506	2017	Access to CT, MRI and their indications: Skill dev. & Employability & Enterpreunership
BASIC COMPUTER	BSOP1105	2015	Identifying the applications and use of computers
GENERAL PHYSIOLOGY	BSOP1103	2015	Understanding the physiological aspects of growth and development of Human organs/ tissues: Employability
OCULAR ANATOMY	BSOP1202	2015	Identifying the microscopic structures of various tissues in the eye and correlating the structure with the functions: Employability
OCULAR PHYSIOLOGY	BSOP1203	2015	Elucidating the physiological aspects of normal growth and development of the eye: Employability
OCCULAR MICROBIOLOGY AND PATHOLOGY	BSOP2301	2015	Understanding of how knowledge of pathological processes can be utilized in the investigation, management and prevention of disease: Employability
OPYOMETRIC OPTICS I	BSOP2303	2015	Ability to measure the power of lens, lens centration using conventional techniques, identify



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			different forms of lenses: Skill dev. and Entrepreneurship
CLINICAL EXAMINATION OF VISUAL SYSTEM	BSOL2301	2015	Performing various clinical tests, their interpretation and finding: Skill dev. and Entrepreneurship and Employability
CLINICAL OPTOMETRY-I	BSOL2302	2015	Measurement of lens power, lens centration using conventional techniques, transposition of various types of lenses: Skill dev. and Entrepreneurship and Employability
OCULAR DISEASES -I	BSOP2401	2015	Developing diagnostic approach towards management of the ocular diseases: Employability
OPTOMETRIC OPTICS II	BSOP2403	2015	Developing the art and science of dispensing spectacle lens and frames based on the glass prescription: Skill dev. and Entrepreneurship and Employability
OCULAR DISEASES II	BSOP2405	2015	Knowledge on course sequelae of ocular diseases, their diagnosis and management of the ocular diseases: Employability
CLINICAL OPTOMETRY II	BSOL2401	2015	To gain practical knowledge regarding Ocular Diseases, Visual Optics, Optometric Optics: Skill dev. and Entrepreneurship and Employability
BINOCULAR VISION & SQUINT	BSOP3501	2015	Binocular muscle coordination; Integration of motor and sensory system into binocular vision; Differentiate different types of strabismic anomalies; non strabismic anomalies related to accommodation & convergence: Skill & Employability



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OCULAR DISEASES LABORATORY II	BSOL3503	2015	Performing the basic workup for a patient in a hospital and clinic set up: Skill dev. and Entrepreneurship and Employability
STATISTICS & OCCUPATIONAL OPTOMETRY	BSOP3601	2015	Interpretation and ability to prescribe suitable corrective lenses and eye protective wear: Skill dev. and Entrepreneurship and Employability
PEDIATRIC & GERIATRIC OPTOMETRY	BSOP3602	2015	Ability to identify, investigate the age-related changes in the eyes: Skill dev. & Employability
OPTOMETRIC INSTRUMENTS LABORATORY-II	BSOL3602	2015	Gaining practical skill in handling the advanced instruments in an Optometry Lab: Skill dev. and Entrepreneurship and Employability
PROJECT	BSOP4701	2015	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Human Anatomy and Physiology I– Theory	BPHT1101	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Analysis I – Theory	BPHT1102	2017	Skill-Employability-Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession
Pharmaceutics I – Theory	BPHT1103	2017	Skill- Employability- Entrepreneurship -Understand the impact of pharmaceutical solutions in a global, economic, environmental, and societal context



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Pharmaceutical Inorganic Chemistry – Theory	BPHT1104	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Communication skills – Theory *	BPHT1105	2017	Skill- Students can improve their communication Skill
Human Anatomy and Physiology – Practical	BPHL1101	2017	Skill-allows Students to verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Analysis I – Practical	BPHL1102	2017	Skill- Employability- Students can assay ,prepared and standardized various Heavy metals and Chemicals
Pharmaceutics I – Practical	BPHL1103	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Pharmaceutical Inorganic Chemistry – Practical	BPHL1104	2017	Skill- Students can perform purity test on drugs or chemicals
Communication skills – Practical*	BPHL1105	2017	Skill- Students can improve their communication Skill
Remedial Biology – Practical*	BPHL1106	2017	Skill- Students can learn about structure and functional system of plant and animal kingdom
Human Anatomy and Physiology II – Theory	BPHT1201	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Organic Chemistry I – Theory	BPHT1202	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Pathophysiology – Theory	BPHT1204	2017	Skill-Employability-student get to know about various communicable diseases and pathophysiology along with all the techniques for screening test .
Environmental sciences – Theory *	BPHT1206	2017	Employability- student get to know about basic knowledge about the environment and its allied problems
Human Anatomy and Physiology II –Practical	BPHL1201	2017	Skill- allow the verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Organic Chemistry I– Practical	BPHL1202	2017	Skill-Students can do qualitative analysis and synthesis of Organic Compound
Biochemistry – Practical	BPHL1203	2017	Skill- Students can demonstrate different Biochemical Test
Computer Applications in Pharmacy – Practical*	BPHL1204	2017	Skill-Allows students to details with Database, Database Management system, computer application in clinical studies and use of databases
Pharmaceutical Organic Chemistry II – Theory	BPHT2101	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Physical Pharmaceutics I – Theory	BPHT2102	2017	Skill- Employability- formulate and solve complex pharmaceutical problems in formulation development
Pharmaceutical Engineering – Theory	BPHT2104	2017	Skill -Employability- Enterprenurship- students can able to understand and perform unit operations, material handling



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			techniques, screening test and plant lay out design for optimum use of resources used in Pharmaceutical industries
Pharmaceutical Organic Chemistry II – Practical	BPHL2101	2017	Skill-Students can do qualitative analysis and synthesis of Organic Compound
Physical Pharmaceutics I – Practical	BPHL2102	2017	Skill- Allows student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.
Pharmaceutical Microbiology – Practical	BPHL2103	2017	Skill- Allows students to study of all categories of microorganisms especially for the production of alcohol antibiotics, vaccines, vitamins enzymes etc.
Pharmaceutical Engineering – Practical	BPHL2104	2017	Skill- Students can get fundamental knowledge on the art and science of various unit operations used in pharmaceutical industry
Pharmaceutical Organic Chemistry III– Theory	BPHT2201	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Medicinal Chemistry I – Theory	BPHT2202	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures,structure activity



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			relationship of various drug molecules.
Physical Pharmaceutics II – Theory	BPHT2203	2017	Skill- Employability- formulate and solve complex pharmaceutical problems in formulation development
Pharmacology I – Theory	BPHT2204	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Pharmacognosy and Phytochemistry I– Theory	BPHT2205	2017	Skill - Students can do identification and evaluation, phytochemicals present in them and their medicinal properties
Medicinal Chemistry I – Practical	BPHL2201	2017	Skill - Students can get fundamental knowledge on the structure, chemistry and synthesis of each class of drug
Physical Pharmaceutics II – Practical	BPHL2202	2017	Skill-student get to know better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.
Pharmacology I – Practical	BPHL2203	2017	Skill -Student can Observe the effect of drugs on animals by simulated experiments
Medicinal Chemistry II – Theory	BPHT3101	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			structures, structure activity relationship of various drug molecules.
Industrial Pharmacy– I Theory	BPHT3102	2017	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.
Pharmacology II – Theory	BPHT3103	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Pharmacognosy and Phytochemistry II– Theory	BPHT3104	2017	Skill-Employability-Isolate, Identify, Analyze, screen and ensure quality as well as quantity of drugs/pharmaceuticals and also able to design phytopharmaceutical schemes of crude drugs estimation
Pharmaceutical Jurisprudence – Theory	BPHT3105	2017	Employability- students can able to apply knowledge in the area of pharmaceutical legislation, rules, laws, ethics, acts and amendments related to drugs, engage in life-long learning.
Industrial Pharmacy I – Practical	BPHL3101	2017	Skill- Students can Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality
Pharmacology II – Practical	BPHL3102	2017	Skill- Students can demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Pharmacognosy and Phytochemistry II – Practical	BPHL3103	2017	Skill- Students can carryout isolation and identification of phytoconstituents
Medicinal Chemistry III – Theory	BPHT3201	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures,structure activity relationship of various drug molecules.
Pharmacology III – Theory	BPHT3202	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Herbal Drug Technology – Theory	BPHT3203	2017	Skill-Employability- students get to know basic principles of traditional medicinal systems with method of preparation and standardization of ayurvedic formulations
Biopharmaceutics and Pharmacokinetics – Theory	BPHT3204	2017	Skill- Employability- student get to know about pharmacokinetic and pharmacodynamic parameters of different dosage form and use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession
Pharmaceutical Biotechnology – Theory	BPHT3205	2017	Employability- Students van design and develop process to meet desired needs within realistic constraints of pharmacy sector.



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Quality Assurance –Theory	BPHT3206	2017	Skill-Employability- students get to know about the validation, confirmation of test product substance and able to analyze, screen and ensure quality of drugs/pharmaceuticals.
Medicinal chemistry III – Practical	BPHL3201	2017	Skill- Students can do chemical synthesis of selected drugs
Pharmacology III – Practical	BPHL3202	2017	Skill- Students can demonstrate the various receptor actions using isolated tissue preparation
Herbal Drug Technology – Practical	BPHL3203	2017	Skill- Students can prepare herbal cosmetics, natural sweeteners, nutraceuticals
INTERNET AND WEB TECHNOLOGY	BCAC3501	2016	Skill - Design and development of web programming.
RDBMS	BCAC2302	2016	Skill - Database and file management
Apparel Production	CUTM3031	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Heavy Vehicle Technology	CUTM3034	2017	Employability/ Entrepreneurship/Skill - Practice and Project
E-Vehicle Assembly and Service Technology	CUTM3037	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Poultry Farming	CUTM3039	2017	Employability/ Entrepreneurship/Skill
Design Supervising Wooden and Modular Furniture	CUTM3041	2017	Employability/ Entrepreneurship/Skill - Practice and Project
3D Modelling and Printing	CUTM3043	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Precast Concrete Manufacturing	CUTM3045	2018	Employability/ Entrepreneurship/Skill - Practice and Project



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Fabrication	CUTM3046	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Internet of Things	CUTM3048	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Mechatronics System Design	CUTM3049	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Editor	CUTM3054	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Refraction Technology	CUTM3057	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Emergency Medical Technology	CUTM3058	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Radiology Technology	CUTM3061	2019	Employability/ Entrepreneurship/Skill - Practice and Project
X- ray Technology	CUTM3065	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Retail Sales	CUTM3067	2019	Employability/ Entrepreneurship/Skill - Practice and Project
<b>2020-21</b>			
Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Differential Equations and Linear Algebra	CUTM1001	2020	Skill Development(Students will know about the modelling of different engineering application ) Skill Development(Students will know about modelling of problems related to system of



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			equations in engineering application)
Laplace & Fourier Transforms	CUTM1002	2020	Skill Development(Students will know to find the solution using laplace and fourier transform )
Complex Analysis & Numerical Methods	CUTM1003	2020	Skill Development(Students will know to find the solution using complex integral)
Discrete Mathematics	CUTM1004	2020	Skill Development(Students will know about graphs, sets and logic)
Probability & Statistics	CUTM1005	2020	Employability (Students will know about probability distribution) Skill (Students will know about mean, media, mode)
Calculus	CUTM1925	2020	Employability (Students will know about curvature, asymptotes)
Mechanics for Engineers	CUTM1006	2020	Employability (knowledge enhancement)
Optics and Optical Fibres	CUTM1007	2020	Employability (knowledge enhancement) / Skill development ( LASER and Optical fiber portion)
Environmental Studies	CUTM1010	2020	Employability-Environment and its multidisciplinary nature,Biodiversity and its conservation,Causes, effects and control measures of pollution.
Optimisation Techniques	CUTM1011	2020	Skill Development (Students shall be able to apply the theory of optimization methods and algorithms to develop and for solving various types of optimization problems). Employability and Entrepreneurship (Students shall be able to solve the mathematical results and numerical techniques



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			of optimization theory to concrete Engineering problems by using computer software)
Engineering Economics and Costing	CUTM1012	2020	Skill Development (Students shall be able to apply the microeconomics concepts related to business and its impact on enterprise). Employability and Entrepreneurship (Students shall be able to apply cost concepts to analyze common business management decisions such as pricing a product and services)
Project Management	CUTM1013	2020	Skill Development (Students shall be able to develop a Project Charter document for any project). Employability and Entrepreneurship (Students shall be able to implement the Project and Prepare a project document that they have undertaken as a learning tool)
Gender, Human Rights and Ethics	CUTM1014	2020	Skill Development (Students shall be sensitive to gender, human rights and ethics within an organizational context). Employability and Entrepreneurship (Students shall be able to integrate concerns related to gender, human rights and ethics into the policies, processes and systems in an organization)
Climate Change, Sustainability and Organisation	CUTM1015	2020	Skill Development (Students will be exposed to current climate change issues, challenges and debates). Employability and Entrepreneurship (Students shall be equipped to develop strategies



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			for perspective planning of organizations)
Job Readiness	CUTM1016	2020	Skill Development (Develop additional skills (verbal, logical, quantitative and reasoning) required to enhance employability as well as the entrepreneurial ability of the students). Employability (Students will develop skill in the area of proficiency in english, reasoning and aptitude, which are required to obtain a job)
Industrial IOT and Automation	CUTM1017	2020	Skill Development and Employability (the new evolution in hardware, software, and data. While the promise of the Industrial Internet of Things (IIoT) brings many new business prospects, it also presents significant challenges ranging from technology architectural choices to security concerns)
Data Analysis and Visualisation using Python	CUTM1018	2020	Skill And Employability(Students had Created data visualizations of various data sets using matplotlib and the seaborn modules with python and also developed portfolios of various data analysis projects . )
Machine Learning using Python	CUTM1019	2020	Skill And Employability(Implement ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able to solve problems in areas computational finance, image processing and computer vision,



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			energy and natural language processing.)
Design Thinking	CUTM1021	2020	Skill And Employability (student will be able to apply the design thinking process to innovative problem solving)
System Integration with DYMOLA	CUTM1022	2020	Employability ( designing of high-fidelity modeling of complex integrated systems, intuitive modeling i.e. advanced, formally defined object-oriented modeling language, To increase the ability to integrate with complex 3D geometry for integrated simulation, to increase powerful model management, calibration & optimization capabilities.)
Smart Engineering Project (G2M)	CUTM1023	2020	Employability ( learn different tools and collaborate together to build a smart live project, express the imagination to reality, industry readiness.)
Geotechnical Engineering	CUTM1073	2020	Employability(To obtain knowledge about soil properties and methods of soil properties determination in the laboratory, using field tests and considering comparable experience. Basic stability and deformation problems. Principle of spread and deep foundation design. To understand fundamental knowledge of geotechnical works for soil improvement, interaction of structure and subsoil. Basic design methods for excavation and foundation pits with dewatering and sealing systems)





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<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Construction Material Testing	CUTM1069	2020	Skill Development(Gain knowledge about how determine the standard quality of construction materials)
Quantity Estimation & Costing	CUTM1063	2020	Skill development(Students will be able to Estimating, brick calculations & cost for different materials, foundation & footing calculations. Gain knowledge about how to schedule & estimate different construction works both manually and using software.)
Geometric Modeling	CUTM1060	2020	Skill development(Students will be able to Demonstrate use of CAD in Civil Construction, basic knowledge of operating software & commands, and benefit of civil developments in the construction industry. Do 2d &3d drafting /design with AUTO CAD software.)
Hydrology and Irrigation	CUTM1071	2020	Skill development(Project oriented skills shall be gained by students to work efficiently in survey, planning, design and construction in irrigation sector.)
Surveying Techniques	CUTM1067	2020	Skill development(Doing centering, leveling & measuring coordinate points of area and calculation, transfer to data from Total station to software spectrum link Doing field work using of simple machine parts such as Total – Station, Auto- level)
Geospatial Survey	CUTM1068	2020	Skill development(Gain knowledge about the structure of spatial data including file



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			<p>associations, attribute tables, Metadata, coordinate systems, and projections</p> <p>Carryout measurements</p> <p>Differential Global Positioning System (DGPS)/ Global Navigation Satellite System (GNSS) in field.</p> <p>Preparation &amp; digitization of different topography map with the help of Arc-GIS software)</p>
Concrete Technology	CUTM1066	2020	<p>Skill development(Demonstrate test and analysis of cement, aggregate, sand, effect of water cement ratio.</p> <p>Prepare concrete, carry out simple formwork and reinforcement with the application of modern Power Tools.</p> <p>Prepare reinforcement of different R.C.C. members i,e, Foundation, beams, columns, slabs, Retaining Wall, etc.</p> <p>Erect scaffolding and make the intricate formwork at different locations.</p> <p>Prepare a bar bending schedule and demonstrate bar bending and calculate the estimated quantity of materials.)</p>
Electrical, Plumbing, and Woodwork	CUTM1065	2020	<p>Skill development(Identify timber and perform sawing and planning using hand and power tools.</p> <p>Demonstrate surface finish with exact sizing by planning operation.</p> <p>Prepare different wooden Joints. (Range of skill - framing joint, Housing joints, broadening joints,</p>



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			<p>Lengthening joints )            Make small wooden job as per drawing with schedule sizes of timber or alternatives of timber i.e. FRP, MDF, FOAM using various hardware.            Make different types of doors and windows with fixing of components.)</p>
Design of Structure	CUTM1074	2020	<p>Skill development(To gain the knowledge of RCC design calculation with relevant Indian Standards.            • After completion of the courses the students will gain knowledge of Pre-Engineered design calculation with relevant Indian Standards            • Students will develop skill of converting client's requirement to structural drawing by using ETABS.)</p>
Road Engineering	CUTM1070	2020	<p>Skill development(Students will gain knowledge on planning, material selection for construction, Economics and finance and designing of elements on highway.            Acquire the skill of designing the geometric elements of highway using CIVIL 3D software.)</p>
Construction Materials	CUTM1064	2020	<p>Skill development(Knowledge: Able to learn basic theory about main building- and construction materials.            Skills: Able to make right and well-founded choice of materials.            General competence: Understand how properties of materials that</p>



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			are important in engineering can be related to the characteristics of the material.)
Water Supply and Sanitary Engineering	CUTM1072	2020	Skill development(To understand the principles of treatment units and their design units of drinking water, solid and liquid waste water treatment units; its recycle, reuse or disposal methods along with hands on practice of house plumbing and sanitary fittings)
Computer-Aided Engineering	CUTM1081	2020	Skill development(Students will be able to Create complete finite element models Submit and monitor analysis jobs View and evaluate simulation results)
Hydraulic Machinery	CUTM1090	2020	Skill development(• After completion of the course, the students will have a strong foundation on the pertinent equations to engineering design of the machines for required applications. • Students will learn to determine performance characteristics of fluid machinery by using various simulation tools)
Fluid Mechanics with FVM	CUTM1089	2020	Skill development(• After completion of the course, the students will be able to evaluate finite difference/volume schemes on model problems of computational fluid dynamics. • Students will learn to develop steady state mechanical energy balance equation for fluid flow systems, estimate pressure drop in fluid flow systems)



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Theories of Failure analysis using FEA	CUTM1062	2020	Skill development(• Students will have knowledge and practical engineering skills in analysis of mechanical strength of structures and load transmission elements and will be able to design them based on input data. • Students will be able to deploy 3D Experience Platform to develop design solutions. • Students will be able to apply the Concept of Meshing and Failure Criteria to Practical Problems which will lead Economical and safe in Design Aspect.)
Database Management Systems	CUTM1059	2020	Skill development(Design ER-models to represent simple database application scenarios Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data Improve the database design by normalization Familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B tree, and hashing)
Programming in Java	CUTM1058	2020	Skill development( Able to use object oriented concept to solve problems
Remote Sensing & Digital Image Processing	CUAS2020	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and



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			<p>engineering problems            Design multi-criteria geospatial systems for decision-making process            Work in a team using geospatial tools and environment to achieve project objectives.            Pursue lifelong learning for professional advancement)</p>
Geospatial Technology and its Application	CUAS2021	2020	<p>Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems            Design multi-criteria geospatial systems for decision-making process            Work in a team using geospatial tools and environment to achieve project objectives.            Pursue lifelong learning for professional advancement)</p>
Photogrammetry and its Application	CUAS2022	2020	<p>Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems            Design multi-criteria geospatial systems for decision-making process            Work in a team using geospatial tools and environment to achieve project objectives.            Pursue lifelong learning for professional advancement)</p>



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Lidar Remote sensing and its Applications	CUAS2023	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Hyper-spectral Remote Sensing and its Application	CUAS2024	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Project	CUAS2025	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making



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			<p>process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>
Study of Drawings and Plan	CUCP2110	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Project Scheduling &Management	CUCP2111	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and</p>





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			<p>construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Site Study And Study on Contract Laws	CUCP2112	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils'</p>



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			ability to put their knowledge of theory into practice using forms of construction.)
Concepts Of Quality Control and Checking	CUCP2113	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs.</p> <p>Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.</p> <p>Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning.</p> <p>Students will plan various projects relating to advanced building technology with trust.</p> <p>Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant.</p> <p>Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Quantity Estimation and Equipment Management	CUCP2114	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs.</p> <p>Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.</p> <p>Give the students experience, supervision and direction in</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Site Supervision Project	CUCP2115	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>



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Critical Thinking and Presenting it with Digital Platform	CUSD2120	2020	Skill development(Strong understanding of architectural design and scope for innovative ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)
Scope to Enrich by Exposing them to BIM Modelling	CUSD2121	2020	Skill development(Strong understanding of architectural design and scope for innovative ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)
Design and Failure Analysis of Structure	CUSD2122	2020	Skill development(Strong understanding of architectural design and scope for innovative ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)
Amalgamation of Architecture and Civil Requirements using Generative Apps	CUSD2123	2020	Skill development(Strong understanding of architectural design and scope for innovative



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)</p>
Project	CUSD2124	2020	<p>Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>
IT Infrastructure Management	CUTM1024	2020	<p>Skill And Employability(Students developed skills to build and manage IT infrastrucur in Enterprise level using CISCO packet tracer)</p>
Cloud Practitioners	CUTM1025	2020	<p>Skill And Employability( Analyze and Understand the functioning of different components involved in Amazon web services and also acquire cloud technology skill for cloud partitioner certification which helps students in getting jobs in different MNCs)</p>
Wireless Networks	CUTM1026	2020	<p>Skill(Students developed Skills needed to install, configure, and</p>



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			troubleshoot WLAN hardware peripherals and protocols.)
Information Security	CUTM1027	2020	Skill And Employability(Students have done activities like network analysis, intrusion detection in the network and file integrity using different open source tool.)
OOPs with C ++ Programming	CUTM1028	2020	Skill And Employability(Case study to be given to students on uses of C++ program for development of various real time applications like online examination system, online quiz competition etc. )
Data Structures using C++	CUTM1029	2020	Skill And Employability(Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems)
Java Technologies	CUTM1031	2020	Skill And Employability(Understands the concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)
Database Creation and Maintenance	CUTM1033	2020	Skill And Employability( Hands on training on Client/Server Architecture- System Structure , Instance and schema, Data Models, Types of DBMS Query Processing and Optimization:



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			Evaluation of Relational algebra expressions-Query Equivalence-Transaction Processing: Built in SQL functions, Sub Queries-Joins-DCL – TCL- Views – Sequences – Index – Locks PL/SQL Basics – Exceptions – Cursors - Stored Functions – Triggers Case study in industrial standards of Database Management)
Database Cluster Administration and Security	CUTM1034	2020	Skill(Students will develop skill of developing new techniques in cluster deployment in real world Applications.)
Data Warehousing and Data Mining	CUTM1035	2020	Skill (Student will able to design data warehouse with dimensional modeling and apply OLAP operations.)
Android App Development	CUTM1036	2020	Skill And Employability(Understand Android UI design, activity and fragments, intents, notifications, SQL Lite are implemented. As a course project students should implement a mobile app with the app idea and design user interface/wireframes of mobile app and also set up the mobile app development environment)
Mathematical Problem Solving	CUTM1037	2020	Skill( Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach



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			for various problems. )
Advanced Java Programming	CUST2011	2020	Skill And Employability(Understands the advance concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)
ML for Predictive Analysis	CUML2002	2020	Skill And Employability(Implement ML algorithms that generates insight to high volume datasets and helps to make better prediction, classifications and clustering. The students are able to solve problems in areas computational finance and computer vision, energy and natural language processing.)
ML for Image Analytics	CUML2003	2020	Skill And Employability(Implemented different Real life Projects in the field of medical and Agricultural image processing)
ML for Hyperspectral imaging	CUML2004	2020	Skill And Employability(Implemented different Real life Projects in the field of medical and Agricultural hyperspectral images)
Internship	CUML2005	2020	Skill And Employability(Implemented different Real life Projects in the field of medical and Agricultural image processing)
Project	CUML2006	2020	Skill And Employability(Implemented different Real life Projects in the





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			field of medical and Agricultural image processing)
Advanced Hacking Techniques	CUCS2041	2020	Skill And Employability(Learned different white hat hacking tools to defend different cyber attacks)
System and Network Security	CUCS2042	2020	Skill And Employability(Learned different network security tools to defend different cyber attacks)
IT Data Security	CUCS2043	2020	Skill And Employability(Students able to detect different data leakage and able to prevent some of it )
Introduction to Gaming & Simulation	CUAR2060	2020	Skill And Employability(End to End Game Development Pipeline)
Game Assets & Game Objects	CUAR2061	2020	Skill And Employability(Able to built different models, assets and objects like temple, park, agriculture field etc..)
Building Game Environment	CUAR2062	2020	Skill And Employability(Able to built game environment)
Game Animation, Scripting & UI	CUAR2063	2020	Skill And Employability(Able to design different cartoon animations and UI)
Project	CUAR2065	2020	Skill And Employability(End to End Game Development Pipeline such as 3D games, model of konark temple)
Embedded System Programming with ARM-Cortex	CUTM1039	2020	Skill Development, Employability (Embedded System sectors to learn programming / Interfacing peripherals to ARM Cortex based Microcontroller)
VLSI Design (NSQF level 5)	CUTM1040	2020	Skill Development, Employability (Design combinational and sequential circuit using CMOS logic Enhancement of complex digital VLSI logic design skill of students



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			which will help them to complete any project work undertaken in higher semesters. Perform back-end physical design)
Electronic Devices and Systems	CUTM1046	2020	Employability (A broad introduction to electronic systems for students from diverse engineering disciplines, necessary foundation to understand the role, capabilities and constraints of electronics in contemporary engineering systems, provides basic understanding of the fundamentals and principles of analog and digital circuits and electronic devices. )
Electromagnetic Interference and Compatibility	CUTM1041	2020	Skill Development This subject is a base subject for wireless communication, Antenna Engineering and other advanced communication based subject.
Electromagnetic Field Theory & Transmission Lines	CUTM1042	2020	Skill Development Introduce theory and concepts of electromagnetic waves and transmission lines, Model and design the transmission lines at high frequencies, applying Smith chart use for solution of transmission line problems and impedance matching.
Network Analysis	CUTM1043	2020	Employability ( techniques of solving circuits involving different active and passive elements, analyze the behavior of the circuit's response in time domain, analyze the behavior of the circuit's response



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			in frequency domain, synthesize an electrical network from a given impedance/admittance function.)
Analog Communication Systems	CUTM1045	2020	Employability (Familiar with analog radio transmitters and receivers Verify the Noise performance of different Modulation Techniques)
Digital Communication Systems	CUTM1044	2020	Employability (Illustrate the classification of channels, Entropy coding methods and different types of Error control codes along with their encoding/decoding algorithms. Examine the Performance of different Digital Carrier Modulation schemes of Coherent and Non-coherent type based on Probability of error)
Principles of wireless communication	CUTM1047	2020	Skill Development and Employability Knowledge about the characteristic of wireless channel, designing of a cellular system, study the various digital signaling techniques and multipath mitigation techniques, understanding the concepts of multiple antenna techniques
Digital Signal & Image Processing	CUTM1048	2020	Employability (knowledge of time domain, frequency domain, discrete time signals, properties and digital filter design techniques, knowledge on basic concepts of image and its processing techniques, basic knowledge on Enhancement,



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			Restoration, Segmentation techniques)
Antenna Design and Analysis	CUTM104	2020	Employability (understanding the theory and fundamentals of antenna design, learning key aspects of practical antenna design, knowledge of a broad range of antennas such as dipole, loop, microstrip patch, horn, smart etc. )
Smart Phone Trouble shooting and Repair	CUCS2080	2020	Skill Development Basic of Mobile Repairing and Basic Electronics Hardware Repairing Software Repairing Basic and Advanced Troubleshooting
Satellite & TV Communications	CUCS2081	2020	Skill Development The fundamentals of satellite communication. To provide them with a sound understanding of how a satellite communication system successfully transfers information from one earth station to another. To expose them to examples of applications and tradeoffs that typically occur in engineering system design, and to ask them to apply the knowledge in design problems
RF Planning and Drive Test	CUCS2082	2020	Employability (Students will develop skill on GSM RF Planning tool, Use of mapping software's like Map info/Google KLM, drive test tool TEMS and NEMO Tool for 4G LTE optimization with field exposure This will lead employment as RF engineer)



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Cell site and BTS Installation	CUCS2083	2020	Employability (Adhere and conduct site PM (preventive maintenance) and Task Reporting planes, as per organization's Norms . This will lead employment in BTS operation & maintenance engineering. )
Microwave & RADAR Communications	CUCS2084	2020	Employability Appreciate the importance of microwave signal and learn important microwave devices. Describe the working principle of different RADAR systems and their applications
Project	CUCS2085	2020	Employability (Skill development course)
Real-Time Operating System and Porting	CUES2051	2020	Employability To make the student learn fundamentals of Operating Systems, Providing the knowledge on the implementation aspects of real time concepts. Providing the knowledge to build few applications on RTOS.
Embedded Linux on ARM	CUES2052	2020	Employability Provide an understanding of essentials of embedded Linux Explain the essential components-tool chain, kernel, bootloader and root file system. Describe the concept of ARM9. Introduce the concept of embedded Linux. Explain porting of Linux kernel and root file system to ARM9 board. Describe the implementation of application program on ARM9 board



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Project	CUES2053	2020	Employability (Skill development course)
ASIC Design	CUVL2070	2020	Employability ( Design and Analysis of Analog Circuits and Systems, Write Efficient Hardware Designs and Perform High Level HDL Simulations, Built an FPGA Embedded Solution using Xilinx / Altera FPGAs.)
Digital VLSI	CUVL2071	2020	Employability ( Design and Analysis of Digital Circuits and Systems, Write Efficient Hardware Designs and Perform High Level HDL Simulations, Built an FPGA Embedded Solution using Xilinx / Altera FPGAs.)
Analog VLSI	CUVL2072	2020	Employability ( Design and Analysis of Analog Circuits and Systems, Write Efficient Hardware Designs and Perform High Level HDL Simulations, Built an FPGA Embedded Solution using Xilinx / Altera FPGAs.)
Energy Production & Transmission	CUTM1051	2020	Skill development( Students will develop the skill of how energy is being produced and transmitted )
Substation Switch gear & Protection	CUTM1052	2020	Skill development( Students will develop the Skill of different substation, switchgear and its protection techniques)
System Modeling and Control	CUTM1053	2020	Skill development( Students will develop the skill of modelling the various systems and its control techniques)
Electrical Machines Operation and Control	CUTM1054	2020	Skill development( Students will develop the skill of operating



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			different electrical machines and its control techniques)
Industrial Power Electronics	CUTM1055	2020	Skill development( Students will develop the skill of using different power electronics converters and its industrial applications)
Digital Measurement and Instrumentation	CUTM1056	2020	Skill development( Students will develop the skill of measuring the instruments digitally)
Basic Electrical Engineering	CUTM1057	2020	Skill development( Students will develop the skill on various fundamental concepts of electrical engineering )
Introduction to Industrial Automation	CUIA2100	2020	Skill development(Students will develop skill of designing Automatic Control System using PLC)
Advanced Programming & Control Blocks of PLC	CUIA2101	2020	Skill development (Students will gain Functional skill set with hands-on; on System Automation by using relevent software & hardware tools)
Control & Signal Wiring of PLC	CUIA2102	2020	Skill development (Students will gain Functional skill set with hands-on; on Advnce Applications Such as Load Changing Automation in Power Networks by using relevent tools)
SCADA based advanced features	CUIA2103	2020	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevent software & hardware tools)
SCADA & PLC based sequential control	CUIA2104	2020	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by



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			using relevant software & hardware tools)
Human Machine Interface	CUIA2105	2020	Skill development (Students will gain Functional skill set with hands-on; on PLC based Automation System by using HMI-Allen Bradley-Panel View C600 tools)
OPC server base data fetching & control	CUIA2106	2020	Skill development (Students will gain knowledge about OPC server and network in automation)
Project	CUIA2107	2020	Skill Development (Students will develop different automation related project)
Internship	CUIA2108	2020	Skill Development (Students will undergo training for the industrial automation)
Introduction, Power Scenario, Power Quality & Fault clearance	CUEG2090	2020	Skill Development ( Students will get functional knowledge on different fault clearing techniques to improve power quality)
Switchyard & substation Networks	CUEG2091	2020	Skill Development ( Students will design the electrical grid network system with busbar arrangement in transmission & distribution system)
Protection scheme & Switchgear	CUEG2092	2020	Skill Development ( Students will develop different protection scheme with hardware & software integration)
Cable system & Testing	CUEG2093	2020	Skill Development ( Students will learn the three phase power cable layout system with the testing techniques in workshop)
Power Markets	CUEG2094	2020	Employability (Student will learn power market operation & energy audit process with hands on practice which will lead them to





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			placement in power & energy trading company)
Grid Safety	CUEG2095	2020	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques)
Transformer Manufacturing	CUEG2096	2020	Skill Development ( Students will Manufacture three phase Distribution Transformer of 11KV class as per BIS specification, during project work)
Project	CUEG2097	2020	Skill Development (Students will develop different electrical system & transformer related project)
Materials for Renewable Energy applications	CURE2190	2020	Skill Development (Students will learn and develop the different materials for Renewable Energy generation)
Renewable Energy Technology for Industrial Process	CURE2191	2020	Skill development (Students will gain Functional skill set with hands-on; on application of Renewable energy for the industry)
Micro-grid Design & Implementation	CURE2192	2020	Skill Development (Students will learn and develop the different Micro-grid Design and its application to fulfill the load requirement)
Hybrid Renewable Energy Systems	CURE2193	2020	Skill Development (Students will learn and develop the hybrid generations that combines the solar photovoltaic along with the Thermal power generations)
Solar Off-grid Entrepreneur	CURE2194	2020	Skill Development (Students will learn and develop the Entrepreneurship skill for the Development of different solar off grid project)



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Project	CURE2195	2020	Skill Development (Students will develop different renewable energy sources & solar related project)
Internship	CURE2196	2020	Skill Development (Students will undergo training for the renewable energy)
Computer Aided Drafting	CUTM1075	2020	Skill development (Students will be able to use CATIA for creation of 3D models, Assembly Designs and Drawings.)
Product Design and Development	CUTM1076	2020	Employability and Skill development (Student will understand and explain the concept of Industrial design and robust design concepts. Student will understand the concept of Design for manufacture and assembly.)
Reverse Engineering and Rapid Prototype	CUTM1077	2020	Employability and Skill development (Student will understand principles of imaging, cross-sectional scanning, digital data, computational graphics.)
Product Life Cycle Management	CUTM1078	2020	Employability and Skill development (Students will use ENOVIA Engineering BOM Management)
Manufacturing Process-process planning and Heat Treatment	CUTM1079	2020	Employability and Skill development (Student will understand the Importance of Materials, Manufacturing Processes, Process Planning & Design in Product Manufacturing)
Material in product design and development	CUTM1080	2020	Employability and Skill development (Student will understand the various material



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			selection for manufacturing processes. Students will be able to identify and select suitable material for product design. Students will be able to understand application of smart materials, shape memory metal, Nano material.
Quality Assurance	CUTM1082	2020	Employability and Skill development (Students will carry out statistical analysis of experiment, ANOVA ratio test and apply advanced DOE method for product testing. Students will understand SIX SIGMA process and lean production concept.)
Applied Ergonomics	CUTM1083	2020	Employability and Skill development (Students will be able to use the Human Ergonomics software to create an accurate simulation of a human entity and its work environment to ensure a natural operation)
Computer Aided Manufacturing	CUTM1084	2020	Skill development (Students will be able to create 2-D Geometry and 3-D models using various Command in Master CAM software. Simulation of CNC programs using Master CAM software.)
CNC Programming & CNC Machining	CUTM1085	2020	Employability and Skill development (Demonstrate and explain various CNC control Calculate technological data for CNC machining. Prepare programs, demonstrate, simulate and operate CNC milling machines for various machining operations)



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Design of Tools, Jigs and Fixtures	CUTM1086	2020	Skill development (To learn basic concepts, functions and design principles of Jigs, Fixtures and Dies)
Advance Metrology	CUTM1087	2020	Skill development (Student will have knowledge of basic measurement systems in Real time Engineering Applications.)
Thermodynamics	CUTM1088	2020	Skill development (To know the laws of thermodynamics and conditions for energy transformation)
Theory of Machines	CUTM1091	2020	Skill development (To develop skills for designing and analyzing linkages, cams, gears and other mechanisms.)
Heat Transfer with FDM/FVM	CUTM1092	2020	Skill development ( Students will be able to analyze and design various Equipment used in industry using principles of Heat Transfer.)
Introduction to Automobile Engineering	CUAE2170	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Subsystems of Automobile	CUAE2171	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The



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			students can also successfully run their own business in this field.)
Electric Vehicles	CUAE2172	2020	Employability and Skill development ( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Maintenance of Automobile	CUAE2173	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Project	CUAE2174	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Internship	CUAE2175	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research &



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			development, sales & service. The students can also successfully run their own business in this field.)
Introduction to composites	CUCD2130	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Composite materials and characterization	CUCD2131	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
CATIA-Composites Design	CUCD2132	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Composite Product Validation; Simulia	CUCD2133	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Machineries and Technologies used for Manufacturing of Composites	CUCD2134	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Quality control and Fabrication of Composite Structure	CUCD2135	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can



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			be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Project	CUCD2136	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Manufacturing Requirements and Planning (Jigs & Fixtures; Process Planning & Cost Estimation)	CUCM2150	2020	Employability and Skill development (Developing the visibility of skills and potentials of students in ways that are relevant to manufacturing need & employability and also promoting a production oriented learning method.)
Conventional Machining for Cylindrical and Prismatic Shape Components	CUCM2151	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
CNC Machining	CUCM2152	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Non-Traditional Machining and 3D Printing	CUCM2153	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of



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			latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Wood Engineering	CUCM2154	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Internship	CUCM2155	2020	Employability and Skill development(Students go to different corporate industry to carry out their internship for 3month duration.This help students to give specific skills followed by internships
Joining Processes and Technology	CUWI2160	2020	Employability and Skill development (ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self employed by opening a small scale welding shop to a medium scale industry.)



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Metal Transfer and Weld Metallurgy	CUWI2161	2020	Employability and Skill development ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self employed by opening a small scale welding shop to a medium scale industry.)
Design of Welded Joints	CUWI2162	2020	Employability and Skill development ( ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self employed by opening a small scale welding shop to a medium scale industry.)
Testing of Welded Joints	CUWI2163	2020	Employability and Skill development (ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self employed by opening a small scale welding shop to a medium scale industry.)
Advanced Structural Analysis	MTSE1101	2019	Skill development(• Skill in developing computer program for the structural analysis of two-dimensional frames. • To obtain some experience in the use of modern structural analysis programs.)
Structural Dynamics	MTSE1102	2019	Skill development(To provide basic knowledge of mathematics,



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system, component or process as per needs and specifications when subjected to dynamic loads.)
Theory of Elasticity & Plasticity	MTSE1103	2019	Skill development(• Ability to apply the knowledge of mathematics, science and engineering with Elasticity concept to solve problems in two Dimensional Problems in Polar Coordinates. • To provide the students with basic skill of plasticity concept applicable in structural systems)
Architectural Design	MTSE1104	2019	Skill development(Provide skill with a well-educated workforce that is ready and able to perform valuable architectural and construction engineering and managerial services immediately after graduation The ideas / concepts learned in Basic Design and other related subjects have to be carried forward into the architectural design now envisaged. The exercises may be taken up as mentioned herein.)
Bridge Engineering	MTSE1105	2019	Skill development(At the end of the course, the students have a skill to: • Design the slab culvert, Box culvert • Design the T beam bridge and substructures



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			<ul style="list-style-type: none"> <li>• Design the Bridge bearings</li> <li>• Design the steel bridge for railway)</li> </ul>
Computer Graphics	MTSE1106	2019	Skill development(At the end of the course, the students have a skill and employability to: Event driven I/O and callback programming & typical structure of an interactive, real-time computer graphics program " 2&3D transformations, homogeneous co-ordinates, post-multiplication " Modelling and instantiati)
MATLAB for Civil Engineers	MTSE1107	2019	Employability (Differential equations and its application to engineering problems Soft computing applications to engineering problems)
Finite Element Method	MTSE1201	2019	Skill development(• Enable the students to identify, formulate and skill to engineering problems related to one, two and three Dimensional structures subjected to static loads. • To show the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to wrong analysis)
Concrete Technology	MTSE1202	2019	Skill development(• To study and understand various types of technology added in concrete • Have a skill to develop in design of various grades of concrete)
Research Methodology & IPR	MTRM1201	2019	Skill development(1. Skill to research problem formulation.



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			2. Analyze research related information 3. Follow research ethics 4. Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.)
Structural Engineering Lab	MTSE1203	2019	"Skill development(To provide basic knowledge of mathematics, science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system, component or process as per needs and specifications when subjected to dynamic loads.)"
3D Modeling using ANSYS and CATIA	ISSE1205	2019	Skill development(Introduction to Engineering Design Different types of Numerical Methods & Applications, Practical Applications of FEA, Basics of finite element method (FEM),)
Design of Prefabricated Structures	MTSE0101	2019	Skill development(• Grasp of the construction methods using these elements have the skill of the construction methods using these prefabricated elements)
Renovation and Retrofitting of green structures	MTSE0102	2019	Skill development(By the end of this course students will have the skill /knowledge of • various distress and damages to concrete and masonry structures • the importance of maintenance of structures, types and properties of repair materials etc)
Advanced Construction Materials	MTSE0103	2019	Skill development(• To study the polymers in civil engineering



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			construction • To study the corrosion of concrete in various environments)
Soil Dynamics and Geotechnical Earthquake Engineering	MTSE0104	2019	Skill development(Develop skill in applying theory of vibrations to basic facets of soil behavior under dynamic loading together with the exposure of the fundamental principles of wave propagation in engineering example)
Industry Internship and Project - I	MTIP2101	2019	Employability(On successful completion of this course student will able to: • Get Experience of working conditions on live projects of company. • learn soft skill viz. Self-Confidence, widen Strong Work Ethic toward work, Positive Attitude towards work, develop effective Communication Skills, Time Management Abilities, Problem-Solving Skills etc. • Find successful employment after graduation.)
Industry Internship and Project - II	MTIP2201	2019	Employability(On successful completion of this course student will able to: • Get Experience of working conditions on live projects of company. • learn soft skill viz. Self-Confidence, widen Strong Work Ethic toward work, Positive Attitude towards work, develop effective Communication Skills, Time Management Abilities, Problem-Solving Skills etc.



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			<ul style="list-style-type: none"> <li>• Find successful employment after graduation.)</li> </ul>
Traffic Engineering And Management	ISTE1101	2019	Skill development( <ul style="list-style-type: none"> <li>• To learn traffic studies, their analysis and their interpretation.</li> <li>• To learn analysis of LOS.</li> <li>• To learn design of signal.</li> <li>• To learn transportation system management.)</li> </ul>
Pavement Materials And Construction	ISTE1102	2019	Employability( <ul style="list-style-type: none"> <li>• To learn about characteristic of subgrade soil.</li> <li>• To learn about characteristic of road aggregates.</li> <li>• To learn about characteristic of paving grade bitumen.</li> <li>• To learn about characteristic of cement used in road construction.)</li> </ul>
Transportation Infrastructure Design	ISTE1104	2019	Employability( <ul style="list-style-type: none"> <li>• To learn Geometric Design of Cross Sectional Elements of various types of roads.</li> <li>• To learn Geometric Design of Horizontal Alignment of Roads</li> <li>• To learn Geometric Design of Vertical Alignment of Roads.</li> <li>• To learn transportation system management)</li> </ul>
Pavement Material Lab	ISTE1106	2019	Skill development( <ul style="list-style-type: none"> <li>• To learn about characteristic of subgrade soil.</li> <li>• To learn about characteristic of road aggregates.</li> <li>• To learn about characteristic of paving grade bitumen.</li> <li>• To learn about characteristic of cement used in road construction.)</li> </ul>





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Traffic Survey Practice	ISTE1107	2019	Skill development(• Fieldwork using Hi-Tech surveying instruments • Clustering using field traffic data • Preparation of questionaries for OD survey
Pavement Analysis And Design	ISTE1201	2019	Skill development(• To learn about various factors affecting pavement design. • To learn about stress analysis of the pavement. • To learn about various methods of flexible pavement design. • To learn about various methods of rigid pavement design.)
Highway Project formulation and Economics	ISTE1202	2019	Employability(• To learn Geometric Design of Cross Sectional Elements of various types of roads. • To learn Geometric Design of Horizontal Alignment of Roads • To learn Geometric Design of Vertical Alignment of Roads. • To learn transportation system management)
Traffic Safety	ISTE1203	2019	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives.



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			Pursue lifelong learning for professional advancement)
Research Methodology For Engineers	ISRM1201	2019	Employability(Meaning of Research , Objectives of Research ,Motivation in Research ,Types of Research Research Approaches ,Significance of Research ,Research Methods versus Methodology Research and Scientific Method ,Importance of Knowing How Research is Done ,)
Survey Lab	ISTE1204	2019	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Transportation Engineering Design Practice	ISTE1205	2019	Skill development(Gain knowledge about the software used in transportation like surface creation, surface profile and cross section of roads.)
Remote Sensing And GIS for Transportation Engineering	ISTE1207	2019	Skill development(• Ability to understand the basics and characteristics of remote sensing. • Ability to process remotely sensed data. • Ability to draw information from remotely sensed data. • Ability to understand the basics



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			and application of GPS in transportation engineering)
Pavement Evaluation ,Rehabilitation and Maintenance	ISTE1208	2019	Employability(• To learn about characteristic of subgrade soil. • To learn about characteristic of road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)
Project Management	ISTE1209	2019	Employability(Identify functions of project management including estimating, job controls, field data collection, scheduling, accounting and design. * method that uses technology to measure cost and productivity through the full life-cycle of enterprise level projects * Contract Management and Tendering
Environmental Impact Assessment for Transportation Projects	ISTE1210	2019	Employability(• environmental issues in decision-making) .• impacts of transportation projects on air quality, society, economy, ecology and travel .• Ecological disturbances . Environmental Issues in Industrial Development
Industry Internship and Project-1	ISTE2101	2019	Employability(Student will be doing live project For 4 months in an Industry and submit a Project Report to concerned guide certified by the Industry Engineer)
Industry Internship and Project-II	ISTE2200	2019	Employability(Student will be performing internship for 3-months in



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			Industry and submitted a report and duly certified certificate from the competent Engineer in charge)
Computer Applications to Power System Analysis	MTPS1101	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
Non-Linear Control Systems	MTPS1102	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
Micro Controller Application with PLC	MTPS1103	2019	Skill development (Students will gain Functional skill set with hands-on; on Micro Controller & Application of Micro Controllers in System Dynamic by using relevant software & hardware tools)
SCADA- Compatible with all PLC	MTPS1104	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Advanced Electrical in Automation	MTPS1105	2019	Skill development (Students will gain Functional skill set with hands-on; on Advance Applications Such as Load Changing Automation in Power Networks by using relevant tools)
Sensors and VFD Interface to PLC and SCADA	MTPS1106	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by



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			using relevant software & hardware tools)
Digital Control System Applied to Power System	MTPS1201	2019	Skill development (Students will gain Functional skill set with hands-on; on Digital Control System Applied to Power System by using relevant software & hardware tools)
Power System Dynamics & Stability	MTPS1202	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
SCADA-Compatible with fixed brand of PLC	MTPS1203	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Distributed Control System	MTPS1204	2019	Skill development (Students will gain Functional skill set with hands-on; on Distributed Control System by using relevant software & hardware tools)
Power System Monitoring by HMI	MTPS1205	2019	Skill development (Students will gain Functional skill set with hands-on; on Power System Monitoring by HMI by using relevant software & hardware tools)
High voltage Engineering	MTPS0101	2019	Skill development (Students will gain Functional knowledge with hands-on; on high voltage engineering application in transformer workshop)
Optimization Techniques in Power System	MTPS0102	2019	Skill development (Students will gain Functional knowledge with



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			hands-on; on digital applications in power system techniques)
Digital Power System Applications	MTPS0103	2019	Skill development (Students will gain Functional knowledge with hands-on; on high voltage engineering application in transformer workshop)
Power Quality Analysis	MTPS0104	2019	Skill development (Students will gain Functional knowledge of power quality)
Non-Conventional Renewable Energy	MTPS0105	2019	Skill development (Students will gain Functional knowledge with hands-on; on different RE electriccity generation process)
Renewable Energy System Integration with Grid	MTPS0106	2019	Skill development (Students will gain Functional knowledge with hands-on; on RE system integration with grid application in transformer workshop)
Concepts of Smart Grid Technology	MTPS0107	2019	Skill development (Students will gain Functional knowledge with hands-on; on smart grid system operation)
Distribution System Engineering	MTPS0108	2019	Skill development (Students will gain Functional knowledge on power distribution system)
Power System Security	MTPS0109	2019	Skill development (Students will gain Functional knowledge with hands-on; on system security in power system)
Digital Signal Processing Applications in Power System Protection	MTPS0110	2019	Skill development (Students will gain Functional knowledge with hands-on; of DSP power system protection)
Industry Internship and Project – II/Dissertation	MTIP2102	2019	employability (Student will learn on power system operation & energy audit process with on the job training which will lead them



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			to placement in power & energy company)
Tractor and Automotive Engines	CUTM1130	2017	Entrepreneurship(To understand the working principle of different systems of internal combustion engines and tractor.)
Irrigation Engineering	CUTM1131	2017	Skill Development(Estimate the quantity of water required by different types of crop.)
Tractor Systems and Controls	CUTM1132	2017	Employability(Learning fundamentals of tractor chassis design and traction theory.)
Agricultural Structures and Environmental Control	CUTM1134	2017	Employability(To prepare estimate for different farm buildings, structures, roads, fencing and construction, repair and maintenance of farm structures.)
Soil-Water Conservation Engineering and Structure	CUTM1136	2017	Skill Development(Develop analytical thinking and problem solving skills in soil and water conservation engineering problems.)
Drainage Engineering	CUTM1138	2017	Entrepreneurship(Analyze the economic aspects of drainage projects.)
Tractor and Farm Machinery Operation and Maintenance	CUTM1142	2017	Employability(To acquire knowledge regarding makes and models of tractors, different systems and periodic maintenance tractors.)
Dairy and Food Engineering	CUTM1143	2017	Entrepreneurship(Acquaint the students with various dairy engineering operations such as homogenization, pasteurization, thermal processing, evaporation, freezing and drying of milk.)
Processing Technology of Cereals and Millets	CUFP2310	2020	(Skill development)Understand the concepts and principles of



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			processing and packaging techniques and the effects of processing parameters on product safety and quality
Processing Technology of Legumes and Oilseeds	CUFP2311	2020	(Skill development) know principles of processing and packaging techniques and the effects of processing parameters on product safety and quality
Processing Technology of Fruits, Vegetables, Spices	CUFP2312	2020	(Skill development) study of the effects of processing parameters on product safety and quality
Product Development and Packaging Technologies	CUFP2313	2020	(Employability) Gain insights into the scientific, regulatory, and consumer interests that interact in determining the safety of food
Food Standards and Regulations and HACCP Systems	CUFP2314	2020	(Skill development) Understand and develop HACCP plans based on the standards and regulations
Summer training-I	CUTM1939	2020	(Skill development) Students will be able to have real exposure to industries or Institutes to get training and acquire some practical exposure.
Pharmacognosy and Phytochemistry of Important Medicinal Herbs	CUTM1167	2020	(Skill development/Employability) Identification of medicinal herbs and gaining knowledge of their pharmaceutical use
Ayurveda and fermentation technology	CUTM1168	2020	(Skill development/Employability) Formulation of herbal dosage forms, leading to improved employability
Regulations & Certifications of Herbal Drugs	CUTM1169	2020	(Employability/Entrepreneurship) Learn about international regulations of herbal drugs, which will improve employability, also can help to set up own regulatory consultation firm





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Material Science of Excipients and Additives	CUTM1170	2020	(Skill development/Employability) Practical aspects of pharmaceutical dosage form formulation
Phyto-Pharmacology	CUTM1171	2020	Learn about different drugs and their pharmacological effects on human body
Thermodynamics	CUTM 1088	2020	(Employability and skill development) Designing of air-conditioning system and Estimation of air-conditioning load.
Human Anatomy and Physiology	CUTM1708	2020	(Skill Development) learn about human anatomy and physiology and gain knowledge about vital measurements
Heat and Mass Transfer	CUTM1525	2020	(Employability and skill development) learn about heat and mass transfer under industrial set up
Summer training-II	CUTM1940	2020	(Skill development) Students will be able to have real exposure to industries or Institutes to get training and acquire some practical exposure.
Cheese Technology	CUTM1158	2020	Employability and entrepreneurship (Industry oriented course. A student with a basic understanding on cheese preparation can find a job in different types of cheese industries).
Packaging of Dairy Products	CUTM1160	2020	Skill development (Students will get acquainted with the basics as well as new packaging technologies and utilize those packaging concepts in dairy industries and also in any packaging industry).



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Chemical Quality Assurance	CUTM1161	2020	Employability and skill development (The students can become internal and external auditor based on the knowledge about different food regulations in this course and also can get job in dairy industry as quality control executive).
Fat Rich Dairy Products	CUTM1150	2020	Employability and entrepreneurship (After completing this course students can get job in dairy industry in production department).
Microbiology of Dairy Products	CUTM1151	2020	Skill development and Employability (Students can go for higher studies (m.Tach and PhD) or can get job in quality control lab in dairy industry as a dairy microbiologist)
By Products Technology	CUTM1159	2020	Entrepreneurship and employability (Completion of this course can lead a student to drive their career into dairy, food and non-food industries to utilize the wastes in food and non-food (production of plastics, adhesives, gels) uses).
Food and Industrial Microbiology	CUTM1163	2020	Skill development (It is also purely industrial based course via. higher studies where students can be involved as industrial microbiologists/biotechnologists in various sectors. The key job role will be in developing and designing a process for production for industrial food products).
Sensory Evaluation of Dairy Products	CUTM1164	2020	Skill development (Students will be familiarized with the basic idea



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			on sensory evaluation of milk and other dairy products at platform level and apply it at industrial and research level).
Evolution of Management Thought	CUTM1181	2011	Application of Basic management principles- Skill development
Job Readiness	CUTM1182	2020	Analytical Ability, ability to plan & strategic, creative & logical thinking, attention to details, ability to recall (Working Memory), problem solving ability, communication skills (written), spatial ability articulation, data interpretation skills, active Listening, ability to visualize, adaptation skills, decision making, ability to analyze pattern & trends- Employability
Micro Economics	CUTM1184	2020	Utilize micro economic concepts and techniques to take business decisions Employability & Entrepreneurship
Data analysis through Microsoft Excel	CUTM1185	2019	Able to analyze data appropriately- Skill development
Economic Environment of Business	CUTM1186	2020	Analyze of policy environment to take appropriate decision - Employability
Operation Research	CUTM1188	2017	Manage and enhance the sales force productivity and performance:Employability & Entrepreneurship
Principles of Management	CUTM1189	2020	Application of Basic management principles- Employability
Basics of Design Thinking	CUTM1190	2020	Utilize design thinking for innovation - employability & Entrepreneurship



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Data Analysis and Visualization Using Python	CUTM1191	2020	Can use Python for data analysis and visualization.- Skill Development
Introduction to Robotics	CUTM1198	2020	Impact of Robotics in business & Management - Employability
Accounting for Managers	CUTM1199	2011	Preparation of financial statement, preparation of cost sheet and financial analysis of financial statements: Employability & Entrepreneurship
Marketing Management	CUTM1200	2011	Interpret complex marketing issues facing a variety of enterprises they would be employed in or setting up as entrepreneurs: Employability & Entrepreneurship;
Organizational Behaviour and Structure	CUTM1201	2011	Analyze and compare different models of Human Behaviour - Employability, Entrepreneurship
Talent Acquisition and Development	CUTM1202	2011	Assess, design and implement various methods, techniques and sources of training- Employability, Entrepreneurship
Marketing Research	CUTM1203	2011	Plan and undertake qualitative or quantitative Market Research and demonstrate the ability to appropriately analyze data to resolve marketing issues: Employability, Entrepreneurship
Corporate Finance	CUTM1204	2011	Utilize the concepts of financial management, investment, financing, working capital and dividend policy decisions: Use techniques of minimising risk in investment, techniques of leverage as well as optimum cost of capital structure of company.- Employability & Entrepreneurship



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Production & Operations Management	CUTM1205	2011	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship
Introduction to PLM (Platforms such as 3DS) <sup>5</sup>	CUTM1206	2020	Develop Product specification Document and digital prototype- Employability, Entrepreneurship
Designing User/Customer Experience (UX/CX)	CUTM1207	2020	Product Design & User experience - Skill Development
Supply Chain Management	CUTM1208	2020	Analyzing the manufacturing operations of a firm- Employability, Entrepreneurship
Advanced Managerial Accounting	CUFM2350	2015	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship;
Financial Institutions, Markets & Services	CUFM2351	2011	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;
Commercial Banking and ALM	CUFM2352	2011	Use techniques for Asset/Liability Management for smooth operation of the Bank. Employability
Security Analysis And Portfolio Management	CUFM2353	2011	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal & Financing	CUFM2354	2014	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship



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Current Asset Management	CUFM2355	2015	Use methods of determine optimum current assets level and appropriate working capital management policies to achieve corporate objectives - Employability and entrepreneurship
Robotics Process Automation (RPA) in Finance	CUFM2357	2020	Utilize skill set to work in finance with the help of Robot - Emloybility & Entrepreneurship,
Rural Marketing	CUMM2360	2015	Able to promote products and services in rural market: Employability & Entrepreneurship
Services & Financial Services Marketing	CUMM2362	2020	Design financial service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of customer service offerings: Employability
Brand Management & Consumer Behaviour	CUMM2363	2011	Analyze the relevance of consumer behaviour to the entire marketing process, the nature and stages of consumers' decision making and the factors influencing consumers' choices: Employability
Retail & Etail Management	CUMM2365	2020	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
Performance Management	MGHR2317	2011	Analyze and adopt different models of Human Behaviour to achieve desired performance- Employability
Organization Change and Development	MGHR2318	2011	Assess, design and implement various methods, techniques and sources of training- Employability
Human Resource Planning and Sourcing	MGHR2319	2015	Development, implementation, and evaluation of employee recruitment, selection, and



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			retention plans and processes- Employability, Entrepreneurship
Training and Development	MGHR2320	2011	Assess, design and implement various methods, techniques and sources of training- Employability & Skill development
Selling And Reporting Skills Of Pharmaceutical Product	CUTM 1610	2019	Handle pharmaceutical marketing efficiently-Employability, Entrepreneurship
Pharmaceutical Brand Management	CUTM 1611	2019	Development of brand of a product- Employability, Entrepreneurship
Pharmaceutical Sales and Distribution Management	CUTM 1612	2019	Increase pharmaceutical sales, develop promotional strategy,- Employability, Entrepreneurship
Business Analytics	CUTM 1613	2020	Use tools and technique to analyze data - Skill development
Drug Regulatory Affairs & Intellectual Property Rights	CUTM 1614	2019	Able to manufacture and sale of pharmaceuticals-Employability, Entrepreneurship
Financial Reporting & Analysis	CUTM 1616	2019	Analyze financial statements- Employability
Contemporary Development Communication	CUTM1218	2020	Communicate appropriately using tools for development - Employability
Data Analysis using Excel and Python	CUTM1241	2020	Can use Python for data analysis and visualization.- Skill Development
Development Project Management Planning Tools and Techniques-I	CUTM1242	2014	Knowledge and skills acquisition on Appraisal, Planning, and Monitoring & Evaluation and impact assessment of development projects - Skill development
Natural Resource Management	CUTM1243	2014	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
			management objectives- Employability and Entrepreneurship
Development Theory and Practice	CUTM1222	2020	Utilization of development theories in practical field- Employability and Skill
Development Project Management Planning Tools and Techniques-II	CUTM1223	2014	Knowledge and skills acquisition on Appraisal, Planning, and Monitoring & Evaluation and impact assessment of development projects - Skill development
Social Research Methods	CUTM1246	2018	Application of modern analytical tools and techniques for management decision making, research designing, sampling, analysis of data, hypothesis formulation and testing- Employability, Entrepreneurship
Strategic Management	CUTM1929	2020	Conduct analysis of competitive situations of the enterprise - Employability
Financial Inclusion and Micro Finance	CUTM1932	2017	To appraise the scenario of financial inclusion in the country , acquire skills to operate in Micro Finance sector - Employability, Entrepreneurship
Organization Behaviour	CUTM1933	2020	Analyze and compare different models of Human Behaviour for organizational effectiveness- Employability
Human Resource Management and Organisation Development	CUTM1934	2020	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability, Entrepreneurship
Public Policy: Design, Analysis and Implementation	CUTM1935	2020	Designing campaigns and implementation of policies- Employability and Skill





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Social Entrepreneurship and CSR	CUTM1936	2020	Promoting Social entrepreneurship and implementating CSR policies- Entrepreneurship
Digital and Social Media Marketing	CUTM1937	2020	Development and usages of social media marketing-Employability, Entrepreneurship
Local Governance systems	CUDM2357	2020	Developing collaboration with local government institutions- Employability
Rural Haat & Market Analysis	CUDM2358	2014	Assessing rural markets and develop appropriate marketing strategies - Employability, Entrepreneurship
Corporate Social Responsibility	CUDM2360	2017	Demonstrate a multi-stakeholder perspective in viewing CSR issues, Compare and contrast the multiple viewpoints and tradeoffs that exist in the area of CSR, design CSR startegies focusing agri sector- Employabilitiy, Skill Development
Disaster Management	CUDM2361	2017	To build skills and abilities in analyzing potential effects of disasters and the strategies to avert the disasters: Employability, Entrepreneurship & Skill development
Organizing Conference	CUDM2381	2014	Learning skills for organizing events - Employability, Entrepreneurship & Skill development
Managing Watersheds	CUDM2365	2020	Watershed management- Employability and skill
M&E of Development Projects	CUDM2366	2020	Project Mangement- Employability and Entrepreneurship



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Extension strategies for development	CUDM2355	2020	Implement development strategies- Employability
Fund Raising for Social Cause	CUDM2368	2020	Develop strategies for fund raising- Employability and Entrepreneurship
Fundamentals of Management	CUTM1209	2020	Apply appropriate managerial principles and theories on the work front- Employability and Entrepreneurship
Organisational Behaviour	CUTM1210	2015	Analyze and compare different models of Human Behaviour - Employability
Statistics for Business Decisions	CUTM1211	2016	Use appropriate sampling techniques, formulate the appropriate hypothesis, use the appropriate measures of central tendency, measures of dispersion, hypothesis testing technique, and interpret the results thereof- Employability, Entrepreneurship
Managerial Economics	CUTM1212	2015	make optimal decisions by integrating the concept of economics and business- make optimal decisions by integrating the concept of developmenteconomics and business- Employability
Business Accounting	CUTM1213	2015	interpret the nature and role of the principal financial statements (i.e., the Income Statement, the Statement of Financial Position, and the Statement of Cash Flows). Read, interpret and analyze financial statements; combine financial analysis with other information to assess the financial performance and position of a company;-



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Employability and Entrepreneurship
Macro Economics	CUTM1214	2015	Develop knowledge to apply macroeconomic perspective to solve business problems- Employability & Entrepreneurship
Principles of Marketing	CUTM1215	2015	Solving simple marketing issues facing by a variety of enterprises they would be employed in or setting up as entrepreneurs: Employability & Entrepreneurship;
Management Accounting	CUTM1216	2015	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Business Research	CUTM1217	2015	Formulate the hypothesis and conduct independent research- Employability
Financial Management	CUTM1219	2015	Utilize concepts of financial management, investment, financing, working capital and dividend policy in decisions: Employability & Entrepreneurship
Legal Aspects of Business	CUTM1221	2016	Adhere to legal framework for starting a business venture and running it successfully in conformity with legal parameters- Entrepreneurship and Employability
Advanced Managerial Accounting	CUTM1225	2020	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Financial Institutions, Markets & Services	CUTM1226	2020	Use techniques for raising funds from capital market and from different source- Employability
Commercial Banking and ALM	CUTM1227	2020	Use techniques for Asset/Liability Management for smooth



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			operation of the Bank. Employability
Security Analysis And Portfolio Management	CUTM1228	2016	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal & Financing	CUTM1229	2016	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Current Asset Management	CUTM1230	2020	Use methods of determine optimum current assets level and appropriate working capital management policies to achieve corporate objectives - Employability and entrepreneurship
Financial Analysis and Visualization	CUTM1231	2020	Solve problems through analytics- Employability & Skill Development
Robotics Process Automation (RPA) in Finance	CUTM1232	2020	Utilize skill set to work in finance with the help of Robot - Employability & Entrepreneurship,
Rural Marketing	CUTM1233	2020	Able to promote products and services in rural market: Employability & Entrepreneurship
Services & Financial Services Marketing	CUTM1235	2020	Design financial service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of customer service offerings: Employability



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Brand Management & Consumer Behaviour	CUTM1236	2016	Analyze the relevance of consumer behaviour to the entire marketing process, the nature and stages of consumers' decision making and the factors influencing consumers' choices: Employability
Retail & Etail Management	CUTM1238	2020	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
Environmental Science	CUTM1674	2020	Design and evaluate strategies, technologies and methods for sustainable management of environment- Employability
Summer Internship	CUTM1224	2015	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship
Business Environment	CUTM1695	2017	Analyze business environment and take appropriate decision Employability and Entrepreneurship
Financial Accounting	CUTM1677	2017	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Business Economics	CUBC2430	2017	Apply macroeconomic perspective to solve business problems-Employability & Entrepreneurship
Business Mathematics	CUTM1685	2017	Data analysis using mathematical function- Employability & Entrepreneurship
Business Law	CUTM1678	2017	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters- Employability & Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Business Statistics	CUBC2431	2017	Use statistical tools for managerial decision-making- Employability, Entrepreneurship
Management Principles and Applications	CUTM1683	2017	Application of Basic management principles in organizations- Employability
Computer Applications in Business	CUTM1686	2017	Utilize computer in the day to day activities of the business - Skill development
Fundamentals of Financial Management	CUTM1688	2017	Application of concepts of financial management, investment, financing, working capital and dividend policy decisions: Employability & Entrepreneurship
Human Resource Management	CUTM1681	2020	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability & Entrepreneurship
Corporate Laws	CUTM1680	2017	Utilize the minimum legal framework for starting a business venture and running it successfully in conformity with legal parameters-Empolyability & Entrepreneurship
Entrepreneurship Development	CUTM1692	2017	Develop business plan, assess the various opportunities and constraints for new business, develop entrepreneurial traits- Entrepreneurship
Indirect Tax Law / GST	CUTM1690	2017	Calculate and file GST, levy and collection of tax, input tax credit, IGST act GSTN etc.: Employability & Entrepreneurship
Principles of Marketing	CUTM1687	2020	Solving marketing issues faced by a variety of enterprises : Employability & Entrepreneurship;



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Financial Market Operation	CUBC2435	2017	Analyze Money market, Capital market, its instruments and apply the same in organizations- Employability
Cost Accounting	CUTM1684	2017	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship
Tally ERP 9	CUBC2432	2017	Preparation of financial statement of different types of organizations with Tally: Skill development
Corporate Accounting	CUTM1679	2017	Develop Accounting procedures used in corporates and the strategies involved in the corporate decisions.: Employability & Entrepreneurship
Internship-I	CUBC2436	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Auditing and Corporate Governance	CUTM1689	2017	Identify the areas of fraud and errors in the accounts and take corrective actions while presenting the audit report and streamline the governance system as per law: Employability
E-Commerce	CUTM1691	2017	carry out entrepreneurial activities electronically (E-commerce) Employability
Internship-II	CUBC2437	2017	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
Communication Research Methods	MAMC1101	2018	Analyze data with techniques of social science, media research - Skill development



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Introduction to Print & Electronic Media	MAMC1102	2018	Competence in Print and Electronic Media and can work in Print and Electronic Media industry-Skill development and Employability
Society, Media and Communication	MAMC0501	2018	Skill development and Entrepreneurship; Competence on the media business, its functioning and generate idea on inter relationship between media and society.
Cultural Studies	MAMC0903	2016	Skill development; Competence in the process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures
Advanced Digital Media	MAMC1103	2018	Students will be able to Competence skills in modern media and will be able to analyze advertising, Marketing, social networking and using social media for different purposes. - Skill development and Employability
Film studies	MAMC1105	2018	Students will be able to develop skills in different aspects of Film and will be able to analyze film-Employability
Advertising and Public Relations	MAMC1106	2018	After studying this paper student will be able to employ Public Relations and Advertising industry and its functioning.-Employability
Thesis	MAMC0301	2018	Employability: Analysing Media issues and analysis of media content.
Animation	MCDE0601	2016	Ability to create quality animation performance through a creative and professional portfolio using principles of animation. Will help





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			in Employability and Skill development
Radio Jockeying	MCDE0602	2016	Skill development in aggregate capacity to develop the skills of a Radio Jockey.
TV Anchoring	MCDE0603	2016	Skill development in the aggregate capacity to develop the skills of a Television Anchor.
Fashion Photography	MCDE0604	2016	Skill development: Developing competency for professional fashion photography.
Camera Operator	MCDE0605	2018	Skills development and Employability in camera handling and planning and producing programs for television and Photography.
Video Editor	MCDE0606	2018	Skill development in television field and its functioning. Build the ability to develop and demonstrate strategic plans and planning methods in television content production.
Web Content Development	MCDE0607	2016	Skill development and Entrepreneurship: Competence in Content development for web site or digital media.
Sound Engineer	MCDE0608	2018	Skill development on sound editing with different software.
Adobe tools and Illustrations	MCDE0609	2018	Work on Adobe Illustrator in the beginner level, and on graphics designing. Skill Development and Employability
Communication, Media and Society	CUTM1264	2020	Skill development in culture to influence nonverbal communication and cultural influences in communication process across society.



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Introduction to Journalism	CUTM1265	2020	Students enhance their skill and will able to design news and they have can deliver information-Skill development
Communication Research	CUTM1266	2020	Employability: Conduct research on different media elements, Conduct research on radio, TV, advertising and public relations Write research reports and project proposals-Skill development
Print Media Production	CUTM1267	2020	Student will able to get job on Social media- Employability
Exploring Hindi Cinema	CUTM1268	2020	After successful completion of the course the learners will be able to develop skill on the arts and aesthetic values of Hindi Cinema and India Panorama-Skill development and Employability
Television Journalism	CUTM 1270	2020	students will be able to write script, voice over and field reporting-Skill development The student will be able to produce a program from scripting to broadcasting everything can be done by a students. - Employability
Development Communication	CUTM1271	2016	Students will make strategy designing and campaign designing. They will enhance their skill and able to develop contents for development purposes-Skill development
Camera and Editing for TV	CUTM 1272	2020	Improve skills in contemporary video technology and operation of cameras, audio, lighting and other television production equipment Improve in film and video,



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			including shot composition and continuity editing-Skill development
Global Politics and Media	CUTM1274	2020	Students will enhance skill on impacts of different issues on global media scenario and global media culture-Skill development
Documentary	CUTM1275	2020	Develop skill to produce documentary cinema.-Skill development
Communication and the Plastic Arts	CUTM1276	2020	The learners will able to communicate in public space by using the plastic arts as the media for mass communication and Competence skill on appreciate the socio-cultural and religious institutions of India.-Skill development
Web Content Development	CUMC2383	2016	Skill development and Employability on technology and content of the world wide web, development of contents on web copy writing, digital news writing for various type of web sites. Skill development on write E-books, Blogs, E-Commerce content.
Radio Jockeying	CUMC 2380	2016	Skill development in aggregate capacity to develop the skills of a Radio Jockey.
Animation	CUMC2379	2020	Ability to create quality animation performance through a creative and professional portfolio using principles of animation.will help in Employability: and Skill development
Introduction to social media	CUMC2382	2018	Student will able to get employment on Social media



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Advanced characterization techniques	CUTM1402	2020	Skill development: To know the experimental techniques for the microstructural and physicochemical characterizations of materials and helps in optimizing material research.
Corrosion and advanced coating application	CUTM1404	2020	Employability: Learn about different surface coating technologies and to know substrate technology and its significance in obtaining high performance coating. Various methods for evaluating the performance of the coating.
Synthesis and application of nano composites	CUTM1405	2020	Skill development: To provide knowledge of the advantages of using different types of nanocomposites and to make the students familiar with the mechanism of nanocomposites. Employability: Students will understand and appreciate the significance of the nanocomposites as an important class of materials and they will be well equipped to design and develop nanocomposites for specialized applications
Material behavior of nanostructures	CUTM1406	2020	Skill development: It will enhance the ability of the students to explore various nano materials for different application areas depending on their properties.
Emerging materials	CUTM1407	2020	Employability: Students will be able to work in research and industrial set up on material research and the understanding of materials



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			behavior, or conceived, designed, and realized useful products and technology will be included.
Synthesis routes of nanomaterials	CUTM1408	2020	Skill development: To enhance the skill of the students for fabrication of various nano materials in cost effective routes and useful for device fabrication.
Computational materials science	CUTM1409	2020	Skill development: It will expose the students to the face the challenges in the analyze s of materials and how to address those challenges and get hands-on training on open source tools in Molecular Dynamics (LAMMPS) and Hartree-Fock and Density Functional Theory (Quantum Espresso); Data Visualization Tools like OVITO and VMD
Plasma technology	CUTM1410	2020	Employability: To understand fundamental characteristics of plasma, various plasma generation methods, various applications of plasma technology in nanomaterial synthesis, energy production and storage, medicine/health care, etc. and to acquire comprehensive knowledge of how plasmas are utilized for different types of materials processing specially in nanotechnology and developing advanced materials
Essentials of nanomaterials	CUTM1411	2020	Skill development: To understand and use the properties of Nano-materials in diverse fields and to gain knowledge about the Nanomaterials, their properties, behavior, interaction and use of



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			them over many discipline of science.
Advanced quantum mechanics	CUTM1412	2020	Skill development:To improve the ability of the student to co-relate the theory and the experiement and the gap between them for the material application using some advance simulation tools
Physics of solids and semiconductors	CUTM1413	2020	Skill development:Will be able to explain the physical characteristics such as electronic structure and optical and transport properties, and current-voltage characteristics of semiconductors and apply the knowledge of semiconductors to illustrate the functioning of basic electronic devices
Laser technology	CUTM1414	2020	Skill development:To acquire a thorough understanding of the theory of modern Laser Physics and understand different types of modern lasers and their applications
Industrial chemicals	CUTM1415	2020	Employability-Plastic Additive,Specialty Chemicals,Market Directed Specialty and Fine Chemicals,Management and treatments of Waste chemicals,Sustainable chemicals market and chemical safety. Skill-Extraction and isolation of Fine Chemicals,Selected Industrial process and all projects
Pharmacognosy and phytochemistry	CUTM1416	2020	Employability-The whole content of the syllabus



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Polymer chemistry	CUTM1417	2020	Employability-Fundamental ,Copolymerization,Radical Polymerization ,Ionic Polymerization ,Conducting Polymers Application of Polymers . Skill-Analysis of Polymers and All Practices
Packaging	CUTM1418	2020	Employability-Fundamentals of packaging ,Conversion technology ,Specialty packaging ,barrier properties Skill-Package Testing and all projects
Industrial pollution and its waste management	CUTM1419	2020	Employability-Fundamentals of pollution ,Water quality standard ,Methods of treatment of waste water ,Air pollution and its Permissible limit , Solid waste disposal and Management , Industrial water and air pollution Skill- Industrial Waste Water Treatment and all practices
Toxicology	CUTM1420	2020	Employability-Concepts of toxicology,Toxicity Pathways,Toxicity mechanism,Integrated Testing Strategies,Toxicity beyond chemicals,Ecotoxicology and Risk assessment,Toxicity remediation and Application of toxicants Skill- All Practices
Biopolymer and hydrogel	CUTM1421	2020	Employability-Fundamentals of biopolymers,Polymer biodegradation and biocomposites,Basics of biomaterials,Properties of Hydrogels,Applications of Hydrogels. Skill-Surface modification and characterization of biomaterials,Synthesis and



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			Characterization of hydrogels and all practices.
Nano-pharmaceuticals and biomedical science	CUTM1422	2020	Employability-Nanotechnology in Food and pharmaceutical industry ,Nanotechnology in Biomedical and Pharmaceutical Industry ,Nanotechnology in Agriculture ,Molecular Cell Biology ,Optical and non-optical probes ,Protein Labelling and bio-medical applications ,Target Identification and Drug designing Skill-A practical approach to antibody labelling
Synthetic organic chemistry	CUTM1423	2020	Employability-Fundamentals ,Organic Reagents ,Molecular Rearrangement ,Stereochemistry , Photochemistry,Pericyclic Reaction,Retrosynthesis Skill- All Practices
Energy storage system	CUTM1424	2020	Employability-whole content of Energy stoarage system syllabus
Sustainable chemistry	CUTM1425	2020	Employability-Fundamental,Green Chemistry,Green Solvents,Green Synthetic Methods,Value addition to Waste Biomass,Sustainable materials,Recycling and circular economy Skill-All Practices
Fluid Dynamics	CUTM1527	2020	Skill-To apply fluid dynamics problems using different tools. Employability - Methods describing Fluid motion, Lagrangian and Eulerian Methods
Graph Theory	CUTM1531	2020	Skill –To impart knowledge about tracing of graphs and network analysis Employability - Minimum





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			spanning trees;Fundamental Circuit;Cut set and Separability
Applied Number Theory	CUTM1534	2020	Skill- Enhance and reinforce the student's understanding of concepts through the use of technology when appropriate Employability - Divisibility, Representations of Integers,Computer Operations with Integers,Prime Numbers
TOPOLOGY	CUTM1536	2020	Skill - To introduce the student to maps between topological spaces Employability - student's ability to handle abstract ideas of Mathematics and Mathematical proofs
Herbal Cosmetic Technology	CUTM1427	2020	Employabilityand Skill- Students Completed practice on analysis of carbohydrates, protein, reducing sugars etc.
Plant Physiology and Metabolism	CUTM 1428	2020	Employability and Skill - Hand on Isolation of chloroplast and measurement of electron transport activity,Racker's experiment, role of uncouplers. Inhibitors of oxidative phosphorylation and prospects of C4 and C3 plants
Developmental Biology and Phytotomy	CUTM 1430	2020	Employability and Skill- understand the morphology and development of reproductive parts.Learn identification of plants based on cytotaxonomy, helps in forensic science, pharmagonosy and drug Development .This will be helpful for higher studies and research



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Systematics and Diversity of Plants	CUTM 1431	2020	Employability and Skill- Identification of plants based on morphology and cytotaxonomy, provide a comprehensive knowledge on diversity of plant kingdom with focus on all plant groups; algal biomass production and utilization, algal blooms and their environmental impacts, seaweed cultivation and utilization ; help to pursue higher studies and employability in National organization;
Advanced Separation Technologies and Downstream Processing	CUTM 1432	2020	Skill-Learn different extraction techniques, can handle advanced instruments to perform well at industrial level
Advances In Plant Ecology	CUTM 1434	2020	Employability and Skill- Learn to critically evaluate environment pollution issues, practice on E-waste management, smart waste management.
Computational Biology	CUTM 1435	2020	Employability and Skill- Hand on skill and practical knowledge on different databases., Sequence homology and Gene annotation etc.
Microbiology	CUTM 1436	2020	Employability and Skill-Students can do practicals and learnt on preparation and sterilization of media, plating, tubing, slanting of media, Isolation of bacteria in pure culture
Cell and Molecular Biology	CUTM 1437	2020	Employability and Skill-Perform comparative karyotypic analysis, techniques like extraction and separation of DNA by gel electrophoresis, squashing



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			technique for the study of different stages of mitosis and meiosis
Bioanalytical Techniques	CUTM 1438	2020	Skill-Students will be exposed to various biological techniques and their applications in identification, isolation of different biological molecules (DNA , RNA quantification, UV Spectrophotometry, PCR, ELISA, RIA, FISH and GISH); instrumentation and application
Plant Biotechnology	CUTM 1439	2020	Entrepreneurship- Learn the basics principles of plant sciences and molecular biology and their integration towards trait improvement in plants; laboratory techniques used in plant biotechnology,learn the industrial applications of biotechnology in developing new products; can undertake research in plant biotechnology, practice on production of synthetic seeds, plant regeneration via organ culture, and micropopagation, anther culture ect.
Plant Breeding and Genetics	CUTM 1440	2020	Skill-Learn to carry out specific plant breeding activities, such as selection of parental germplasm, conservation and recording of phenotypic variation and selection among progeny; mating systems, selection, testing and germplasm maintenance of horticultural and crop plants
Plant Genomics	CUTM 1441	2020	Skill-Learn to understand genomics and proteomics and the different approaches and



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>techniques employed in these fundamental fields of study; analyze information from plant genomic research and recognise its potential applications in crop improvement</p>
Advanced Aquaculture	CUTM1442	2020	<p>Skill - Systems of aquaculture - Pond culture , Pen culture, Cage culture and Running water culture, Aquaculture production and resource statistics- World and India, Principles of organic aquaculture.Pond Management - Pre stocking and Post stocking,Components of Aquaculture farms, Culture System - Monoculture and Polyculture System, Integrated culture systems.Practices on pre stocking and post stocking management, Biological factors affecting productivity of ponds. Study on waste accumulation in aquaculture system (NH3, Organic matter, CO2), Feed technology: Micro encapsulated feeds; micro coated feeds; micro particulate feeds and bio-encapsulated feeds; mycotoxins and their effects on feeds. Application of Nanotechnology in aquaculture.Analysis of manure, Health management: vaccines; molecular diagnosis of viral diseases; Biofilms and its impact on health management; genetically modified microorganisms as probiotics, Use of probiotics in aquaculture farms</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Animal Biotechnology	CUTM1452	2020	Employability - Media preparation, Role of important components of culture media; Common laboratory hazards and safety issues to consider in cell culture laboratory, Sterilization techniques used in animal cell culture, Preparation of media for animal cell culture, Opportunities and challenges in animal cell and tissue culture technology, Study of primary cell culture technique using chick embryo, Animal cell batch culture technique, Methods of producing transgenic farm animals; Reproduction biotechnologies and their use in livestock; Somatic cell nuclear transfer cloning; In Vitro Fertilization, Embryo production, preservation and transfer; Sperm and embryo sexing; Intracytoplasmic sperm injection (ICSI); Cryopreservation and gamete banking, Polyculture of fish for high yield; Edible oyster production; Pearl oyster production; Vermi-culture and vermicomposting for alternative and sustainable agriculture; Fish culture in flow through system and recirculation technology, Vermicompost preparation from plant debris, cattle dung and paper waste, Recombinant therapeutics and production of pharmaceuticals; Production of tissues and organs for humans and xenotransplantation,



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Preparation of competent cell (Calcium chloride treatment method)
Animal Breeding	CUTM1453	2020	<p>Employability - Problems relating to gene and genotypic frequencies under different conditions. Estimation of inbreeding in regular and irregular systems. Computation of quantitative genetic effects. Estimation of variance components. Computation of heritability, repeatability, genetic, environmental and phenotypic correlations and their standard errors. Estimation of breeding values from different sources of information. Prediction of direct and correlated response to different bases of selection :-</p> <ul style="list-style-type: none"> <li>a) Computation of realized heritability and genetic correlation.</li> <li>b) Selection index: Computation, Accuracy and response in component trait</li> <li>c) Estimation of heterosis for different types of crosses.</li> <li>d) Estimation of GCA and SCA</li> </ul>
Coastal Aquaculture	CUTM1447	2020	<p>Skill-Principles of pond design – Inland and Coastal, Tank and raceway farms, cage farms, pens – Types of culture systems: Traditional, extensive, modified extensive, semi extensive, intensive and super-intensive culture of shrimps and</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>their management, Economics of Shrimp Culture, Design and construction of shrimp culture ponds, Liming and fertilization in shrimp pond, Primary productivity calculation, Estimation by Light and Dark Bottle method. Transportation stocking in nursery ponds, rearing and growout ponds, pond harvesting of Shrimps, Principles of crab hatchery, brood stock, larval and post-larval management. Packing and transportation of crab instar and brood stock, Crab culture: Pond design, management of crab farm. Identification of important cultivable species, Crab culture and crab fattening process, economics of carb culture, Principles involved in seed production of lobsters and mussels. Cage Culture, Collection and identification of commercially important seed of fish and shellfishes, Pen culture, Potential Brackish water fish species for culture, Dissecting out the pituitary gland and preparing the extract. Culture of mullet, Culture of Cobia, Culture of Pompano, Lobster culture, Mussel culture, Pearl culture, Oyster culture, Sea-weed culture, Different types of Products obtained from seaweeds. Visit To shrimp hatchery/Farm, Methods of Shellfish Culture rafts, racks,</p>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			cages, poles and ropes, Sea ranching, Resources for shore-based aquaculture and sea farming in India, Regulation for mariculture., Estimation of seed survival.
Water and Soil Quality Management in Aquaculture	CUTM1443	2020	Skill - Fertilizers and manures: Different kinds of fertilizers and manures; fertilizer grade, source, rate and frequency of application; Use of treated sewage for pond fertilization and biofertilizers, Ecological changes taking place after fertilizing. Water analysis: measurement of temperature,turbidity, determination of pH and EC. Determination of inorganic nitrogen, and phosphorus. Utilization of bioactive compounds by microorganisms; Cat clay/pyrite soil and its management; seepage and its control. Estimation of primary productivity and chlorophyll. water treatment, water filtration devices, aeration, chlorination, ozonization and UV radiation; eutrophication; Algal bloom control; Aquatic weed management. Determination of salinity, Chlorinity, Total solids, Redox potential, DO, Free CO <sub>2</sub> ., Determination of total alkalinity, hardness. Waste water treatment practices; Waste discharge standards; Water quality management in carp culture; Water quality





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>management in brackishwater shrimp culture; Water quality management in hatcheries. Calculation of dose of fertilizers and pond liming. Soil and water amendments: lime, manures, fertilizers, micronutrients, zeolites, alum, gypsum, Effluent Treatment plant; Aeration, Chlorination, Ozonisation and UV radiation; Waste and water Treatment Practices; Machine Learning for water quality analysis.</p>
Anatomy and Biology of Fish and Shellfish	CUTM1446	2020	<p>Skill - Basic Structural Features, Body shape, scales, and fins, Internal features. Museum Specimen, Habitat, Biogeography, Marine Habitats, Freshwater Fishes, Slide preparation of scales, Food habit study. Hematological study, Techniques for Studying Food Habits and Feeding, Optimal Foraging Theor, Food Choices, Size, and Development, Food Capture, Biochemical study, Fertilization to Hatching (Incubation) Parental Care, Growth Writing Review literature, Discipline, Schooling, Orientation and Migration</p>
Fish Processing and Value addition	CUTM1448	2020	<p>Skill - Contribution of aquaculture, Implications for the processing industry, How to make your own fish food, Principles of canning, Packaging materials, Processing</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>operations , Canning of specific species, Dry fish preparation, Fresh fish packing, , Freezing systems , Environmental impact of freezing operations, : preparation of fish pickle, Sustainability Impacts of Fish-Processing Operations, On-board Fish Processing, On-board processing , Advantages of on-board processing, The fishmeal process , Alternatives to fishmeal,</p>
Fish and Shellfish Nutrition	CUTM1444	2020	<p>Skill - Principal Nutrients essential for feed formulation, Role of different nutrients on fish and shellfish growth, Nutritional requirement of cultivable fish and shellfish, Importance of Principle of Protein: Energy Ratio for aquaculture. General principles for feed formulation, Different steps of feed formulation, Methods of Feed formulation, Classification of feed ingredients, Energy and protein sources. Evaluation of ingredient quality, Types of feed Dry (pellets, flakes, powdered, Moist Feed), Micro-encapsulated, micro-bound and micro-coated diets, Feed manufacturing units and processes. Pulveriser, Grinder and Mixer (Types and importance), Pelletizer, Crumbler and Drier, Extruder and Fat sprayer, Hydro-stability of feed and their storage, Anti-nutritional factors in feed ingredients and methods of their, Principles of Nutritional energetic,</p>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Energy partitioning. Role of feed digestibility study in feed quality evaluation, Feed Management in Aquaculture Farms, <ul style="list-style-type: none"> <li>• Identification of Common feed ingredients</li> <li>• Preparation of artificial feeds using locally available feed ingredients</li> <li>• Proximate analysis of feed ingredients and feeds: Moisture, Crude protein</li> <li>• Proximate analysis of feed ingredients and feeds: Crude lipid, Ash</li> <li>• Preparation of feeds with various binders in order to determine their hydro-stability</li> <li>• Effect of Storage on Feed Quality and Determination of sinking rate feeds</li> </ul>
Animal Physiology and Biochemistry	CUTM1450	2020	Employability - • Study of T.S/L.S/V.S of digestive organs (Stomach,Liver,Kidney,intestine etc.) <ul style="list-style-type: none"> <li>• Study of TLC/DLC from prepared blood smear/Determination of ABO Blood group</li> <li>• Estimation of haemoglobin using Sahli's haemoglobinometer /Enumeration of RBC &amp; WBC using haemocytometer</li> <li>• Estimation of presence of lipid/carbohydrate from supplied sample by using spectrophotometer</li> <li>• Estimation of total protein content by</li> </ul>



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			spectrophotometer/Lowrey's Method • To demonstrate the effect of temperature/pH/concentration on salivary enzyme activity
Immunology and Cancer Biology	CUTM1451	2020	Employability - Cells and Organs of the Immune System, Structure and function of antibodies, Inflammation, To isolate the lymphocyte from whole blood by density gradient centrifugation method, Screening antisera or hybridoma supernatants for specific antibodies, To detect the presence of an antigen in a sample, To learn coupling of antibody to enzyme Horse Radish Peroxidase (HRP), Study of basic Ouchterlony's double immunodiffusion method, Tumor cell growth in different media,
Bioanalytical Techniques	CUTM1438	2020	Skill - To study and gain expertise on differential and cytological staining techniques, Demonstration of UV-vis Spectrophotometer, To separate proteins on the basis of their size and charge, To separate the amino acids in a mixture by thin layer chromatography. , Purification of immunoglobulins by affinity chromatography, To study the separation of DNA by agarose gel electrophoresis,
Fish and Shellfish Health Management	CUTM1445	2020	Skill - , stress in aquaculture and its role in disease development, pathological processes, quarantine and health certification in aquaculture,



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>health management strategies in aquaculture, environmental management, sanitary and phytosanitary agreement, vaccines used in aquaculture, immuno-stimulants used in aquaculture, , Bioremediation, viral diseases of fish, viral diseases of shellfish, bacterial diseases of fish, bacterial diseases in shellfish. crustacean parasites of fish, environmental induced diseases of fish, nutrition deficiency diseases,</p> <ol style="list-style-type: none"> <li>1. Examination of normal and diseased fish - thorough examination of external surface.</li> <li>2. Autopsy of the diseased fish.</li> <li>3. Histopathology of organs of diseased fish (sectioning – staining and mounting).</li> <li>4. Slide preparation of fish parasites (Protozoan – Helminth and Copepod).</li> <li>5. Collection of ectoparasites and its preservation.</li> <li>6. Extraction of DNA from fish fins.</li> </ol>
Ornamental Aquaculture	CUTM1449	2020	<p>Skill - External morphology of important marine aquarium fishes, External morphology of important fresh water aquarium fishes , Identification of common ornamental fishes and plants, Aquarium accessories and decorative, Lighting and aeration, Aquarium fish feeds. Dry, wet and live feeds, Setting up and maintenance of Aquarium</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>accessories and equipment, , Ornamental fish breeding - Brood stock maintenance, Breeding techniques of ornamental fishes, Nursery rearing of ornamental fishes, Transportation of ornamental fishes, Application of genetics and biotechnology for producing quality strains, Conditioning and packing of ornamental fishes. Preparation of feed, Ornamental Fish Farm Management Construction of commercial ornamental fish farm, Feeding and maintenance of stock, , Conditioning and packing of ornamental fishes. Preparation of feed, ,Management practices of backyard culture of ornamental fish, Conditioning, packing, transport and quarantine methods, Setting up of breeding tank for live bearers, barbs, goldfish, tetras, chiclids, gouramis, fighters and catfishes, Starting an aquarium shop – a business opportunity, Small scale ornamental fish farming business, Identification of ornamental fish diseases and prophylactic measures., Employability - Construction and setting of aquarium - Types of aquarium tanks, Construction of home aquarium, Setting up of home aquarium 1, Maintenance of aquarium (cleaning and water quality management), Feeding of</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			aquarium fishes Fabrication of all-glass aquarium
Genetics and Epigenetics	CUTM1454	2020	Skill - Identification of particular linkage groups with specific chromosome, Physical distance and map distance, Interference and coincidence, Preparation of Mitotic chromosomes from the given sample, To study the karyotyping of chromosomes from the given animal samples., To study the chromatin modelling and Chromatin-immunoprecipitation (ChIP), Isolation of total histones, and resolution on SDS-PAGE., Isolation of DNA from animal cell (Isolation of nuclei (as a source for studies on structure of chromatin) from rat/mouse liver by discontinuous sucrose-density gradient centrifugation, Dosage compensation in mammals, Genomic imprinting in mammals, Germline and pluripotent stem cells, Epigenetics and human disease., Identification of inactivated X chromosomes as barr body from the given sample, Preparation and study of metaphase chromosomes from mouse bone marrow,
Microbiology	CUTM1436	2020	Skill - Preparation of bacterial smear and staining – Gram's, Acid-fast, Staining of bacterial spores flagella, capsule, spirochaetes, Isolation, purification, identification and biomass production of



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>cyanobacteria, Methods for measurement of bacterial growth by haemocytometer and spectrophotometer, Microbial degradation of pesticides, toxic chemicals, oil; Bioleaching, bioremediation, Agricultural and food Microbiology</p> <p>Agriculturally important microorganisms, Mycorrhizae, Microbial mineralization, Microbial toxins, Biological control. Microbial toxins produced in food items, Probiotics and preBiotics, Methods of food preservation, Microbiological legal standards of selected food and milk products. , Estimation of phosphate solubilizing capacity of microorganisms, Qualitative analysis of Milk and milk products; Microbiological analysis of food products; Detection of bacteria in milk by Standard plate count, Antibiotic sensitivity test disc preparation; Antibiotic sensitivity test – Kirby – Bauer, Stoke’s; MIC determination by filter paper disc assay, Preparation of different microbial culture media, Genetic regulation: Operon concept (lac, trpara), Genetic mapping: Genome mapping of E. coli, QTL Mapping. Molecular markers in genome analysis, RAPD, RFLP, AFLP, FISH and GISH,</p>





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Thermal Physics	CUTM1485	2020	Employability - Laws of Thermodynamics, Carnot engine & efficiency. Carnot's Theorem. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Applications of Second Law of thermodynamics, Entropy, Thermodynamic Potentials, Kinetic Theory of Gases, Molecular Collisions, Real Gases. Skill- Thermal Physics Lab
Elements of Modern Physics	CUTM1491	2020	Employability - Radioactivity, Fission and Fusion, Lasers. Skill - Elements of Modern Physics Lab
Atomic Structure and Chemical bonding-I	CUTM1469	2020	Employability-Wave mechanics,Atomic structure-2,Periodic Properties-I &II,Ionic bond,Covalent bond, Covalent character in ionic compounds Skill-Practice 1 to 12
S- and P-block elements	CUTM1473	2020	Employability- General Principles of Metallurgy,Acids and Bases,Chemistry of s and p Block Elements I,II and III, Noble Gases,Inorganic Polymers .Skill-1 to 12.
Coordination Chemistry	CUTM1476	2020	Enterprenurship-Crystal Field Theory,Transition Elements Employability-Bio-inorganic Chemistry-1& 2 Skill- All practices
Electrochemistry	CUTM1478	2020	Employability-Conductance I,II, and III , Electrochemistry I.II Enterprernership-Energy Storage and Conversion, Skill- All Practices



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Bio-molecules	CUTM1479	2020	Employability-Amino acids, peptide and proteins, Enzymes, Bio-imaging and Bio-Medical science Entrepreneurship- Concept of Energy in Biosystems ,Pharmaceutical Compounds . Skill- All Practices
Spectroscopy	CUTM1482	2020	Employability- Carbohydrates, Enterprenurship-Dyes Skill- Chromatography and All practices.
Calculus	CUTM1511	2020	Skill- Tracing of different curves and functions. Employability - To explain about vector, different types of vector and vector algebra with suitable example
ANALYSIS-I	CUTM-1513	2020	Skill –• Describe the real line as a complete, ordered field. Employability - Determine the continuity, differentiability, and integrability
Ordinary Differential Equations	CUTM1514	2020	Skill –To understand solving Free Undamped Motion of a Spring System using Python and other skills Employability - Find power series solutions of 2nd order differential equations
Partial Differential Equations and System of Ordinary Differential Equation	CUTM1517	2020	Skill –Application of MATLAB in system of differential equations Employability - To practice heat and wave equations in 2D and 3D..
Numerical Analysis	CUTM1518	2020	Skill – Numerical Solution of different linear and non-linear equations using software.
Complex Analysis	CUTM1520	2020	Skill –Learn the Plotting of complex functions using Matlab



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			Employability - To get equipped with the understanding of the fundamental concepts of functions of a complex variable along with the concepts of analyticity, Cauchy-Riemann relations and harmonic functions.
Discrete Mathematical Structure	CUTM1522	2020	Skill –To work with different types of Sets, Lattices and Boolean Algebra using Python
Linear Programming	CUTM1523	2020	Skill - To demonstration of the utilization of Linear Programming Problems in industry and business. Employability - • Formulate the necessary and sufficient optimality conditions for linear programming and demonstrate the geometrical interpretation of these conditions
Phycology and Microbiology	CUTM1455	2020	Employability- Classification and identification of microbes and algae. Skill-Practice on staining procedure of different Algae and Bacteria. Hand on practice on Classification and identification of microbes and algae.
Biomolecules & Cell biology	CUTM1456	2020	Employability- Carbohydrates,Lipids,Nucleic Acids,Bioenergetics Skill- Students Completed practice on analysis of carbohydrates, protein, reducing sugars etc.
Mycology & Phytopathology	CUTM1457	2020	Skill-Practice on identification of different casuative agent of plant



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			pathogen like fungi, bacteria and virus and their management.
Anatomy of Angiosperms	CUTM1459	2020	Employability-Learn identification of plants based on cytotaxonomy, helps in forensic science, pharmacology and drug development. Skill- To gain hand on skills about the anatomical details of conducting tissues and secretory tissues.
Economic Botany	CUTM1460	2020	Entrepreneurship- Practice on Economic importance of Cereals, Legumes, Tea plant and Extraction of Essential Oil.
Basics of Genetics	CUTM1461	2020	Skill-Learn to carry out specific activities, such as selection of parental germplasm, conservation and recording of phenotypic variation and selection among progeny; mating systems, selection, testing and germplasm maintenance of horticultural and crop plants
Molecular Biology	CUTM1462	2020	Skill- Students can isolate plant DNA & quantification of extracted DNA by spectrophotometric method, plasmid DNA isolation and techniques and DNA sequencing
Plant Systematics	CUTM 1464	2020	Employability- Students can easily identified plants, prepared and deposited herbarium, they also practiced digital documentation of herbarium. Skill- Hands on skill on herbarium preparation.
Reproductive Biology of Angiosperm	CUTM1465	2020	Employability -Keen Observations of some of the variation in



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			<p>different parts of sample fruits, and relate these modifications to changes in function, significance of angiosperm gametogenesis and fertilization, including double fertilization. Help to pursue higher studies.</p> <p>Skill -Hands on skill on Pollen viability: Tetrazoliumtest. Germination: Calculation of percentage germination in different media using hanging drop method.</p>
Plant Physiology	CUTM1466	2020	<p>Employability- A keen observation and application of Plant water relationship and Growth regulators.</p> <p>Skill-Hand on practice on calculate the area of an open stoma and percentage of leaf area open through stomata; Study the phenomenon of seed germination</p>
Plant Metabolism	CUTM1467	2020	<p>Employability- Students isolate and quantify the biomolecules, metabolites present on plants and analyze them.</p> <p>Skill- Hand on skill of bioassay of Avena coleoptile.</p>
Plant Biotechnology	CUTM1468	2020	<p>Entrepreneurship- Learn the basics principles of plant sciences and molecular biology and their integration towards trait improvement in plants; laboratory techniques used in plant biotechnology.</p>
Developmental Biology	CUTM1509	2020	<p>Employability - Late Embryonic Development: Fate of Germ Layers, Extra-embryonic</p>



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			membranes in birds, Implantation of embryo in humans, Placenta (Structure, types and functions of placenta), Post Embryonic Development. Metamorphosis: Changes, hormonal regulations in amphibians and insects., Ageing: Concepts and Theories, Implications of Developmental Biology Teratogenesis: Teratogenic agents and their effects on embryonic, development, In vitro fertilization ,Concept of Stem cell, Amniocentesis, 5. Study of Whole mounts of chick embryo 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation,
Principles of Genetics	CUTM1508	2020	Employability - Genetic and environmental basis of sex determination; Chromosomal mechanisms of sex determination in Drosophila and Man., Criteria for extra-chromosomal inheritance, Antibiotic resistance in Chlamydomonas, Mitochondrial mutations in Saccharomyces, Infective heredity in Paramecium and Maternal effects, Complementation Test in Transposable Genetic Elements: Transposons in bacteria, Ac-Ds elements in maize and P elements In Drosophila, Transposons in humans.
Diversity of Chordates	CUTM1501	2020	Employability - General characteristics of Chondrichthyes and Osteichthyes, Classification up to order Migration,



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			<p>Osmoregulation in fishes, Parental care in fishes, Parental care in Amphibians &amp; Neoteny, General characteristics and Classification of Reptilia, Affinities of Sphenodon, Poison apparatus and biting mechanism in snakes, Adaptive characteristics of crocodile, General characteristics and classification (up to order Archaeopteryx), Principles and aerodynamics of flight, Flight adaptations, Migration in birds.</p> <ol style="list-style-type: none"> <li>1. Museum specimen on Protochordata- Balanoglossus, Herdmania, Branchiostoma</li> <li>2. Sections of Balanoglossus through proboscis and branchio-genital regions</li> <li>3. Museum specimen on Petromyzon, Myxine</li> <li>4. Museum specimen on : Fishes- Scoliodon, Pristis, Torpedo, Chimaera</li> <li>5. Museum specimen on Labeo, Exocoetus, Echineis, Anguilla, Hippocampus, Tetrodon/ Diodon, Anabas</li> <li>6. Museum specimen on- Amphibia: Ichthyophis/Ureotyphlus, Necturus</li> <li>7. Bufo, Hyla, Alytes, Salamandra</li> <li>8. Museum specimen on Reptilia Hemidactylus, Varanus, Uromastix, Chamaeleon, Draco</li> <li>9. Draco, Vipera, Naja, Hydrophis (Identification of poisonous and non-poisonous snakes)</li> </ol>



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			10. Aves :Study of two common birds from different orders 11. Aves :Study of types beaks and claws 12. Mammalia Sorex, Bat (Insectivorous and Frugivorous), Funambulus, Loris, Herpestes, Erinaceous
Biochemistry of Metabolic Processes	CUTM1506	2020	Employability - Sequence of reactions and regulation of glycolysis & Gluconeogenesis, Citric acid cycle and significance, Phosphate Pentose Pathway (Role and significance), Glycogenesis, Glycogenolysis 1. To demonstrate the effect of temperature on enzyme activity 2. To estimate the carbohydrate content of supplied tissue by Spectrophotometry method 3. To estimate the glycogen content of supplied tissue by colorimeter method 4. To estimate the lipid content from the given sample 5. To estimate the protein content of supplied tissue by colorimeter method 6. Estimation of total protein content in the given sample by Lowry's /Barfoed's Method 7. To estimate amino acids from a mixture by using chromatography (paper/Thin layer) 8. To estimate amino acids from a mixture by using chromatography (paper/Thin layer) 9. Determination of SGPT in given





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			<p>sample by using available kit.(Chick/Goat Serum)</p> <p>10. Estimation of known and unknown protein</p> <p>11. Preparation of Standard Curve of Bovine serum Albumin</p> <p>12. Study the enzymatic activity of Trypsin and Lipase</p>
Principles of Ecology	CUTM1499	2020	<p>Employability - Population: Unitary and Modular populations</p> <p>Unique and group attributes of population: Density, nasality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. Exponential and logistic growth, equation and patterns, r and K strategies, Population regulation - density-dependent and independent factors</p> <p>Population interactions, Gause's Principle with laboratory and field examples, Lotka-Volterra equation for competition and Predation, functional and numerical Responses., Ecosystem: Types of ecosystems with one example in detail, Food chain: Detritus and Grazing food chains, Linear and Y-shaped food chains, Food web.</p> <p>. Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided., Determination of population density in a natural/hypothetical community by quadrate method and calculation of Shannon-</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Weiner diversity index for the same community., Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, turbidity/penetration of light, determination of pH, and Dissolved Oxygen content., (Winkler’s method), Chemical Oxygen Demand and free CO<sub>2</sub>., Report on a visit to National Park/Biodiversity Park/Wild life sanctuary.</p>
Cell Biology	CUTM1500	2020	<p>Employability -Cell Division and Cell cycle: Mitosis, Meiosis; Regulation of cell cycle. Cell Signaling: Overview of cell signaling, signaling molecules and receptors, GPCR, Second messengers, Role of second messenger (cAMP) in cell signaling, Activation of gene transcription by GPCR,</p> <ol style="list-style-type: none"> <li>1. Cell Organization and Sub Cellular Structure Studies</li> <li>2. Gram’s staining technique for visualization of prokaryotic cells</li> <li>3. Counting of cells using Hemocytometer</li> <li>4. Study of cell attachment</li> <li>5. Study of cell proliferation</li> <li>6. Isolation of Endoplasmic Reticulum</li> <li>7. Isolation and microscopic study of mitochondria</li> <li>8. Study the presence of Barr body in human female blood cells/cheek cell</li> </ol>



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			9. Study of Actin Assembly 10. Study various stages of mitosis using permanent slides 11. Study various stages of meiosis using permanent slides 12. Maintenance of mammalian cell lines
Fundamentals of Biochemistry	CUTM1503	2020	Employability - Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation; Concept of $K_m$ and $V_{max}$ , and Lineweaver-Burk plot; Multi-substrate reactions. 1. Qualitative tests of functional groups in carbohydrates 2. Qualitative tests of functional groups in lipids. 3. Qualitative tests of functional groups in protein 4. Separation of amino acid using Paper Chromatography. 5. Quantitative estimation of salmon sperm/calf thymus DNA using colorimeter (Diphenylamine reagent) or spectrophotometer ( $A_{260}$ measurement) 6. Action of salivary amylase under optimum conditions. 7. Effect of different pH on salivary amylase activity. 8. Demonstration of proteins separation by SDS-PAGE. 9. Effect of different Temperature on salivary amylase activity. 10. Effect of inhibitor on salivary amylase activity
Animal Physiology: Controlling and Coordinating System	CUTM1502	2017	Employability - Components of blood and their



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			<p>functions, Structure and functions of haemoglobin, Haemostasis, Blood clotting system, Kallikrein-Kininogen system, Haemopoiesis Blood groups: Rh factor, ABO and MN.</p> <ol style="list-style-type: none"> <li>1. Preparation of temporary mounts: Squamous epithelium, Striated muscle fibres and nerve cells</li> <li>2. Preparation of permanent slide of liver/skeletal muscle/any other tissue of given specimen.</li> <li>3. Determination of blood groups</li> <li>4. Preparation of blood smear from blood cells.</li> <li>5. Estimation of haemoglobin using Sahli's haemoglobinometer</li> <li>6. Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex)</li> <li>7. Anatomical model of eye .</li> <li>8. Anatomical model of ear .</li> <li>9. Study of permanent slides of various Mammalian tissues</li> <li>10. Study of slides of endocrine glands</li> <li>11. Identification of histological slides of lymphoid tissue</li> <li>12. Preparation of permanent slide of any five mammalian (goat/chick) tissues by microtomy</li> </ol>
Evolutionary Biology	CUTM1510	2017	Employability - Phylogenetic trees , Multiple sequence alignment , constructions of phylogenetic trees



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Fundamentals of Horticulture	ASHO1101	2018	Understanding the fundamentals of various aspects of horticulture crops :Employability
Fundamentals of Plant Pathology	ASPP1101	2018	Understanding the fundamentals of plant disease causing organisms and their management: Employability
NSS/NCC/Physical Education & Yoga Practices	ASPE1101	2018	Understanding and application of different yoga asanas and pranayama techniques for physical and mental well-being :Skill & Employability
Comprehension & Communication Skills in English	ASEL1101/	2018	Develop knowledge of english communication through presentation, extempore and GD: Skill & Employability
Irrigation water management	ASAG1206	2018	Understands the practices of water management and its application in irrigation management : skill dev.& Employability
Production Technology for Vegetables and Spices	ASHO1203	2018	Understanding the different methods i.e. seed treatment and vegetative propagation for the production of vegetable crops: entrepreneurship & skill
Fundamentals of Entomology –I (Insect Morphology and Taxonomy)	ASEN1201	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Crop Production Technology – I (Cereals, millets and pulses) Kharif crops	ASAG2103	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Fundamentals of Entomology- II (Insect ecology and concepts of IPM)	ASEN2102	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability



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Weed management	ASAG2105	2018	Identification of Weeds and its management in different crops : Employability
Production technology of fruits and plantation crops	ASHO2102	2018	Understanding the different methods i.e. grafting, budding and layering for production of fruit and plantation crops: entrepreneurship & skill
Agricultural Informatics	ASAI2101	2018	To disseminate, capture, access information to achieve sustainable use of agricultural resources : employment.
Communication skills and personality development	ASEE2104	2018	Develop knowledge of english communication through presentation, extempore and GD: Skill & Employability
Crop Production Technology –II (Oil seeds, fiber, sugar, tobacco, and fodder Crops) Rabi crops	ASAG2204	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Production Technology for Ornamental Crops, MAP and Landscaping	ASHO2204	2018	To gain expertise in production of ornamental crops and landscaping : , Employability & skill development
Rain-fed Agriculture & Watershed Management	ASAG2211	2018	Understanding the methods of rainwater harvesting and groundwater rechargement :Employability
Principles of seed technology	ASPG2202	2018	Gaining knowledge in seed storage, certification and marketing ways: employment
Diseases of Field and Horticultural Crops and their Management –I	ASPP2202	2018	Identification and management of diseases of field crops :employability
Entrepreneurship Development and Business Communication	ASEE3103	2018	Development of enterpreneurial mindset and entrepreneurial skills for building a start-ups: skill dev



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Pests of field Crops and Stored Grain and their Management	ASEN3103	2018	Identification and management of store pest and management of field crops :employability
Diseases of Field and Horticultural Crops and their Management-II	ASPP3103	2018	Identification and management of diseases of horticultural crops :employability
Crop Improvement-I (Cereals,millets,pulses and oil seeds etc)(Kharif crops)	ASPG3104	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Principles of food science and nutrition	ASFS3101	2018	Identification of microbes in food processing and packaging: employability
Geoinformatics and Nano-technology for Precision Farming	ASAG3110	2018	To gain knowledge in nano materials and geoinformatics applicaions i.e. moonsoon tracking system, drainage networks for precision farming:Employability, skill and enterprenureship
Farming System & Organic farming for Sustainable Agriculture	ASAG3207	2018	To gain expertise in organic farming practice: Employability, skill development and Entrepreneurship
Post-harvest Management and Value Addition of Fruits and Vegetables	ASHO3205	2018	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development
Pests of horticultural crops and their management and Beneficial Insects	ASEN3204	2018	Identification and management of crop & storedgrain pests :employability & skill dev
Crop Improvement-II (fibre, sugar, starches, narcotics, Vegetables, fruits, and flowers)	ASPG3205	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability



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Principles of Integrated Pest and Disease Management (50% Entomology and 50% Pathology)	ASPP3204	2018	Identification of insects pests of different crops and its integrated pest management- Entrepreneurship& skill dev,employability
Protected cultivation and post harvest technologies	ASAE3204	2018	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development
Intellectual Property Rights	ASIP3201	2018	Understanding the process to file patent and register for copyrights:skill and Employability.
Agribusiness Management	ASFE2207	2018	Understanding agriculture and allied business along with building skills i.e. marketing of agri-based products : Skill &Entrepreneurship
Agrochemicals	ASFE2206	2018	Gaining information on different types of agrochemicals used in agriculture: Entrepreneurship
Commercial Plant Breeding	ASFE2204	2018	Understanding of commercial plant breeding techniques i.e. emasculation, crossing and storage practices :Employability & skill development
Food safety and Standards	ASFE2201	2018	Understanding the different food safety principles i.e. pasturization, canning etc: Skill
Biopesticides & Biofertilizers	ASFE2205	2018	Understanding the techniques involved in biopesticide and biofertilizer production: Skill &Entrepreneurship
Micro propagation Technologies	ASFE2208	2018	Gaining knowledge in different micro irrigation techniques i.e. sprinkler and drip irrigation: Skill &Employability





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Hi-tech. Horticulture	ASFE2202	2018	Gaining knowledge in different techniques i.e. vertical farming and hydroponics of hitech horticulture: skill & Employability
Remote Sensing & GIS Applications	ASFE2209	2018	Understanding the applications of remote sensing i.e. analyzing the condition of rural roads and detecting land use: Employability, Entrepreneurship and Skill development
Climate Smart Agriculture	ASFE2210	2018	Gaining knowledge on the usage of drones in agriculture for crop improvement: Employability, Entrepreneurship and Skill development
E-Agriculture	ASFE2212	2018	Gaining knowledge in technology dissemination, and information delivery through the advances in ICT: Entrepreneurship
Agricultural Waste Management	ASFE2203	2018	Understanding the various methods for agricultural waste management i.e. green waste, waste silage: Skill development
Principles of Aquaculture	ASFE2213	2018	Understanding the various methods i.e. breeding, raising and harvesting in fish production :Employability, Entrepreneurship and Skill development
RAWEP	AGRW4101	2018	To impart diagnostic and remedial practical training and skills in crop production/horticulture/plant protection through work experience: Employability, entrepreneurship and skill development.
AELP	AGEL4201	2018	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project



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			mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Organic Farming	CUOF2230	2020	Production of organic vegetables & fruits- Entrepreneurship & skill dev
Certification and Inspection Systems in Organic Farming in India	CUOF2231	2020	To understand about the quality and safety standards of organic goods-Employment
Biopesticides and Biofertilizers	CUOF2232	2020	To understand the production of Bio fertilizers i.e. VAM, PSB, AZACTOBACTER- Entrepreneurship & skill dev
Organic production-field crops	CUOF2233	2020	To understand about the quality and safety standards of organic field crops-Employment
Organic production-horticultural crops	CUOF2234	2020	To understand about the quality and safety standards of organic horticultural crops-Employment
Biofertilizer and Biopesticide Production Technology	CUOF2235	2020	Understanding the techniques involved in biopesticide and biofertilizer production: Skill & Entrepreneurship
AELP Project	CUOF2236	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Breeding methods: conventional and molecular approach	CUSP2260	2020	Gaining expertise in breeding of varieties of Vegetable, Tuber and Spice Crops - Entrepreneurship & skill development
Seed production of vegetable and cereals crops	CUSP2261	2020	Gaining expertise in seed production of cereal crops-



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			Entrepreneurship & skill development
Hybridization techniques	CUSP2263	2020	Understand the principles of hybridization and its implementation in crop improvement: Skill
Vegetable Seed production	CUSP2264	2020	Understanding and hands on training work with different vegetable seed production: Skill, entrepreneurship
Cultivar purity and seed quality testing	CUSP2265	2020	Gaining expertise in seed quality testing of pure cultivars - Entrepreneurship & skill development
AELP Project	CUSP2266	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Computational Biology	CUGE2270	2020	Employment: Molecular modelling of Biomecules using bioinformatics tools
Genetic Engineering and its applications	CUGE2271	2020	Employment: Production of genetically modified varieties using advanced molecular techniques
Molecular Genomics	CUGE2273	2020	Understanding the principles of molecular biology. Production of genetically modified varieties using advanced molecular techniques Employment:
Plant Tissue Culture Technologies	CUGE2274	2020	Learning about cultures for purity and rapid multiplication of planting materials: Skill, entrepreneurship



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Techniques in Molecular Biology	CUGE2275	2020	Employment:Production of genetically modified varieties using advanced molecular techniques
AELP Project	CUGE2276	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship,skill dev.and Employability.
Introduction to Nutraceutical	CUNU2280	2020	Employment:Production of nutritional enriched foods
Functional Food	CUNU2281	2020	Employment:Production of nutritional enriched foods
Nutrigenetics	CUNU2282	2020	Employment:Production of nutritional enriched foods
Development of Personalized Food and Medicine	CUNU2283	2020	Employment:Production of nutritional enriched foods
Development of Biopesticides and Biofertilizers	CUNU2284	2020	Understanding the techniques involved in biopesticide and biofertilizer production: Skill &Entrepreneurship
Development of Immune Boosters	CUNU2285	2020	understanding the methods involved in the development of immune boosters
AELP Project	CUNU2286	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship,skill dev.and Employability.
Applied hi-tech horticulture	CUAG2290	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev



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Protected cultivation of vegetable crops	CUAG2291	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
High-tech fruit culture	CUAG2292	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Management of high-value cut-flowers	CUAG2293	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Management of crops in hydroponics	CUAG2294	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Use of smart tools for precision crop management	CUAG2295	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
AELP Project/Industrial internship	CUAG2296	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Applied hi-tech horticulture	CUPH2300	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Protected cultivation of vegetable crops	CUPH2301	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
High tech fruit culture	CUPH2302	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Production technology of cut flowers & loose flowers	CUPH2303	2020	understanding the Scope and importance of cut and loose flowers- Entrepreneurship & skill dev
Protected floriculture	CUPH2304	2020	Production of high value floriculture crops under



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			controlled environment- Entrepreneurship & skill dev
Production management of medicinal and aromatic crops	CUPH2305	2020	Understanding the importance and practices for production technology of medicinal and aromatic crops - Entrepreneurship & skill dev
AELP Project	CUPH2306	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Agri Food Markets and Value Chain Analysis	CUAB2320	2020	Employment: bring agricultural product from production in the field to final consumption, wherein at each stage value is added to the product
Rural Haat and Market Analysis	CUAB2322	2020	To understand the scenario and marketing strategies at rural haat- Entrepreneurship & skill development
Community Owned and Managed Agri Businesses	CUAB2323	2020	To gain knowledge of community based farming and product development- Entrepreneurship & skill development
Agri Warehouse Management	CUAB2324	2020	To gain knowledge on food grain storage and its management at ware house- Employability & skill
Sales and Distribution of Agrifood Products (Internship at LMDC)	CUAB2325	2020	To gain knowledge on sales and distribution of agri food products- Entrepreneurship and employability.
Storage Entomology	CUFS2330	2020	Employment: Post harvest storage of fruits and vegetables with management practices



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Seed pathology	CUFS2331	2020	Skill and employment: Future storage of various seeds under protected condition.
Recent trends in post-harvest technology	CUFS2333	2020	To gain knowledge and updates of recent advancement in post harvest technology of foods i.e. ripe sensors, preservation techniques. Entrepreneurship
Pest management techniques in storage	CUFS2334	2020	To understand about different possible pest responsible for post harvest losses and their management during food storage: Skill, entrepreneurship
Post-harvest storage of fruits and vegetables	CUFS2335	2020	To understand about the different factors responsible for post harvest losses and preservation techniques to extend the post harvest life of perishables: Skill, entrepreneurship
AELP Project	CUFS2336	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Milk Processing in Dairy Industry	CUDP2240	2020	Entrepreneurship: Understanding the process of milk based product development.
Dairy Starters in Fermented Milk Products	CUDP2241	2020	Entrepreneurship: Understanding the process of milk based product development.
Quality Assurance in Dairy Industry	CUDP2242	2020	Employment: Quality check of milk based products under govt. norms
Dairy Products Development	CUDP2243	2020	Entrepreneurship: Understanding the process of milk based product development.



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Synbiotic Dairy Foods	CUDP2244	2020	Entrepreneurship: Understanding the process of probiotic and prebiotic dairy product development.
Post harvest handling and processing of fish and shellfish	CUFT2350	2020	Entrepreneurship: Post harvest handling and processing of fish and shellfish
Design, maintenance of fish processing plant and instrumentation	CUFT2351	2020	Entrepreneurship: Development and maintenance of fish processing plants
Quality assurance, management and certification	CUFT2352	2020	Skill and employment: involves quality assurance of fish and fish based products
Biochemical analysis of fish and fisheries product	CUFT2355	2020	Skill and employment: To familiarize with different fish physiochemical quality estimation parameters.
Preparation of different fisheries products and quality assessment	CUFT2356	2020	Skill and employment: To teach scientific techniques of fish processing and value addition as well as quality of processed products.
Intensive Fish Rearing	CUAQ2250	2020	Skill & Entrepreneurship- To gain knowledge on intensive fish farming
Ornamental Fish Farming	CUAQ2251	2020	Skill & Entrepreneurship- to gain knowledge on marketing opportunity and scope of ornamental fish
Biofloc Aquaculture	CUAQ2252	2020	Skill & Entrepreneurship- To gain knowledge on recent advancement in fish farming and handling of its components
Framing of SOPs for Intensive fish culture and ornamental fish culture	CUAQ2253	2020	Skill & Entrepreneurship- To gain knowledge on SOP framing in intensive fish farming
Health Management in Aquaculture	CUAQ2254	2020	Skill, employability & Entrepreneurship- To learn the





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			procedures of health management in aquaculture
Feed Management in Aquaculture	CUAQ2255	2020	Skill & Entrepreneurship-To gain knowledge on feed management in aquaculture
Aquaculture rearing	CUAQ2256	2020	Skill & Entrepreneurship-To gain knowledge on the techniques involved in aquaculture rearing
Principles and practices of weed management	MAAG 1102*	2017	Skill development: Identification of different weeds and their control which in turn would further provide a scope to students in chemical industries
Principles and practices of water management	MAAG 1103*	2017	Skill development: The students can learn about judicious water management using different efficient technologies which would further lay emphasis on job opportunities as well as they can make themselves self sufficient by serving as entrepreneurs to serve the farming community
Agronomy of major cereals and pulses	MAAG 1204*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Agronomy of oilseed, fibre and sugar crops	MAAG 1205*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Cropping systems and sustainable agriculture	MAAG 1206*	2017	Skill development: The students acquire knowledge about different cropping systems under various climatic situations and they can make themselves self employed as successful entrepreneurs



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Dry land farming and watershed management	MAAG2107 *	2017	Skill development: On the basis of climatic situations, students will learn raising of different climate resilient crops
Master's seminar	MAAG1291 *	2017	To exploit newly evolved research techniques for enhancing the traits in agronomically important species and learn the tips for giving good presentations.
Soil fertility and fertilizer use	MASA1101	2017	Skill development: Students gain knowledge on the application of fertilizers and soil fertility status
Management of problem soils and waters	MASA1202	2017	Skill development: students study different methods for the reclamation of problematic soils as well as their management
Statistical methods for applied sciences	MAST 2102	2017	Skill: To exploit various statistical tools as well as techniques to compile raw data for representing the results
Experimental designs	MAST 1201	2017	The students can analyze the data of field experiments and interpret the same in the result.
Library and information services	MALI1101	2017	Skill development: To gain knowledge on the utilization of library resources for the research finding of experiments.
Technical writing and communication Skills	MACS1101	2017	Skill development: learn the style and skill of writing technical papers
Intellectual property and its management in agriculture	MAIP 1201	2017	Employability and Skill development: students get an overall idea of IPR and their applications towards the protection of property rights
Basic concepts in laboratory techniques	MALT1201	2017	Skill: students do learn the usage of different laboratory equipments along with the



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			standard operating procedures for handling them
Agricultural research, research ethics and rural development programmes	MAAR2101	2017	Employability and Skill development: Acquire knowledge for research ethics and government policies.
Production technology of warm season vegetable crops	MAVS 1102*	2017	Skill: The students can train others as well as the knowledge can be implemented for carrying out research in collaboration with various government and non-government organizations.
Breeding of vegetable crops	MAVS 1103*	2017	Research: can carry out research to generate new varieties further leading to entrepreneurship
Production technology of under exploited vegetable crops	MAVS 1205*	2017	Entrepreneurship and research to conserve the fading races thereby promoting the importance of these races to the farming community for nutritional security
Seed production technology of vegetable crops	MAVS 2106*	2017	Entrepreneurship, skill and research: Development of quality seeds and planting materials
Fundamentals of processing of vegetables	MAVS 2108*	2017	Entrepreneurship and skill: To utilize the knowledge in various processing units
Post harvest technology for fruit crops	MAFS1205	2017	Entrepreneurship and skill
Principles of plant breeding	MAGP1103	2017	Research: can carry out research to generate new varieties which further lead to entrepreneurship
Principles and practices of water management	MAAG1103	2017	Skill and research: To learn the judicious utilization of water during various developmental stages of plants
Techniques in molecular biology I	MAMB1205	2017	Skill: Students learn the techniques of molecular biology



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			and further carry out research and also serve as entrepreneurs
Genomics and proteomics	MAMB 2110	2017	Research and entrepreneurship: The tools and techniques of both the sciences help the students to carry out research and further serve as entrepreneurs
Development perspectives of extension education	MAEX1101*	2017	Employability: Some concepts in this course and the rural development programs can help in getting employment
Development communication and information management	MAEX1102*	2017	Skill and research: students can learn the skills and involve in research activities
Diffusion and adoption of innovations	MAEX1103*	2017	Research: Students can carry out research on adoption and diffusion of innovations
Gender sensitization for development	MAEX1105*	2017	Research and employability: provide them an opportunity to work in sectors relating to women empowerment
Research methods in behavioral sciences	MAEX 1206*	2017	Students get an opportunity to learn the basic concepts of research
e-Extension	MAEX 1207*	2017	Skill: Students can learn the usage of various tools related to ICT activities and further carry out research
Market led extension management	MAEX 1208*	2017	Entrepreneurship: students can learn the marketing and entrepreneurial skills
Human Resource Development	MAEX 2109*	2017	Skill: Students can learn the skills of studying human behaviour leading the management of human resources
Agricultural Marketing & Price Analysis	MAAE 1201	2017	Entrepreneurship: students can learn the marketing skills and serve as entrepreneurs



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Agricultural Finance and Project Management	MAAE 2102	2017	Entrepreneurship and research: Students can learn the basic concepts of agricultural finance and thereby manage projects
Statistical methods for social sciences	MAST 1203	2017	Skill: Students can learn the usage of different statistical tools that in turn would provide them a scope for employment
Non-Parametrics	MAST 2104	2017	Skill: Students can learn the usage of different non parametrics such as descriptive statistics and statistical inferences which would help them for carrying out research activities
Participatory methods for technology development and transfer	MAEX1104	2017	Skill and employability: students can learn the basic concepts of participatory techniques and thereby help in technology transfer from lab to land
Entrepreneurship Development and Management in Extension	MAEX2110	2017	Entrepreneurship: Students do learn the entrepreneurial skills which ultimately provides them with a scope to serve as entrepreneurs
Taxonomy of Shellfish	FSRM1102	2017	Gain knowledge about the morphometric and meristic character of shellfish for identification. Skill development
Fish Food Organisms	FSAQ2109	2017	Learn and practice the nutritional requirements of fish/shellfish larvae and knowledge on mass culture and enrichment of live food organisms. Employability and Skill development
Aquatic Ecology, Biodiversity and Disaster Management	FSEM2106	2017	Study the coastal resources, integrated coastal zone management strategies to conserve it in case of any disaster.



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Freezing Technology	FSPT2103	2017	Understanding the different types of low temperature preservation, handling, storage of different type of fish and fishery products to minimize the spoilage along with post harvest loss. Employability and Skill development
Genetics and Breeding	FSAQ2111	2017	Gain knowledge on genetic basis of inheritance and breeding plans for commercially important fishes. Employability, Entrepreneurship and Skill development
Fish Immunology	FSHM2106	2017	Study the types of immunity, antigen-antibody interactions and learn the Serological methods in disease diagnosis. Employability and Skill development
Fisheries Economics	FSEE2102	2017	Learning the interface between economics and effective management decisions for fisheries business firm. Employability and Skill development
Coastal Aquaculture and Mariculture	FSAQ2204	2017	To gain knowledge in establishing and managing different fish/shellfish farming systems in coastal waters. Employability and skill development
Fish Nutrition and Feed Technology	FSAQ2208	2017	Practical knowledge of feed formulation and different feed processing techniques and prepare feed based on the nutritional requirements of fish/shell fish. Employability and skill development
Fish Packaging Technology	FSPT2205	2017	Learn the different types of packaging, importance of



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			packaging in fish processing, functions, objectives and requirements. Skill development
Fish and Shellfish Pathology	FSHM2201	2017	Study fish and shellfish pathogens, their control measures and treatments. Employability and Skill development.
Fishing Craft Technology	FSFE2203	2017	Study the operation of various types of traditional and mechanised fishing craft, design and modification. Skill development
Fisheries Extension Education	FSEE2207	2017	Acquire skills required to practice various fisheries extension approaches, the transfer of modern and scientific findings of lab to the farmers land.
Shellfish Hatchery Management	FSAQ2206	2017	Practical skills of seed production and hatchery management of commercially important crustaceans and molluscs and can setup his/her own hatchery. Employability, Entrepreneurship and Skill development.
Communication Skills and Personality Development	FSEE2208	2017	Students will improve interpersonal skills, active listening and responding skills, communication into everyday practice, teamwork and group discussions skills. Employability and Skill development.
Intensive Fish Rearing	CUAQ 2250	2020	To enable students intensive production of commercially important fishes in different aquaculture production systems at fish rearing unit and ponds-Skill development and Employability



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Ornamental fish farming	CUAQ 2251	2020	Aim to Familiar students with ornamental fish culture and aquarium management- Self employability and Skill development
Biofloc Aquaculture	CUAQ 2252	2020	To maintaining biofloc culture system with latest technological advancements-Self employability and Skill development
Framing of SOPs for intensive fish culture and ornamental fish culture	CUAQ 2253	2020	Aim to familiar students with SOPs for fish feed Management and Plant Nutrient Management in Aquaponics-Skill development
Health Mangement in aquaculture	CUAQ 2254	2020	To anable students fish health managements Clinical signs, symptoms and treatment for different diseases- Skill Development and Self employability
Feed Management in Aquaculture	CUAQ 2255	2020	To make practice and familiar with Identification of Suitable locally available feed ingredients and Formulation of high quality fish feed- Skill Development and Self employment.
Aquaculture Rearing	CUAQ 2256	2020	To provide students with a good understanding of auaculture rearing and managements-Skill Developments
Introduction to Forensics, Psychology, Law and Statistics	CUTM1634	2020	Skill : Student will gain knowledge of Laws, Assessment of Deception and Statistical analysis.
Instrumental Techniques	CUTM1635	2020	Skill & Employability : Student will perform analysis of various samples by using instruments such as UV, IR, TLC etc.
Crime Scene Management and Forensic Physics	CUTM1636	2020	Skill & Employability : Skill to reconstruct crime scene. Student process the simulated crime





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			scene. Student perform examination of various evidences such as soil, glass, paint, foot print and lip prints.
Finger prints and Questioned Documents	CUTM1637	2020	Skill, Employability & Entrepreneurship, : Student develops latent fingerprints and lift them for comparison & identification purpose.Gains knowledge about various Aspects of AFIS. Student also detects Signature, hand writing & document forgery, examines counterfeit currency, passport and seal impressions. Gains knowledge about instrumental techniques like ESDA, VSC, Stereo Microscope.
Business Communication	CUTM1638	2020	Skill : Improvisation in Vocubalary Skills & Personality Development, Improving Fluency, Voice Quality, Articulation.
Quality Management, Narcotic Drugs, Explosives, and Forensic Chemistry	CUTM1639	2020	Skill & Employability : Student learn and perform examination of NDPS drugs and controlled substanes , low explosives, Fire debris, Petroluem Products, Beverages, Bribe Trap Cases, Adultrated food, Fibres.
Forensic Biology and Forensic Medicine	CUTM1640	2020	Skill : Student gains knowledge about basics of Human Anatomy, Physiology & Forensic Biology. Student performs examination of skeletal remains to determine age, Sex & race Gains knowledge about medicolegal investigation such as cause of death, time since death etc.



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Forensic Serology and DNA Profiling	CUTM1641	2020	Skill & Employability : Students perform experiments to detect the presence of blood, semen, saliva and other body fluids , Performs DNA extraction,
Forensic Toxicology and Pharmacology	CUTM1642	2020	Skill & Employability, : Student isolate and Extract poisons\ Drugs from samples and detrmnes the presence of various poisons. Also gains knowledge about interpretation of toxicological finding and preparation of reports.
Forensic Ballistics and Computer Forensics	CUTM1643	2020	Skill & Employability : Student gains knowledge about various aspects of ballistics, characteristics of ammunitions and Computer Forensics. Student also perform instrumental analysis of GSR & examines bullets and cartridge cases to determine the source of origin.
Pharmacology and Pharmaceutical Drug Analysis	CUTM1647	2020	Employability : Students do qualitative and quantative analysis of Phramaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology	CUTM1648	2020	Skill & Employability, : Students do analysis of various poison such as metallic poison, pesticides, plant poisons etc. and gains knowledge about interpretation of toxicological finding and preparation of reports.
Modern and Applied Analytical Forensic Chemistry	CUTM1649	2020	Skill & Employability : Student performs analysis of Various Cases in Forensic Chemistry, Validation of new methods & Accreditation in FSL's, Analysis of



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			NDPS, Explosives, Fire, Petroleum Products, Beverages, Bribe Trap Cases, Adulterated food, Fibres & Examination of Forensic Chemicals.
Molecular Biology and Genetics	CUTM1644	2020	Skill & Employability : Student performs serological analysis, quantification of DNA, Extraction of DNA from different sources. Also gains knowledge about genotyping and result preparation.
Biotechnology in Pharmaceutical Sciences	CUTM1645	2020	Skill & Employability, : Student studies about recombinant DNA Technology, Quality Assurance and Quality control, Studying Bioinformatics, intellectual property rights. Student performs isolation of bacteria, genomic and plasmid DNA & Western blotting
Environmental Biotechnology	CUTM1646	2020	Skill & Employability, : Student performs practicals to detect pollutants in samples & estimation of BOD. Student gains knowledge about measurement of pollutants with the help of biosensor and biomarker, Measurement of Biomagnification, Waste water management and Treatment.
Modern Trends in Fingerprint Sciences	CUTM1653	2020	Skill, Employability & Entrepreneurship, : Student Classifies, develop, Identifies and Compares fingerprint ( latent and patent prints), performs experiments to identify lip prints. Gains knowledge about various Aspects of AFIS and use of nanoparticles in fingerprint development.



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Questioned Document and Forensic Accounting	CUTM1654	2020	Skill, Employability, Entrepreneurship, : Student gains knowledge about instrumental techniques like ESDA, VSC, Stereo Microscope. Also performs detection of forgeries & decipherment of Charred Documents, Secret Writing and indented, Examination of aging of paper, Basics of Forensic Accounting.
Forensic Photography and Biometric Traits	CUTM1655	2020	Skill & Employability : Student will gain knowledge about Basics of crim scene photography and laboratory photography. Students take photographs of simulated crime scene and enhances the images using photo shop. Student also gains knowledge about techniques of Biometric recognition ( hand fingerprint, facial iris and retina.
Assignment	CUTM1656	2020	Skill : Student study various cases where forensic science played significant role in delivery of justice and write reports.
Seminar	CUTM1657	2020	Skill : Student takes up cases and topics relevant to their specialization subjects and delivers the same.
Project	CUTM1658	2020	Skill, Employability & Entrepreneurship, : Student develops the skill to undertake research. Student carries out project by getting hands on training on various instruments.
Principles of Information Security	CUTM1618	2020	Employability-Focus on the CIA models, tools, and techniques for enforcement of security



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Digital Forensics	CUTM1619	2020	Employability -Focus on analysis and assessment of risk assesment process & control
Computer Networks	CUTM1620	2020	Skill Development , Employability- Learning about computer network & network security
Cyber Crime & Investigations	CUTM1621	2020	Skill Development,Employability- Learning about Analytical Skills,Comprehension of Cybersecurity Fundamentals and good practices for digital evidence and digital forensics: Skill Development
Intellectual Property Rights	CUTM1622	2020	Employability-Making the students aware of their rights for the protection of their invention done in their project work
Number theory &Cryptography	CUTM1623	2020	Skill Development,Employability- implement and analyze algorithms for integer factorization and primality testing: Skill Development
Advanced Information Security	CUTM1624	2020	Skill Development, Employability- Focus on the CIA models, tools, and techniques for enforcement of security
Cyber Forensics	CUTM1625	2020	Skill Development, Employability- Focus on analysis and assessment of risk assesment process & control : Skill Development, Employability
System and Network Security	CUTM1626	2020	Skill Development, Employability- Gaining practical experience in installation, monitoring, and troubleshooting of current LAN systems
Cyber Law	CUTM1627	2020	Entrepreneursip-Cyber law is associated with all the areas of business & law which have a



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			technological bend like E-commerce Entrepreneurship.
Mobile Security Analysis	CUTM1628	2020	Entrepreneurship-Learning of protection of portable devices such as laptops, smartphones, tablets, and smartwatches from threats and vulnerabilities
IT Governance, Risk and Compliance	CUTM1629	2020	Entrepreneurship-strategy for managing an organization's overall governance, enterprise risk management and compliance with regulations
Business Continuity Planning (BCP) And Disaster Recovery (Dr)	CUTM1630	2020	Skill Development-Learning how to reduce the overall risk & manage the company
Digital Frauds	CUTM1632	2020	Employability-Learning of collecting, investigating, preserving, and presenting evidence of cybercrime left in digital storage devices Employability.
Project/Dissertation	CUTM1633	2020	Employability-Research , Development methodology
Basics of forensic sciences	CUTM1659	2020	Skill : Student gains knowledge about fundamentals of forensic science, organizational setup of different FSLs in India, functioning of national and international investigative agencies, code of conduct, ethical issues, professional standards, qualification of forensic scientists, report writing.
Crime and society	CUTM1660	2020	Skill : Student studies basic cocepts of criminology, criminal profiling, types of crime, victimology, penology, psychological disorders and criminality, CJS, case studies



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
English	CUTM1673	2020	skill : Learns to communicate fluently in different business situation, effective oral and written communication, appropriate words usage with correct pronunciation, clarity of word stress and intonation
Criminal law	CUTM1661	2020	Skill : Student studies criminal procedure code, IPC, IEA, constitutions of india, acts pertaining to socio- economic and environmental crimes
Forensic Psychology	CUTM1662	2020	Skill : Student gains knowledge about fundamental concepts of forensic psychology and forensic psychiatry , the legal aspects of forensic psychology, significance of criminal profiling, the importance of psychological assessment in gauging criminal behaviour, tools and techniques for detection of deception ( polygraph, narco analysis, brain mapping)
Forensic Dermatoglyphics	CUTM1663	2020	Employability & skill : Student locates, develops, lifts and compares fingerprint for identification. Also performs physical and chemical techniques for developing latent fingerprints, collect and examines lipprints, footprints.
Technological methods in forensic sciences	CUTM1664	2020	Employability & skill : Student uses chromatographic methods to separate various samples, gains hands on experience of various instruments
Criminalistics	CUTM1665	2020	Employability & skill : Students visit the simulated crime scene



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			and documents the crime scene. Gains knowledge about the legal importance of chain of custody, the tools and techniques for analysis of different types of crime scene evidence
Introduction to biometry	CUTM1675	2020	Skill & Employability : Student learns the basics of biometry, classification and importance of behavioural biometry. Student identify individual characteristics of Fingerprints.
Forensic chemistry	CUTM1666	2020	Employability & skill : Student analyze s petroleum products in fire debris, adulterants in petroleum products. Gains knowlege about the method of searching, collecting and preserving and analyzing arson evidence, significance of bomb scene management, techniques of locating hidden explosive
Questioned documents	CUTM1667	2020	Employability, Entrepreneurship & skill : Student examines the authenticity of signature, handwriting and other documents. Also gains knowledge of working principles of ESDA, VSC, Projectina nirvis, stereo microscope.
Forensic biology	CUTM1668	2020	Employability & skill : Performs analysis of biological and serological evidence such as blood, urine, semen etc. in crime investigations, Gains knowledge about wild life forensics in conserving natural resources, importance of forensic





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			entomology in death investigations.
Handwriting identification and recognition	CUTM1676	2020	Skill & Employability : Student learns importance features in handwriting identification, basics of handwriting characteristics. Student analyze s handwriting samples for prescence of forgery and various other security documents.
Analytical Techniques	CUTM1709	2020	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership
Biological Chemistry	CUTM1710	2020	demonstrate an understanding of fundamental biochemical principles, such as the structure/function of metabolic pathways, and the regulation of biological/biochemical processes: Employability
Clinical Hematology	CUTM1712	2020	Differentiate various hematological procedures and the use of basic equipment essential to working in a Hematology Laboratory: Skill dev. & Employability & Enterpreunership
Clinical Pathology	CUTM1715	2020	Pathological investiations of urine, stool and other biological specimen: Employability/ Enterpreunership/ Skill
Clinical Biochemistry	CUTM1718	2020	Understanding of principle of biochemical Clinical biochemistry tests; to study about diseases related to biochemical and hormone imbalance in human



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			body: Employability/ Enterpreunership/ Skill
Applied microbiology	CUTM1717	2020	Microbiology in diagnostics, hospitals and community: Employability/ Enterpreunership/ Skill
Medical Parasitology and Mycology	CUTM1716	2020	Identification of pathogenic parasite and fungus in disease diagnosis and treatment: Skill dev./ Employability
Project	CUTM1756	2020	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	CUTM1755	2020	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
Medical Laboratory Technology	CUTM1723	2020	Quality management in diagnostic division: Employability/ Enterpreunership
Health Programme in India	CUTM1726	2020	Perform as a health care team manager: Employability/ Enterpreunership
Medical Microbiology	CUTM1724	2020	Demonstrate practical skills in the use of tools, technologies and methods common to microbiology, and apply the scientific method and hypothesis testing in the design and execution of experiments: Skill dev. & Employability
Advanced Hematology	CUTM1727	2020	Compare and contrast hematology values under normal and abnormal conditions: Skill dev. & Employability & Enterpreunership
Biochemistry	CUTM1732	2020	Understanding the significance of biomolecules in metabolic



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			activities and detection of abnormal range of these molecules from patient sample: Employability
Introduction to Quality and Patient safety	CUTM1753	2020	Understand policy related to managing lab and infection control:Employability/ Skill/ Enterpreunership
Microbiology	CUTM1733	2020	Concept of the pathogenecity and culturing of microorganisms: Employability/ Skill/ Enterpreunership
Medical Laboratory Management	CUTM1751	2020	Recognize the role of clinical laboratory scientist in the assurance of quality health care:Employability, Skill Dev, Entreprenurship
Medical Instrumentation and Techniques	CUTM1730	2020	handling instruments required in Medical Laboratory set up: Skill dev. & Employability & Enterpreunership
Immunology	CUTM1736	2020	Understanding the concept of Innate & adaptive immune system; performing serological analysis: Skill dev. & Employability & Enterpreunership
Hematology	CUTM1731	2020	Differentiate various laboratory test findings with their associated clinical conditions: Employability/ Enterpreunership/ Skill dev
Analytical Biochemistry	CUTM1738	2020	Learning various tests carried out for biochemical analysis & Hormone investigations: Skill dev. & Employability & Enterpreunership
Pharmaceutical Microbiology	CUTM1739	2020	understanding of different types of disinfectants/antiseptics and their uses, evaluation of their bactericidal and bacteriostatic



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			action: Employability/ Enterepreneurship
Industrial Microbiology	CUTM1741	2020	Enhances analytic ability of various physical parameters which affect production of industrial products by the microorganisms and the safety aspects of the production and use of these products: Employability/ Enterepreneurship
Diagnostic Bacteriology	CUTM1747	2020	Lab diagnosis for Enteric infection, Respiratory tract Infection, Oral & Stomach infection, Urinary tract infections: Employability/ Skill
Diagnostic Parasitology	CUTM1744	2020	Collectionand identification of Parasites: Skill dev and Employability
Applied Hematology	CUTM1749	2020	Understanding of Haemopoietic disorders and their laboratory diagnosis : Skill dev. & Employability & Enterpreunership
Parasitology	CUTM1748	2020	Identification of pathogenic parasite in disease diagnosis and treatment: Skill dev. And Employability
BIOLOGY	CUTM1760	2020	understand how these cellular components are used to generate and utilize energy in cells: Employability
MATHEMATICS	CUTM1761	2020	represent linear systems by matrices and solve them for unknown variables: Skill
BASIC BIOCHEMISTRY	CUTM1759	2020	The students become conversant with the Fundamentals of Biochemistry which can be applied in clinical diagnosis of the metabolic disorders: Employability



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RADIOGRAPHIC TECHNIQUE -1	CUTM1767	2020	Position the tube; give instructions to the patient; assist radiologist in various procedures: Employability / Skill
BASIC OF MAGNETIC RESONANCE IMAGING	CUTM1776	2020	Understand patient positioning during the MRI procedure of different organ system to obtain well defined images for proper diagnosis of MRI films and images: Employability/ Skill
OCULAR ANATOMY	CUTM1782	2020	Comprehend the basic structure and connections between the various parts of the central nervous system and the eye so as to understand the neural connections and distribution: Employability
GEOMETRIC OPTICS	CUTM1781	2020	predict the basic properties of the images formed on the retina by the optics of the eye: Employability/ Entrepreneurship
OCULAR PHYSIOLOGY	CUTM1783	2020	List out the physiological principles underlying pathogenesis and treatment of diseases of the eye: Employability
INTRODUCTION TO OPTOMETRY	CUTM1785	2020	Understand the purpose of different instruments used in optometry: Employability
OPTOMETRIC OPTICS I	CUTM1787	2020	Ophthalmic prism knowledge – effects, units, base-apex notation, compounding and resolving prisms: Entrepreneurship/ Skill
OCULAR DISEASES I	CUTM1788	2020	Diagnostic approach and management of the ocular diseases: Employability
OCULAR MICROBIOLOGY AND PATHOLOGY	CUTM1789	2020	Knowledge of pathological processes utilized in the investigation, management and



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			prevention of disease: Employability
CLINICAL EXAMINATION OF VISUAL SYSTEM LAB	CUTM1790	2020	Knowledge on the purpose of each test, its indications and contraindications and will be able to perform various clinical tests: Entrepreneurship/ Employability/ Skill
VISUAL OPTICS II	CUTM1791	2020	Theoretical knowledge and practical skill on visual acuity measurement, objective and subjective clinical refraction: Employability/ Skill
OPTOMETRIC OPTICS II & DISPENSING OPTICS	CUTM1792	2020	Facial measurements - Interpupillary distance measurement and measuring heights (single vision, multifocal, progressives); Lens verification and axis marking and fitting of all lens types; Final checking of finished spectacle with frame adjustments: Employability/ Entrepreneurship/ Skill
OCULAR DISEASES II	CUTM1794	2020	Diagnostic approach, and management of the ocular diseases: Employability
CONTACT LENS- I	CUTM1793	2020	Ability to finalize the CL design for various kinds of patients and Recognize various types of fitting; Ability to fit and Explain all the procedures of Contact Lens fitting to patient: Employability
CONTACT LENSES II	CUTM1795	2020	Special cases CL fitting; Identify and manage the adverse effects of contact lens: Employability/ Skill
BINOCULAR VISION II	CUTM1799	2020	Identify non strabismic anomalies related to accommodation & convergence: Employability



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OCCUPATIONAL OPTOMETRY	CUTM1802	2020	To be able to prescribe suitable corrective lenses and eye protective wear: Employability/ Entrepreneurship/ Skill
LAW AND OPTOMETRY	CUTM1805	2020	Universal consensus that legal and ethical considerations are inherent and inseparable parts of good medical practice across the whole spectrum: Skill
PUBLIC HEALTH & COMMUNITY OPTOMETRY	CUTM1804	2020	Organize health education programmes in the community; Vision screening for various eye diseases in the community and for different age groups: Employability/ Skill
OPTOMETRIC INSTRUMENTS	CUTM1803	2020	Gain theoretical knowledge and basic practical skill in handling the advanced instruments: Employability/ Entrepreneurship/ Skill
PROJECT	CUTM1809	2020	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
INTERNSHIP	CUTM1810	2020	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Entrepreneurship
Human Anatomy and Physiology I – Theory	BPHT1101	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Analysis I – Theory	BPHT1102	2017	Skill-Employability-Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession



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Pharmaceutics I – Theory	BPHT1103	2017	Skill- Employability- Entrepreneurship -Understand the impact of pharmaceutical solutions in a global, economic, environmental, and societal context
Pharmaceutical Inorganic Chemistry – Theory	BPHT1104	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Communication skills – Theory *	BPHT1105	2017	Skill- Students can improve their communication Skill
Human Anatomy and Physiology – Practical	BPHL1101	2017	Skill-allows Students to verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Analysis I – Practical	BPHL1102	2017	Skill- Employability- Students can assay ,prepared and standardized various Heavy metals and Chemicals
Pharmaceutics I – Practical	BPHL1103	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Pharmaceutical Inorganic Chemistry – Practical	BPHL1104	2017	Skill- Students can perform purity test on drugs or chemicals
Communication skills – Practical*	BPHL1105	2017	Skill- Students can improve their communication Skill
Remedial Biology – Practical*	BPHL1106	2017	Skill- Students can learn about structure and functional system of plant and animal kingdom
Human Anatomy and Physiology II – Theory	BPHT1201	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments





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Pharmaceutical Organic Chemistry I – Theory	BPHT1202	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Pathophysiology – Theory	BPHT1204	2017	Skill-Employability-student get to know about various communicable diseases and pathophysiology along with all the techniques for screening test .
Environmental sciences – Theory *	BPHT1206	2017	Employability- student get to know about basic knowledge about the environment and its allied problems
Human Anatomy and Physiology II –Practical	BPHL1201	2017	Skill- allow the verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Organic Chemistry I– Practical	BPHL1202	2017	Skill-Students can do qualitative analysis and synthesis of Organic Compound
Biochemistry – Practical	BPHL1203	2017	Skill- Students can demonstrate different Biochemical Test
Computer Applications in Pharmacy – Practical*	BPHL1204	2017	Skill-Allows students to details with Database, Database Management system, computer application in clinical studies and use of databases
Pharmaceutical Organic Chemistry II – Theory	BPHT2101	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Physical Pharmaceutics I – Theory	BPHT2102	2017	Skill- Employability- formulate and solve complex



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			pharmaceutical problems in formulation development
Pharmaceutical Engineering – Theory	BPHT2104	2017	Skill -Employability- Enterprenurship- students can able to understand and perform unit operations, material handling techniques, screening test and plant lay out design for optimum use of resources used in Pharmaceutical industries
Pharmaceutical Organic Chemistry II – Practical	BPHL2101	2017	Skill-Stuents can do qualitative analysis and synthesis of Organic Compound
Physical Pharmaceutics I – Practical	BPHL2102	2017	Skill- Allows student to get a better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.
Pharmaceutical Microbiology – Practical	BPHL2103	2017	Skill- Allows students to study of all categories of microorganism especially for the production of alcohol antibiotics, vaccines, vitamins enzymes etc.
Pharmaceutical Engineering – Practical	BPHL2104	2017	Skill- Students can get fundamental knowledge on the art and science of various unit operations used in pharmaceutical industry
Pharmaceutical Organic Chemistry III– Theory	BPHT2201	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Medicinal Chemistry I – Theory	BPHT2202	2017	Employability students get to know about the chemistry, pharmacological activity,



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures, structure activity relationship of various drug molecules.
Physical Pharmaceutics II – Theory	BPHT2203	2017	Skill- Employability- formulate and solve complex pharmaceutical problems in formulation development
Pharmacology I – Theory	BPHT2204	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Pharmacognosy and Phytochemistry I– Theory	BPHT2205	2017	Skill - Students can do identification and evaluation, phytochemicals present in them and their medicinal properties
Medicinal Chemistry I – Practical	BPHL2201	2017	Skill - Students can get fundamental knowledge on the structure, chemistry and synthesis of each class of drug
Physical Pharmaceutics II – Practical	BPHL2202	2017	Skill-student get to know better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.
Pharmacology I – Practical	BPHL2203	2017	Skill -Student can Observe the effect of drugs on animals by simulated experiments
Medicinal Chemistry II – Theory	BPHT3101	2017	Employability students get to know about the chemistry,



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			pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures, structure activity relationship of various drug molecules.
Industrial Pharmacy– I Theory	BPHT3102	2017	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.
Pharmacology II – Theory	BPHT3103	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Pharmacognosy and Phytochemistry II– Theory	BPHT3104	2017	Skill-Employability-Isolate, Identify, Analyze, screen and ensure quality as well as quantity of drugs/pharmaceuticals and also able to design phytopharmaceutical schemes of crude drugs estimation
Pharmaceutical Jurisprudence – Theory	BPHT3105	2017	Employability- students can able to apply knowledge in the area of pharmaceutical legislation, rules, laws, ethics, acts and amendments related to drugs, engage in life-long learning.
Industrial Pharmacy I – Practical	BPHL3101	2017	Skill- Students can Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality



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Pharmacology II – Practical	BPHL3102	2017	Skill- Students can demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments
Pharmacognosy and Phytochemistry II – Practical	BPHL3103	2017	Skill- Students can carryout isolation and identification of phytoconstituents
Medicinal Chemistry III – Theory	BPHT3201	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures,structure activity relationship of various drug molecules.
Pharmacology III – Theory	BPHT3202	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Herbal Drug Technology – Theory	BPHT3203	2017	Skill-Employability- students get to know basic principles of traditional medicinal systems with method of preparation and standardization of ayurvedic formulations
Biopharmaceutics and Pharmacokinetics – Theory	BPHT3204	2017	Skill- Employability- student get to know about pharmacokinetic and pharmacodynamic parameters of different dosage form and use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession



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Pharmaceutical Biotechnology – Theory	BPHT3205	2017	Employability- Students can design and develop process to meet desired needs within realistic constraints of pharmacy sector.
Quality Assurance –Theory	BPHT3206	2017	Skill-Employability- students get to know about the validation, confirmation of test product substance and able to analyze, screen and ensure quality of drugs/pharmaceuticals.
Medicinal chemistry III – Practical	BPHL3201	2017	Skill- Students can do chemical synthesis of selected drugs
Pharmacology III – Practical	BPHL3202	2017	Skill- Students can demonstrate the various receptor actions using isolated tissue preparation
Herbal Drug Technology – Practical	BPHL3203	2017	Skill- Students can prepare herbal cosmetics, natural sweeteners, nutraceuticals
Instrumental Methods of Analysis – Theory	BPHT4101	2017	Skill-Employability- Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession.
Industrial Pharmacy –II Theory	BPHT4102	2017	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.
Pharmacy Practice – Theory	BPHT4103	2017	Skill-Employability- Entrepreneurship- Understanding of professional and ethical responsibility, Manage contemporary pharmaceutical projects, Function effectively as a leader and member of multidisciplinary teams.



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Instrumental Methods of Analysis – Practical	BPHL4101	2017	Skill- Students can perform quantitative & qualitative analysis of drugs using various analytical instruments
Practice School*	BPHL4102	2017	Employability- Skill-Enterpreurship Sudents get to know about practice work for any subjective topics, Engage in life-long learning.
Biostatistics and Research Methodology	BPHT4201	2017	Skill- students get to know the appropriate statistical methods required for a particular research design and able to design and conduct experiments, as well as to carry out problem analysis data interpretation
Social and Preventive Pharmacy	BPHT4202	2017	Skill-Employability-students get to know different preventive measures in pharmacy, Understanding of professional and ethical responsibility.
Pharmaceutical Regulatory Science	BPHT4204	2017	Skill-Employability-students get to know about different regulatory bodies, Engage in life-long learning.
Project Work	BPHP4201	2017	Skill-Emptoability-Enterpreurship-Students get to know about plan of work related to the subjective topics and question answer discussion.
Office Automation	CUTM1895	2020	Skill - Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.
OOPs with C ++ Programming	CUTM1897	2020	Skill - Object-oriented programming with C++ to solve various problems.



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Database Management Systems	CUTM1884	2020	Skill - Database and file management
Java Technologies	CUTM1900	2020	Skill-Integrated development environment to write, compile, run, and test object-oriented Java programs to solve real-world problems
Internet and Web Technology	CUTM1902	2020	Skill - Design and development of web programming.
Digital Painting	CUTM3115	2020	Skill-Design and development of desktop publishing
Apparel Production	CUTM3031	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Heavy Vehicle Technology	CUTM3034	2017	Employability/ Entrepreneurship/Skill - Practice and Project
E-Vehicle Assembly and Service Technology	CUTM3037	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Poultry Farming	CUTM3039	2017	Employability/ Entrepreneurship/Skill
Design Supervising Wooden and Modular Furniture	CUTM3041	2017	Employability/ Entrepreneurship/Skill - Practice and Project
3D Modelling and Printing	CUTM3043	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Precast Concrete Manufacturing	CUTM3045	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Fabrication	CUTM3046	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Internet of Things	CUTM3048	2018	Employability/ Entrepreneurship/Skill - Practice and Project





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Mechatronics System Design	CUTM3049	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Editor	CUTM3054	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Refraction Technology	CUTM3057	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Emergency Medical Technology	CUTM3058	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Radiology Technology	CUTM3061	2019	Employability/ Entrepreneurship/Skill - Practice and Project
X- ray Technology	CUTM3065	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Retail Sales	CUTM3067	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Organic Farming	CUTM3081	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Mushroom Farming	CUTM3082	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Hydroponics Technology	CUTM3083	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Poultry Farming	CUTM3084	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Dairy Farming	CUTM3085	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Vermicomposting Farming	CUTM3086	2020	Employability/ Entrepreneurship/Skill - Practice and Project



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Transformer Manufacturing, Repairing and Maintenance	CUTM3087	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Repair and Maintenance of Home Appliances	CUTM3090	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Super critical Co2 plant operation	CUTM3092	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Bio fertilisers preparation	CUTM3103	2020	Employability/ Entrepreneurship/Skill - Practice and Project
PCB designing & fabrication	CUTM3104	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Introduction to Block Chain Technology	CUTM3105	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Adobe Tools and Illustrations	CUTM3114	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Computer Installation and Maintenance	CUTM3120	2020	Employability/ Entrepreneurship/Skill - Practice and Project
<b>2021-22</b>			
<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Differential Equations and Linear Algebra	CUTM1001	2020	Skill Development(Students will know about the modelling of different engineering application ) Skill Development(Students will know about modelling of problems related to system of equations in engineering application)



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Laplace & Fourier Transforms	CUTM1002	2020	Skill Development(Students will know to find the solution using laplace and fourier transform )
Complex Analysis & Numerical Methods	CUTM1003	2020	Skill Development(Students will know to find the solution using complex integral)
Discrete Mathematics	CUTM1004	2020	Skill Development(Students will know about graphs, sets and logic)
Probability & Statistics	CUTM1005	2020	Employability (Students will know about probability distribution) Skill (Students will know about mean, media, mode)
Calculus	CUTM1925	2020	Employability (Students will know about curvature, asymptotes)
Mechanics for Engineers	CUTM1006	2020	Employability (knowledge enhancement)
Optics and Optical Fibres	CUTM1007	2020	Employability (knowledge enhancement) / Skill development ( LASER and Optical fiber portion)
Environmental Studies	CUTM1010	2020	Employability-Environment and its multidisciplinary nature, Biodiversity and its conservation, Causes, effects and control measures of pollution.
Optimisation Techniques	CUTM1011	2020	Skill Development (Students shall be able to apply the theory of optimization methods and algorithms to develop and for solving various types of optimization problems). Employability and Entrepreneurship (Students shall be able to solve the mathematical results and numerical techniques of optimization theory to concrete Engineering problems by using computer software)



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Engineering Economics and Costing	CUTM1012	2020	Skill Development (Students shall be able to apply the microeconomics concepts related to business and its impact on enterprise). Employability and Entrepreneurship (Students shall be able to apply cost concepts to analyze common business management decisions such as pricing a product and services)
Project Management	CUTM1013	2020	Skill Development (Students shall be able to develop a Project Charter document for any project). Employability and Entrepreneurship (Students shall be able to implement the Project and Prepare a project document that they have undertaken as a learning tool)
Gender, Human Rights and Ethics	CUTM1014	2020	Skill Development (Students shall be sensitive to gender, human rights and ethics within an organizational context). Employability and Entrepreneurship (Students shall be able to integrate concerns related to gender, human rights and ethics into the policies, processes and systems in an organization)
Climate Change, Sustainability and Organisation	CUTM1015	2020	Skill Development (Students will be exposed to current climate change issues, challenges and debates). Employability and Entrepreneurship (Students shall be equipped to develop strategies for perspective planning of organizations)



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Job Readiness	CUTM1016	2020	Skill Development (Develop additional skills (verbal, logical, quantitative and reasoning) required to enhance employability as well as the entrepreneurial ability of the students). Employability (Students will develop skill in the area of proficiency in english, reasoning and aptitude, which are required to obtain a job)
Industrial IOT and Automation	CUTM1017	2020	Skill Development and Employability (the new evolution in hardware, software, and data. While the promise of the Industrial Internet of Things (IIoT) brings many new business prospects, it also presents significant challenges ranging from technology architectural choices to security concerns)
Data Analysis and Visualisation using Python	CUTM1018	2020	Skill And Employability(Students had Created data visualizations of various data sets using matplotlib and the seaborn modules with python and also developed portfolios of various data analysis projects . )
Machine Learning using Python	CUTM1019	2020	Skill And Employability(Implement ML algorithms that generates insight to high volume data and helps to make better classifications and prediction. The students are able to solve problems in areas computational finance, image processing and computer vision, energy and natural language processing.)



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<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Design Thinking	CUTM1021	2020	Skill And Employability (student will be able to apply the design thinking process to innovative problem solving)
System Integration with DYMOLA	CUTM1022	2020	Employability ( designing of high-fidelity modeling of complex integrated systems, intuitive modeling i.e. advanced, formally defined object-oriented modeling language, To increase the ability to integrate with complex 3D geometry for integrated simulation, to increase powerful model management, calibration & optimization capabilities.)
Smart Engineering Project (G2M)	CUTM1023	2020	Employability ( learn different tools and collaborate together to build a smart live project, express the imagination to reality, industry readiness.)
Geotechnical Engineering	CUTM1073	2020	Employability(To obtain knowledge about soil properties and methods of soil properties determination in the laboratory, using field tests and considering comparable experience. Basic stability and deformation problems. Principle of spread and deep foundation design. To understand fundamental knowledge of geotechnical works for soil improvement, interaction of structure and subsoil. Basic design methods for excavation and foundation pits with dewatering and sealing systems)
Construction Material Testing	CUTM1069	2020	Skill Development(Gain knowledge about how determine



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			the standard quality of construction materials)
Quantity Estimation & Costing	CUTM1063	2020	Skill development(Students will be able to Estimating, brick calculations & cost for different materials, foundation & footing calculations. Gain knowledge about how to schedule & estimate different construction works both manually and using software.)
Geometric Modeling	CUTM1060	2020	Skill development(Students will be able to Demonstrate use of CAD in Civil Construction, basic knowledge of operating software & commands, and benefit of civil developments in the construction industry. Do 2d &3d drafting /design with AUTO CAD software.)
Hydrology and Irrigation	CUTM1071	2020	Skill development(Project oriented skills shall be gained by students to work efficiently in survey, planning, design and construction in irrigation sector.)
Surveying Techniques	CUTM1067	2020	Skill development(Doing centering, leveling & measuring coordinate points of area and calculation, transfer to data from Total station to software spectrum link Doing field work using of simple machine parts such as Total – Station, Auto- level)
Geospatial Survey	CUTM1068	2020	Skill development(Gain knowledge about the structure of spatial data including file associations, attribute tables, Metadata, coordinate systems,



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			<p>and projections            Carryout measurements            Differential Global Positioning System (DGPS)/ Global Navigation Satellite System (GNSS) in field.            Preparation &amp; digitization of different topography map with the help of Arc-GIS software)</p>
Concrete Technology	CUTM1066	2020	<p>Skill development(Demonstrate test and analysis of cement, aggregate, sand, effect of water cement ratio.            Prepare concrete, carry out simple formwork and reinforcement with the application of modern Power Tools.            Prepare reinforcement of different R.C.C. members i,e, Foundation, beams, columns, slabs, Retaining Wall, etc.            Erect scaffolding and make the intricate formwork at different locations.            Prepare a bar bending schedule and demonstrate bar bending and calculate the estimated quantity of materials.)</p>
Electrical, Plumbing, and Woodwork	CUTM1065	2020	<p>Skill development(Identify timber and perform sawing and planning using hand and power tools.            Demonstrate surface finish with exact sizing by planning operation.            Prepare different wooden Joints. (Range of skill - framing joint, Housing joints, broadening joints, Lengthening joints )            Make small wooden job as per</p>





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			drawing with schedule sizes of timber or alternatives of timber i.e. FRP, MDF, FOAM using various hardware. Make different types of doors and windows with fixing of components.)
Design of Structure	CUTM1074	2020	Skill development(To gain the knowledge of RCC design calculation with relevant Indian Standards. • After completion of the courses the students will gain knowledge of Pre-Engineered design calculation with relevant Indian Standards • Students will develop skill of converting client’s requirement to structural drawing by using ETABS.)
Road Engineering	CUTM1070	2020	Skill development(Students will gain knowledge on planning, material selection for construction, Economics and finance and designing of elements on highway. Acquire the skill of designing the geometric elements of highway using CIVIL 3D software.)
Construction Materials	CUTM1064	2020	Skill development(Knowledge: Able to learn basic theory about main building- and construction materials. Skills: Able to make right and well-founded choice of materials. General competence: Understand how properties of materials that are important in engineering can



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			be related to the characteristics of the material.)
Water Supply and Sanitary Engineering	CUTM1072	2020	Skill development(To understand the principles of treatment units and their design units of drinking water, solid and liquid waste water treatment units; its recycle, reuse or disposal methods along with hands on practice of house plumbing and sanitary fittings)
Computer-Aided Engineering	CUTM1081	2020	Skill development(Students will be able to Create complete finite element models Submit and monitor analysis jobs View and evaluate simulation results)
Hydraulic Machinery	CUTM1090	2020	Skill development(• After completion of the course, the students will have a strong foundation on the pertinent equations to engineering design of the machines for required applications. • Students will learn to determine performance characteristics of fluid machinery by using various simulation tools)
Fluid Mechanics with FVM	CUTM1089	2020	Skill development(• After completion of the course, the students will be able to evaluate finite difference/volume schemes on model problems of computational fluid dynamics. • Students will learn to develop steady state mechanical energy balance equation for fluid flow systems, estimate pressure drop in fluid flow systems)



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Theories of Failure analysis using FEA	CUTM1062	2020	Skill development(• Students will have knowledge and practical engineering skills in analysis of mechanical strength of structures and load transmission elements and will be able to design them based on input data. • Students will be able to deploy 3D Experience Platform to develop design solutions. • Students will be able to apply the Concept of Meshing and Failure Criteria to Practical Problems which will lead Economical and safe in Design Aspect.)
Database Management Systems	CUTM1059	2020	Skill development(Design ER-models to represent simple database application scenarios Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data Improve the database design by normalization Familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B tree, and hashing)
Programming in Java	CUTM1058	2020	Skill development( Able to use object oriented concept to solve problems
Remote Sensing & Digital Image Processing	CUAS2020	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>
Geospatial Technology and its Application	CUAS2021	2020	<p>Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>
Photogrammetry and its Application	CUAS2022	2020	<p>Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Lidar Remote sensing and its Applications	CUAS2023	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Hyper-spectral Remote Sensing and its Application	CUAS2024	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)
Project	CUAS2025	2020	Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>
Study of Drawings and Plan	CUCP2110	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Project Scheduling &Management	CUCP2111	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and</p>



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			<p>construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Site Study And Study on Contract Laws	CUCP2112	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils'</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			ability to put their knowledge of theory into practice using forms of construction.)
Concepts Of Quality Control and Checking	CUCP2113	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs.</p> <p>Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.</p> <p>Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning.</p> <p>Students will plan various projects relating to advanced building technology with trust.</p> <p>Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant.</p> <p>Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Quantity Estimation and Equipment Management	CUCP2114	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs.</p> <p>Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process.</p> <p>Give the students experience, supervision and direction in</p>





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>
Site Supervision Project	CUCP2115	2020	<p>Skill development(Students will be able to work with the latest trend of the construction industry needs. Understand different methods of project delivery and the roles and responsibilities of all constituents involved in the design and construction process. Give the students experience, supervision and direction in recognizing and applying the concepts of project management and construction planning. Students will plan various projects relating to advanced building technology with trust. Students will be churned as Construction Manager, Project Engineer, Site Supervisor and Project Consultant. Maintain and develop the pupils' ability to put their knowledge of theory into practice using forms of construction.)</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Critical Thinking and Presenting it with Digital Platform	CUSD2120	2020	Skill development(Strong understanding of architectural design and scope for innovative ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)
Scope to Enrich by Exposing them to BIM Modelling	CUSD2121	2020	Skill development(Strong understanding of architectural design and scope for innovative ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)
Design and Failure Analysis of Structure	CUSD2122	2020	Skill development(Strong understanding of architectural design and scope for innovative ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)
Amalgamation of Architecture and Civil Requirements using Generative Apps	CUSD2123	2020	Skill development(Strong understanding of architectural design and scope for innovative



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>ideas. Case study based practical solution with actual site visits/live buildings Modelling of structural elements and failure analysis Time saving estimations/structural calculations using digital tool)</p>
Project	CUSD2124	2020	<p>Skill(Demonstrate test and analysis of cement, aggregate, sand, effect of water cement ratio. Prepare concrete, carry out simple formwork and reinforcement with the application of modern Power Tools. Prepare reinforcement of different R.C.C. members i,e, Foundation, beams, columns, slabs, Retaining Wall, etc. Erect scaffolding and make the intricate formwork at different locations. Prepare a bar bending schedule and demonstrate bar bending and calculate the estimated quantity of materials.)</p>
IT Infrastructure Management	CUTM1024	2020	<p>Skill And Employability(Students developed skills to build and manage IT infrastrucuter in Enterprise level using CISCO packet tracer)</p>
Cloud Practitioners	CUTM1025	2020	<p>Skill And Employability( Analyze and Understand the functioning of different components involved in Amazon web services and also acquire cloud technology skill for</p>



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			cloud partitioner certification which helps students in getting jobs in different MNCs)
Wireless Networks	CUTM1026	2020	Skill(Students developed Skills needed to install, configure, and troubleshoot WLAN hardware peripherals and protocols.)
Information Security	CUTM1027	2020	Skill And Employability(Students have done activities like network analysis, intrusion detection in the network and file integrity using different open source tool.)
Programming in C	CUTM1602	2021	Skill And Employability(Case study to be given to students on uses of C program for development of various real time applications like online examination system, online quiz competition etc. )
Data Structures	CUTM1603	2021	Skill And Employability(Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems)
Java Technologies	CUTM1031	2020	Skill And Employability(Understands the concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)



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Database Creation and Maintenance	CUTM1033	2020	Skill And Employability( Hands on training on Client/Server Architecture- System Structure , Instance and schema, Data Models, Types of DBMS Query Processing and Optimization: Evaluation of Relational algebra expressions-Query Equivalence-Transaction Processing: Built in SQL functions, Sub Queries-Joins-DCL – TCL- Views – Sequences – Index – Locks PL/SQL Basics – Exceptions – Cursors - Stored Functions – Triggers Case study in industrial standards of Database Management)
Database Cluster Administration and Security	CUTM1034	2020	Skill(Students will develop skill of developing new techniques in cluster deployment in real world Applications.)
Data Warehousing and Data Mining	CUTM1035	2020	Skill (Student will able to design data warehouse with dimensional modeling and apply OLAP operations.)
Android App Development	CUTM1036	2020	Skill And Employability(Understand Android UI design, activity and fragments, intents, notifications, SQL Lite are implemented. As a course project students should implement a mobile app with the app idea and design user interface/wireframes of mobile app and also set up the mobile app development environment)
Mathematical Problem Solving	CUTM1037	2020	Skill( Understand asymptotic analysis and different methods. Understand linear data structures and its applications. Understand



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			different non-linear data structures and its applications Understand divide and conquer strategy for various sorting and searching techniques. Understand and apply the greedy approach for various problems. )
Advanced Java Programming	CUST2011	2020	Skill And Employability(Understands the advance concepts of Threads, exception handling, file handling and even handling and applets implemented in the Java, which helps students in getting jobs in different IT firms)
ML for Predictive Analysis	CUML2002	2020	Skill And Employability(Implement ML algorithms that generates insight to high volume datasets and helps to make better prediction, classifications and clustering. The students are able to solve problems in areas computational finance and computer vision, energy and natural language processing.)
ML for Image Analytics	CUML2003	2020	Skill And Employability( Implemented different Real life Projects in the field of medical and Agricultural image processing)
ML for Hyperspectral imaging	CUML2004	2020	Skill And Employability(Implemented different Real life Projects in the field of medical and Agricultural hyperspectral images)
Internship	CUML2005	2020	Skill And Employability(Implemented



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			different Real life Projects in the field of medical and Agricultural image processing)
Project	CUML2006	2020	Skill And Employability(Implemented different Real life Projects in the field of medical and Agricultural image processing)
Advanced Hacking Techniques	CUCS2041	2020	Skill And Employability(Learned different white hat hacking tools to defend different cyber attacks)
System and Network Security	CUCS2042	2020	Skill And Employability(Learned different network security tools to defend different cyber attacks)
IT Data Security	CUCS2043	2020	Skill And Employability(Students able to detect different data leakage and able to prevent some of it )
Introduction to Gaming & Simulation	CUAR2060	2020	Skill And Employability(End to End Game Development Pipeline)
Game Assets & Game Objects	CUAR2061	2020	Skill And Employability(Able to built different models, assets and objects like temple, park, agriculture field etc..)
Building Game Environment	CUAR2062	2020	Skill And Employability(Able to built game environment)
Game Animation, Scripting & UI	CUAR2063	2020	Skill And Employability(Able to design different cartoon animations and UI)
Project	CUAR2065	2020	Skill And Employability(End to End Game Development Pipeline such as 3D games, model of konark temple)
Embedded System Programming with ARM-Cortex	CUTM1039	2020	Skill Development, Employability (Embedded System sectors to learn programming / Interfacing peripherals to ARM Cortex based Microcontroller)



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VLSI Design (NSQF level 5)	CUTM1040	2020	Skill Development, Employability (Design combinational and sequential circuit using CMOS logic Enhancement of complex digital VLSI logic design skill of students which will help them to complete any project work undertaken in higher semesters. Perform back-end physical design)
Electronic Devices and Systems	CUTM1046	2020	Employability (A broad introduction to electronic systems for students from diverse engineering disciplines, necessary foundation to understand the role, capabilities and constraints of electronics in contemporary engineering systems, provides basic understanding of the fundamentals and principles of analog and digital circuits and electronic devices. )
Electromagnetic Interference and Compatibility	CUTM1041	2020	Skill Development This subject is a base subject for wireless communication, Antenna Engineering and other advanced communication based subject.
Electromagnetic Field Theory & Transmission Lines	CUTM1042	2020	Skill Development Introduce theory and concepts of electromagnetic waves and transmission lines, Model and design the transmission lines at high frequencies, applying Smith chart use for solution of transmission line problems and impedance matching.





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Network Analysis	CUTM1043	2020	Employability ( techniques of solving circuits involving different active and passive elements, analyze the behavior of the circuit's response in time domain, analyze the behavior of the circuit's response in frequency domain, synthesize an electrical network from a given impedance/admittance function.)
Analog Communication Systems	CUTM1045	2020	Employability (Familiar with analog radio transmitters and receivers Verify the Noise performance of different Modulation Techniques)
Digital Communication Systems	CUTM1044	2020	Employability (Illustrate the classification of channels, Entropy coding methods and different types of Error control codes along with their encoding/decoding algorithms. Examine the Performance of different Digital Carrier Modulation schemes of Coherent and Non-coherent type based on Probability of error)
Principles of wireless communication	CUTM1047	2020	Skill Development and Employability Knowledge about the characteristic of wireless channel, designing of a cellular system, study the various digital signaling techniques and multipath mitigation techniques, understanding the concepts of multiple antenna techniques
Digital Signal & Image Processing	CUTM1048	2020	Employability (knowledge of time



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			domain,frequency domain,discrete time signals, properties and digital filter design techniques, knowledge on basic concepts of image and its processing techniques, basic knowledge on Enhancement, Restoration, Segmentation techniques)
Antenna Design and Analysis	CUTM104	2020	Employability (understanding the theory and fundamentals of antenna design, learning key aspects of practical antenna design, knowledge of a broad range of antennas such as dipole, loop, microstrip patch, horn, smart etc. )
Optical Fiber Communication	CUCS2084	2021	Employability The basic elements of optical fiber transmission link, fiber modes configurations and structures. To understand the different kind of losses, signal distortion, SM fibers. To learn the various optical sources, materials and fiber splicing. To learn the fiber optical receivers and noise performance in photo detector. To learn link budget, WDM, solitons and SONET/SDH network.
Project	CUCS2085	2020	Employability (Skill development course)
Energy Production & Transmission	CUTM1051	2020	Skill development( Students will develop the skill of how energy is being produced and transmitted )
Substation Switch gear & Protection	CUTM1052	2020	Skill development( Students will develop the Skill of different substation, switchgear and its protection techniques)



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
System Modeling and Control	CUTM1053	2020	Skill development( Students will develop the skill of modelling the various systems and its control techniques)
Electrical Machines Operation and Control	CUTM1054	2020	Skill development( Students will develop the skill of operating different electrical machines and its control techniques)
Industrial Power Electronics	CUTM1055	2020	Skill development( Students will develop the skill of using different power electronics converters and its industrial applications)
Digital Measurement and Instrumentation	CUTM1056	2020	Skill development( Students will develop the skill of measuring the instruments digitally)
Basic Electrical Engineering	CUTM1057	2020	Skill development( Students will develop the skill on various fundamental concepts of electrical engineering )
Introduction to Industrial Automation	CUIA2100	2020	Skill development(Students will develop skill of designing Automatic Control System using PLC)
Advanced Programming & Control Blocks of PLC	CUIA2101	2020	Skill development (Students will gain Functional skill set with hands-on; on System Automation by using relevent software & hardware tools)
Control & Signal Wiring of PLC	CUIA2102	2020	Skill development (Students will gain Functional skill set with hands-on; on Advnce Applications Such as Load Changing Automation in Power Networks by using relevent tools)
SCADA based advanced features	CUIA2103	2020	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by



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			using relevant software & hardware tools)
SCADA & PLC based sequential control	CUIA2104	2020	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Human Machine Interface	CUIA2105	2020	Skill development (Students will gain Functional skill set with hands-on; on PLC based Automation System by using HMI-Allen Bradley-Panel View C600 tools)
OPC server base data fetching & control	CUIA2106	2020	Skill development (Students will gain knowledge about OPC server and network in automation)
Project	CUIA2107	2020	Skill Development (Students will develop different automation related project)
Internship	CUIA2108	2020	Skill Development (Students will undergo training for the industrial automation)
Introduction, Power Scenario, Power Quality & Fault clearance	CUEG2090	2020	Skill Development ( Students will get functional knowledge on different fault clearing techniques to improve power quality)
Switchyard & substation Networks	CUEG2091	2020	Skill Development ( Students will design the electrical grid network system with busbar arrangement in transmission & distribution system)
Protection scheme & Switchgear	CUEG2092	2020	Skill Development ( Students will develop different protection scheme with hardware & software integration)
Cable system & Testing	CUEG2093	2020	Skill Development ( Students will learn the three phase power



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			cabel layout system wit the testing techniques in workshop)
Power Markets	CUEG2094	2020	Employability (Student will learn power market operation & energy audit process with hands on practice which will lead them to placement in power & energy trading company)
Grid Safety	CUEG2095	2020	Skill Development ( Students will develop skill set with hands on training & practice on electrical safety & first aid techniques)
Transformer Manufacturing	CUEG2096	2020	Skill Development ( Students will Manufacture three phase Distribution Transformer of 11KV class as per BIS specification, during project work)
Project	CUEG2097	2020	Skill Development (Students will develop different electrical system & transformer related project)
Materials for Renewable Energy applications	CURE2190	2020	Skill Development (Students will learn and develop the different materials for Renewable Energy generation)
Renewable Energy Technology for Industrial Process	CURE2191	2020	Skill development (Students will gain Functional skill set with hands-on; on application of Renewable energy for the industry)
Micro-grid Design & Implementation	CURE2192	2020	Skill Development (Students will learn and develop the different Micro-grid Design and its application to fulfill the load requirement)
Hybrid Renewable Energy Systems	CURE2193	2020	Skill Development (Students will learn and develop the hybrid generations that combines the



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			solar photovoltaic along with the Thermal power generations)
Solar Off-grid Entrepreneur	CURE2194	2020	Skill Development (Students will learn and develop the Entrepreneurship skill for the Development of different solar off grid project
Project	CURE2195	2020	Skill Development (Students will develop different renewable energy sources & solar related project)
Internship	CURE2196	2020	Skill Development (Students will undergo training for the renewable energy)
Computer Aided Drafting	CUTM1075	2020	Skill development (Students will be able to use CATIA for creation of 3D models, Assembly Designs and Drawings.)
Product Design and Development	CUTM1076	2020	Employability and Skill development (Student will understand and explain the concept of Industrial design and robust design concepts. Student will understand the concept of Design for manufacture and assembly.)
Reverse Engineering and Rapid Prototype	CUTM1077	2020	Employability and Skill development (Student will understand principles of imaging, cross-sectional scanning, digital data, computational graphics.)
Product Life Cycle Management	CUTM1078	2020	Employability and Skill development (Students will use ENOVIA Engineering BOM Management)
Manufacturing Process	CUTM1604	2021	Employability and Skill development (Student will



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			understand the Importance of Materials, Manufacturing Processes, Process Planning & Design in Product Manufacturing)
Material in product design and development	CUTM1080	2020	Employability and Skill development (Student will understand the various material selection for manufacturing processes. Students will able to Identify and select suitable material for product design. Students will able to understand Application of smart materials, shape memory metal, Nano material.
Quality Assurance	CUTM1082	2020	Employability and Skill development (Students will carry out statistical analysis of experiment, ANOVA ratio test and apply advanced DOE method for product testing.Students will understand SIX SIGMA process and lean production concept.)
Applied Ergonomics	CUTM1083	2020	Employability and Skill development (Students will able to use the Human Ergonomics software to create an accurate simulation of a human entity and its work environment to ensure a natural operation)
Computer Aided Manufacturing	CUTM1084	2020	Skill development (Students will able to create 2-D Geometry and 3-D models using various Command in Master CAM software. Simulation of CNC programs using Master CAM software.)
CNC Programming & CNC Machining	CUTM1085	2020	Employability and Skill development (Demonstrate and



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			explain various CNC control Calculate technological data for CNC machining. Prepare programs, demonstrate, simulate and operate CNC milling machines for various machining operations)
Design of Tools, Jigs and Fixtures	CUTM1086	2020	Skill development (To learn basic concepts, functions and design principles of Jigs, Fixtures and Dies)
Advance Metrology	CUTM1087	2020	Skill development (Student will have knowledge of basic measurement systems in Real time Engineering Applications.)
Thermodynamics	CUTM1088	2020	Skill development (To know the laws of thermodynamics and conditions for energy transformation)
Theory of Machines	CUTM1091	2020	Skill development (To develop skills for designing and analyzing linkages, cams, gears and other mechanisms.)
Heat Transfer with FDM/FVM	CUTM1092	2020	Skill development ( Students will be able to analyze and design various Equipment used in industry using principles of Heat Transfer.)
Optimisation Techniques	CUTM1079	2020	Skill development (students will able to apply the theory of optimization methods and algorithms to develop and for solving various types of optimization problems.)
Introduction to Automobile Engineering	CUAE2170	2020	Employability and Skill development( This gives jobs oppertunity in automobile manufacturing companies in India and abroad.There are large





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			number of job opportunities in automobile designing, research & development, sales & service.The students can also successfully run their own business in this field.)
Subsystems of Automobile	CUAE2171	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad.There are large number of job opportunities in automobile designing, research & development, sales & service.The students can also successfully run their own business in this field.)
Electric Vehicles	CUAE2172	2020	Employability and Skill development ( This gives jobs opportunity in automobile manufacturing companies in India and abroad.There are large number of job opportunities in automobile designing, research & development, sales & service.The students can also successfully run their own business in this field.)
Maintenance of Automobile	CUAE2173	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India and abroad.There are large number of job opportunities in automobile designing, research & development, sales & service.The students can also successfully run their own business in this field.)
Project	CUAE2174	2020	Employability and Skill development( This gives jobs opportunity in automobile manufacturing companies in India



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			and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Internship	CUAE2175	2020	Employability and Skill development ( This gives jobs opportunity in automobile manufacturing companies in India and abroad. There are large number of job opportunities in automobile designing, research & development, sales & service. The students can also successfully run their own business in this field.)
Introduction to composites	CUCD2130	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Composite materials and characterization	CUCD2131	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
CATIA-Composites Design	CUCD2132	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Composite Product Validation; Simulia	CUCD2133	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Machineries and Technologies used for Manufacturing of Composites	CUCD2134	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software.



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Quality control and Fabrication of Composite Structure	CUCD2135	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Project	CUCD2136	2020	Employability and Skill development (students will be able to learn how to design a composite material using Catia software. Material properties can be studied by Biovia software. Students will get familiar with 3d experience software. Well-equipped laboratory with different types of matrix and fiber where students will do hands-on practice and fabricate different types of composite which can be used in our day to day work)
Manufacturing Requirements and Planning (Jigs & Fixtures; Process Planning & Cost Estimation)	CUCM2150	2020	Employability and Skill development (Developing the visibility of skills and potentials of



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			students in ways that are relevant to manufacturing need & employability and also promoting a production oriented learning method.)
Conventional Machining for Cylindrical and Prismatic Shape Components	CUCM2151	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
CNC Machining	CUCM2152	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)



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Non-Traditional Machining and 3D Printing	CUCM2153	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Wood Engineering	CUCM2154	2020	Employability and Skill development( Makes student Industry ready through hands-on education. Provides required industrial experience within the academic environment to apply theoretical and practical concepts to improve manufacturing processes. Helps bright students to achieve more and struggling learners to find new ways to master. Provides in-depth technical training & knowledge of latest manufacturing processes and machineries. Strengthens the Industrial-Institutional partnership.)
Internship	CUCM2155	2020	Employability and Skill development(Students go to different corporate industry to carry out their internship for 3month duration.This help



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			students to give specific skills followed by internships
Joining Processes and Technology	CUWI2160	2020	Employability and Skill development (ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self employed by opening a small scale welding shop to a medium scale industry.)
Metal Transfer and Weld Metallurgy	CUWI2161	2020	Employability and Skill development ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self employed by opening a small scale welding shop to a medium scale industry.)
Design of Welded Joints	CUWI2162	2020	Employability and Skill development ( ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self employed by opening a small scale welding shop to a medium scale industry.)
Testing of Welded Joints	CUWI2163	2020	Employability and Skill development (ASNT Level II (LPI and UT) or NSQF skill certification will make the candidate recognised in national and international levels in the industry. He/she can be self



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			employed by opening a small scale welding shop to a medium scale industry.)
Advanced Structural Analysis	MTSE1101	2019	Skill development(• Skill in developing computer program for the structural analysis of two-dimensional frames. • To obtain some experience in the use of modern structural analysis programs.)
Structural Dynamics	MTSE1102	2019	Skill development(To provide basic knowledge of mathematics, science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system, component or process as per needs and specifications when subjected to dynamic loads.)
Theory of Elasticity & Plasticity	MTSE1103	2019	Skill development(• Ability to apply the knowledge of mathematics, science and engineering with Elasticity concept to solve problems in two Dimensional Problems in Polar Coordinates. • To provide the students with basic skill of plasticity concept applicable in structural systems)
Architectural Design	MTSE1104	2019	Skill development(Provide skill with a well-educated workforce that is ready and able to perform valuable architectural and construction engineering and managerial services immediately after graduation The ideas / concepts learned in Basic Design and other related





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			subjects have to be carried forward into the architectural design now envisaged. The exercises may be taken up as mentioned herein.)
Bridge Engineering	MTSE1105	2019	Skill development(At the end of the course, the students have a skill to: <ul style="list-style-type: none"> <li>• Design the slab culvert, Box culvert</li> <li>• Design the T beam bridge and substructures</li> <li>• Design the Bridge bearings</li> <li>• Design the steel bridge for railway)</li> </ul>
Computer Graphics	MTSE1106	2019	Skill development(At the end of the course, the students have a skill and employability to: <ul style="list-style-type: none"> <li>Event driven I/O and callback programming &amp; typical structure of an interactive, real-time computer graphics program</li> <li>• 2&amp;3D transformations, homogeneous co-ordinates, post-multiplication</li> <li>• Modelling and instantiation)</li> </ul>
MATLAB for Civil Engineers	MTSE1107	2019	Employability (Differential equations and its application to engineering problems Soft computing applications to engineering problems)
Finite Element Method	MTSE1201	2019	Skill development(• Enable the students to identify, formulate and skill to engineering problems related to one, two and three Dimensional structures subjected to static loads. <ul style="list-style-type: none"> <li>• To show the impact of</li> </ul>



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			engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to wrong analysis)
Concrete Technology	MTSE1202	2019	Skill development(• To study and understand various types of technology added in concrete • Have a skill to develop in design of various grades of concrete)
Research Methodology & IPR	MTRM1201	2019	Skill development(1. Skill to research problem formulation. 2. Analyze research related information 3. Follow research ethics 4. Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.)
Structural Engineering Lab	MTSE1203	2019	Skill development(To provide basic knowledge of mathematics, science and engineering in the areas of vibrations applied to structural systems •To give procedural knowledge or skill to design a system, component or process as per needs and specifications when subjected to dynamic loads.)
3D Modeling using ANSYS and CATIA	ISSE1205	2019	Skill development(Introduction to Engineering Design Different types of Numerical Methods & Applications, Practical Applications of FEA, Basics of finite element method (FEM),)
Design of Prefabricated Structures	MTSE0101	2019	Skill development(• Grasp of the construction methods using these elements have the skill of the



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			construction methods using these prefabricated elements)
Renovation and Retrofitting of green structures	MTSE0102	2019	Skill development(By the end of this course students will have the skill /knowledge of <ul style="list-style-type: none"> <li>• various distress and damages to concrete and masonry structures</li> <li>• the importance of maintenance of structures, types and properties of repair materials etc)</li> </ul>
Advanced Construction Materials	MTSE0103	2019	Skill development(• To study the polymers in civil engineering construction <ul style="list-style-type: none"> <li>• To study the corrosion of concrete in various environments)</li> </ul>
Soil Dynamics and Geotechnical Earthquake Engineering	MTSE0104	2019	Skill development(Develop skill in applying theory of vibrations to basic facets of soil behavior under dynamic loading together with the exposure of the fundamental principles of wave propagation in engineering example)
Industry Internship and Project - I	MTIP2101	2019	Employability(On successful completion of this course student will able to: <ul style="list-style-type: none"> <li>• Get Experience of working conditions on live projects of company.</li> <li>• learn soft skill viz. Self-Confidence, widen Strong Work Ethic toward work, Positive Attitude towards work, develop effective Communication Skills, Time Management Abilities, Problem-Solving Skills etc.</li> <li>• Find successful employment after graduation.)</li> </ul>



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Industry Internship and Project - II	MTIP2201	2019	Employability(On successful completion of this course student will able to: <ul style="list-style-type: none"> <li>• Get Experience of working conditions on live projects of company.</li> <li>• learn soft skill viz. Self-Confidence, widen Strong Work Ethic toward work, Positive Attitude towards work, develop effective Communication Skills, Time Management Abilities, Problem-Solving Skills etc.</li> <li>• Find successful employment after graduation.)</li> </ul>
Traffic Engineering And Management	ISTE1101	2019	Skill development(• To learn traffic studies, their analysis and their interpretation. <ul style="list-style-type: none"> <li>• To learn analysis of LOS.</li> <li>• To learn design of signal.</li> <li>• To learn transportation system management.)</li> </ul>
Pavement Materials And Construction	ISTE1102	2019	Employability(• To learn about characteristic of subgrade soil. <ul style="list-style-type: none"> <li>• To learn about characteristic of road aggregates.</li> <li>• To learn about characteristic of paving grade bitumen.</li> <li>• To learn about characteristic of cement used in road construction.)</li> </ul>
Transportation Infrastructure Design	ISTE1104	2019	Employability(• To learn Geometric Design of Cross Sectional Elements of various types of roads. <ul style="list-style-type: none"> <li>• To learn Geometric Design of Horizontal Alignment of Roads</li> <li>• To learn Geometric Design of Vertical Alignment of Roads.</li> </ul>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<ul style="list-style-type: none"> <li>• To learn transportation system management)</li> </ul>
Pavement Material Lab	ISTE1106	2019	Skill development( <ul style="list-style-type: none"> <li>• To learn about characteristic of subgrade soil.</li> <li>• To learn about characteristic of road aggregates.</li> <li>• To learn about characteristic of paving grade bitumen.</li> <li>• To learn about characteristic of cement used in road construction.)</li> </ul>
Traffic Survey Practice	ISTE1107	2019	Skill development( <ul style="list-style-type: none"> <li>• Fieldwork using Hi-Tech surveying instruments</li> <li>• Clustering using field traffic data</li> <li>• Preparation of questionaries for OD survey</li> </ul>
Pavement Analysis And Design	ISTE1201	2019	Skill development( <ul style="list-style-type: none"> <li>• To learn about various factors affecting pavement design.</li> <li>• To learn about stress analysis of the pavement.</li> <li>• To learn about various methods of flexible pavement design.</li> <li>• To learn about various methods of rigid pavement design.)</li> </ul>
Highway Project formulation and Economics	ISTE1202	2019	Employability( <ul style="list-style-type: none"> <li>• To learn Geometric Design of Cross Sectional Elements of various types of roads.</li> <li>• To learn Geometric Design of Horizontal Alignment of Roads</li> <li>• To learn Geometric Design of Vertical Alignment of Roads.</li> <li>• To learn transportation system management)</li> </ul>
Traffic Safety	ISTE1203	2019	Skill development(Identify specific data and methodologies



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			<p>for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>
Research Methodology For Engineers	ISRM1201	2019	<p>Employability(Meaning of Research , Objectives of Research ,Motivation in Research ,Types of Research Research Approaches ,Significance of Research ,Research Methods versus Methodology Research and Scientific Method ,Importance of Knowing How Research is Done ,)</p>
Survey Lab	ISTE1204	2019	<p>Skill development(Identify specific data and methodologies for effective mapping and evaluation of natural resources. Develop geospatial models and tools to address the social and engineering problems Design multi-criteria geospatial systems for decision-making process Work in a team using geospatial tools and environment to achieve project objectives. Pursue lifelong learning for professional advancement)</p>
Transportation Engineering Design Practice	ISTE1205	2019	<p>Skill development(Gain knowledge about the software</p>



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			used in transportation like surface creation, surface profile and cross section of roads.)
Remote Sensing And GIS for Transportation Engineering	ISTE1207	2019	Skill development(• Ability to understand the basics and characteristics of remote sensing. • Ability to process remotely sensed data. • Ability to draw information from remotely sensed data. • Ability to understand the basics and application of GPS in transportation engineering)
Pavement Evaluation ,Rehabilitation and Maintenance	ISTE1208	2019	Employability(• To learn about characteristic of subgrade soil. • To learn about characteristic of road aggregates. • To learn about characteristic of paving grade bitumen. • To learn about characteristic of cement used in road construction.)
Project Management	ISTE1209	2019	Employability(Identify functions of project management including estimating, job controls, field data collection, scheduling, accounting and design. * method that uses technology to measure cost and productivity through the full life-cycle of enterprise level projects * Contract Management and Tendering
Environmental Impact Assessment for Transportation Projects	ISTE1210	2019	Employability(• environmental issues in decision-making) .• impacts of transportation projects on air quality, society, economy, ecology and travel .• Ecological disturbances



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			. Environmental Issues in Industrial Development
Industry Internship and Project-1	ISTE2101	2019	Employability(Student will be doing live project For 4 months in an Industry and submit a Project Report to concerned guide certified by the Industry Engineer)
Industry Internship and Project-II	ISTE2200	2019	Employability(Student will be performing internship for 3-months in Industry and submitted a report and duly certified certificate from the competent Engineer in charge)
Computer Applications to Power System Analysis	MTPS1101	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
Non-Linear Control Systems	MTPS1102	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
Micro Controller Application with PLC	MTPS1103	2019	Skill development (Students will gain Functional skill set with hands-on; on Micro Controller & Application of Micro Controllers in System Dynamic by using relevant software & hardware tools)
SCADA- Compatible with all PLC	MTPS1104	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by





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			using relevant software & hardware tools)
Advanced Electrical in Automation	MTPS1105	2019	Skill development (Students will gain Functional skill set with hands-on; on Advance Applications Such as Load Changing Automation in Power Networks by using relevant tools)
Sensors and VFDInterface to PLC and SCADA	MTPS1106	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Digital Control System Applied to Power System	MTPS1201	2019	Skill development (Students will gain Functional skill set with hands-on; on Digital Control System Applied to Power System by using relevant software & hardware tools)
Power System Dynamics & Stability	MTPS1202	2019	Skill development (Students will gain Functional skill set with hands-on; on Load Flow & Power System Dynamic Stability by using relevant software & hardware tools)
SCADA-Compatible with fixed brand of PLC	MTPS1203	2019	Skill development (Students will gain Functional skill set with hands-on; on Sensors and VFD Interface to PLC and SCADA by using relevant software & hardware tools)
Distributed Control System	MTPS1204	2019	Skill development (Students will gain Functional skill set with hands-on; onDistributed Control System by using relevant software & hardware tools)
Power System Monitoring by HMI	MTPS1205	2019	Skill development (Students will gain Functional skill set with



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			hands-on; on Power System Monitoring by HMI by using relevant software & hardware tools)
High voltage Engineering	MTPS0101	2019	Skill development (Students will gain Functional knowledge with hands-on; on high voltage engineering application in transformer workshop)
Optimization Techniques in Power System	MTPS0102	2019	Skill development (Students will gain Functional knowledge with hands-on; on digital applications in power system techniques)
Digital Power System Applications	MTPS0103	2019	Skill development (Students will gain Functional knowledge with hands-on; on high voltage engineering application in transformer workshop)
Power Quality Analysis	MTPS0104	2019	Skill development (Students will gain Functional knowledge of power quality)
Non-Conventional Renewable Energy	MTPS0105	2019	Skill development (Students will gain Functional knowledge with hands-on; on different RE electricity generation process)
Renewable Energy System Integration with Grid	MTPS0106	2019	Skill development (Students will gain Functional knowledge with hands-on; on RE system integration with grid application in transformer workshop)
Concepts of Smart Grid Technology	MTPS0107	2019	Skill development (Students will gain Functional knowledge with hands-on; on smart grid system operation)
Distribution System Engineering	MTPS0108	2019	Skill development (Students will gain Functional knowledge on power distribution system)
Power System Security	MTPS0109	2019	Skill development (Students will gain Functional knowledge with



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			hands-on; on system security in power system)
Digital Signal Processing Applications in Power System Protection	MTPS0110	2019	Skill development (Students will gain Functional knowledge with hands-on; of DSP power system protection)
Industry Internship and Project – II/Dissertation	MTIP2102	2019	employability (Student will learn on power system operation & energy audit process with on the job training which will lead them to placement in power & energy company)
Post harvest engineering of cereals, pulses and oil seeds	CUTM2066	2021	(Skill development) Understand the concepts and principles of processing and packaging techniques and the effects of processing parameters on product safety and quality
Tractor and Automotive Engines	CUTM1130	2020	Entrepreneurship (To understand the working principle of different systems of internal combustion engines and tractor.)
Irrigation Engineering	CUTM1131	2020	Skill Development (Estimate the quantity of water required by different types of crop.)
Tractor Systems and Controls	CUTM1132	2020	Employability (Learning fundamentals of tractor chassis design and traction theory.)
Farm Machinery and Equipment-I	CUTM1133	2020	Employability (To equip the students with technical knowledge and skills required for the operation of Tillage, Sowing and intercultural machinery needed for agricultural farms.)
Agricultural Structures and Environmental Control	CUTM1134	2020	Employability (To prepare estimate for different farm buildings, structures, roads, fencing and construction, repair



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			and maintenance of farm structures.)
Sprinkler and Micro Irrigation Systems	CUTM1135	2020	Entrepreneurship(Learn the design and layout of Drip and Sprinkler Irrigation system, their operation and maintenance.)
Soil-Water Conservation Engineering and Structure	CUTM1136	2020	Skill Development(Develop analytical thinking and problem solving skills in soil and water conservation engineering problems.)
Drainage Engineering	CUTM1138	2020	Entrepreneurship(Analyze the economic aspects of drainage projects.)
Tractor and Farm Machinery Operation and Maintenance	CUTM1142	2020	Employability(To acquire knowledge regarding makes and models of tractors, different systems and periodic maintenance tractors.)
Processing Technology of Cereals and Millets	CUFP2310	2020	(Skill development)Understand the concepts and principles of processing and packaging techniques and the effects of processing parameters on product safety and quality
Processing Technology of Legumes and Oilseeds	CUFP2311	2020	(Skill development)know principles of processing and packaging techniques and the effects of processing parameters on product safety and quality
Processing Technology of Fruits, Vegetables,Spices	CUFP2312	2020	(Skill development)study of the effects of processing parameters on product safety and quality
Product Development and Packaging Technologies	CUFP2313	2020	(Employability) Gain insights into the scientific, regulatory, and consumer interests that interact in determining the safety of food



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Food Standards and Regulations and HACCP Systems	CUFP2314	2020	(Skill development) Understand and develop HACCP plans based on the standards and regulations
Integrated watershed management	CUSW2341	2020	(Employability)Improving livelihoods in rainfed areas through integrated watershed management
Sustainable Watershed	CUSW2342	2020	(Skill development)Build skills in collecting, analyzing, and critically evaluating watershed data and documents from multiple sources
Modelling and Simulation of Watershed Processes	CUSW2344	2020	(Employability)Application of different hydrological models to simulate watershed process
Geo-spatial application in watershed management	CUSW2345	2020	(Employability)Application of rainwater harvesting in an integrated watershed management approach
Product Development Brief	CUFM2220	2020	(Skill development)To make student learn about the smart technologies and their application in farm machinery.
Sensor, Actuators and Robot Operating Systems	CUFM2221	2020	(Employability)To make student learn how to design farm machinery and develop its 3D model in software.
Farm Machinery Design	CUFM2222	2020	(Employability)To make student learn how to simulate the model using software
Piloting a Drone	CUFM2223	2020	(Skill development)To make student learn how to simulate the model using software of drone
PLM using Dassault Tools	CUFM2224	2020	(Employability)To make student learn how to develop a prototype model and test it in real conditions
Testing of Farm Machinery	CUFM2225	2020	(Skill development)Students will be able to test the machine in real field conditions.



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Summer training-I	CUTM1939	2020	(Skill development) Students will be able to have real exposure to industries or Institutes to get training and acquire some practical exposure.
Pharmacognosy and Phytochemistry of Important Medicinal Herbs	CUTM1167	2020	(Skill development/Employability) Identification of medicinal herbs and gaining knowledge of their pharmaceutical use
Ayurveda and fermentation technology	CUTM1168	2020	(Skill development/Employability) Formulation of herbal dosage forms, leading to improved employability
Material Science of Excipients and Additives	CUTM1170	2020	(Skill development/Employability) Practical aspects of pharmaceutical dosage form formulation
Advanced separation technologies and downstream processing	CUTM1172	2020	(Employability) Separation and isolation of bioactive components from medicinal herbs
Herbal Cosmetic Technology	CUTM1175	2020	(Employability/Entrepreneurship) Project based learning of different cosmetic formulation with extensive hands on experience
Plant Biotechnology	CUTM1177	2020	(Skill Development/Employability) Extensive application of plant biotechnology in herbal drug industry practice and classroom mode
Statistical Quality Control & Design of Experiments	CUTM1180	2020	(Skill Development/Employability) learn about pharmaceutical formulations
Human Anatomy and Physiology	CUTM1708	2020	(Skill Development) learn about human anatomy and physiology and gain knowledge about vital measurements
Industrial Pharmacy-II	CUTM1588	2020	(Skill development/Employability) Practical aspects of



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			pharmaceutical dosage form formulation
Heat and Mass Transfer	CUTM1525	2020	(Employability and skill development) learn about heat and mass transfer under industrial set up
Summer training-II	CUTM1940	2020	(Skill development) Students will be able to have real exposure to industries or Institutes to get training and acquire some practical exposure.
Introduction to Nutraceutical	CUNU2280	2020	Employment: Production of nutritional enriched foods
Functional Food	CUNU2281	2020	Employment: Production of nutritional enriched foods
Nutrigenetics	CUNU2282	2020	Employment: Production of nutritional enriched foods
Computational Biology	CUGE2270	2020	Employment: Molecular modelling of Biomolecules using bioinformatics tools
Genetic Engineering and its applications	CUGE2271	2020	Employment: Production of genetically modified varieties using advanced molecular techniques
Fundamentals of Microbiology/General Microbiology	CUTM1711	2020	Skill development (basic idea of microbiology which will later help in higher study (M. Tech) in microbiological field.)
Business Organisation and Management	CUTM1947	2021	Application of Basic management principles- Skill development
Job Readiness	CUTM1182	2020	Analytical Ability, ability to plan & strategic, creative & logical thinking, attention to details, ability to recall (Working Memory), problem solving ability, communication skills (written), spatial ability articulation, data interpretation skills, active



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			Listening, ability to visualize, adaptation skills, decision making, ability to analyze pattern & trends- Employability
Micro Economics	CUTM1184	2020	Utilize micro economic concepts and techniques to take business decisions Employability & Entrepreneurship
Data analysis through Microsoft Excel	CUTM1185	2020	Able to analyze data appropriately- ESkill development
Economic Environment of Business	CUTM1186	2020	Analyze of policy environment to take appropriate decision - Employability
Operation Research	CUTM1188	2020	Manage and enhance the sales force productivity and performance:Employability & Entrepreneurship
Principles of Management	CUTM1189	2020	Application of Basic mangement principles- Employability
Basics of Design Thinking	CUTM1190	2020	Utilize design thinking for innovation - emplobility & Entrepreneurship
Data Analysis and Visualization Using Python	CUTM1191	2020	Can use Python for data analysis and visualization.- Skill Development
Introduction to Robotics	CUTM1198	2020	Impact of Robotics in business & Management - Employability
Accounting for Managers	CUTM1199	2020	Preparation of financial statement, preparation of cost sheet and financial analysis of financial statements: Employability & Entrepreneurship
Marketing Management	CUTM1200	2020	Interpret complex marketing issues facing a variety of enterprises they would be employed in or setting up as entrepreneurs: Employability & Entrepreneurship;





<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Organizational Behaviour and Structure	CUTM1201	2020	Analyze and compare different models of Human Behaviour - Employability, Entrepreneurship
Talent Acquisition and Development	CUTM1202	2020	Assess, design and implement various methods, techniques and sources of training- Employability, Entrepreneurship
Marketing Research	CUTM1203	2020	Plan and undertake qualitative or quantitative Market Research and demonstrate the ability to appropriately analyze data to resolve marketing issues: Employability, Entrepreneurship
Corporate Finance	CUTM1204	2020	Utilize the concepts of financial management, investment, financing, working capital and dividend policy decisions: Use techniques of minimising risk in investment, techniques of leverage as well as optimum cost of capital structure of company.- Employability & Entrepreneurship
Production & Operations Management	CUTM1205	2020	Developing aggregate capacity plans and MPS in operation environments- Employability, Entrepreneurship
Introduction to PLM (Platforms such as 3DS) <sup>5</sup>	CUTM1206	2020	Develop Product specification Document and digital prototype- Employability, Entrepreneurship
Designing User/Customer Experience (UX/CX)	CUTM1207	2020	Product Design & User experience - Skill Development
Supply Chain Management	CUTM1208	2020	Analyzing the manufacturing operations of a firm- Employability, Entrepreneurship
Advanced Managerial Accounting	CUFM2350	2020	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship;



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Financial Institutions, Markets & Services	CUFM2351	2020	Use techniques for raising funds from capital market and from different sources- Employability & Entrepreneurship;
Commercial Banking and ALM	CUFM2352	2020	Use techniques for Asset/Liability Management for smooth operation of the Bank. Employability
Security Analysis And Portfolio Management	CUFM2353	2020	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal & Financing	CUFM2354	2020	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for evaluating live projects: Employability & Entrepreneurship
Current Asset Management	CUFM2355	2020	Use methods of determine optimum current assets level and appropriate working capital management policies to achieve corporate objectives - Employability and entrepreneurship
Robotics Process Automation (RPA) in Finance	CUFM2357	2020	Utilize skill set to work in finance with the help of Robot - Employability & Entrepreneurship,
Rural Marketing	CUMM2360	2020	Able to promote products and services in rural market: Employability & Entrepreneurship
Services & Financial Services Marketing	CUMM2362	2020	Design financial service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			customer service offerings: Employability
Brand Management & Consumer Behaviour	CUMM2363	2020	Analyze the relevance of consumer behaviour to the entire marketing process, the nature and stages of consumers' decision making and the factors influencing consumers' choices: Employability
Retail & Etail Management	CUMM2365	2020	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
Performance Management	MGHR2317	2011	Analyze and adopt different models of Human Behaviour to achieve desired performance- Employability
Organization Change and Development	MGHR2318	2011	Assess, design and implement various methods, techniques and sources of training- Employability
Human Resource Planning and Sourcing	MGHR2319	2015	Development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes- Employability, Entrepreneurship
Training and Development	MGHR2320	2011	Assess, design and implement various methods, techniques and sources of training- Employability & Skill development
Selling And Reporting Skills Of Pharmaceutical Product	CUTM 1610	2020	Handle pharmaceutical marketing efficiently- Employability, Entrepreneurship
Pharmaceutical Brand Management	CUTM 1611	2020	Development of brand of a product- Employability, Entrepreneurship
Pharmaceutical Sales and Distribution Management	CUTM 1612	2020	Increase pharmaceutical sales, develop promotional strategy,- Employability, Entrepreneurship



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Business Analytics	CUTM 1613	2020	Use tools and technique to analyze data - Skill development
Drug Regulatory Affairs & Intellectual Property Rights	CUTM 1614	2020	Able to manufacture and sale of pharmaceuticals-Employability, Entrepreneurship
Financial Reporting & Analysis	CUTM 1616	2020	Analyze financial statements-Employability
Contemporary Development Communication	CUTM1218	2020	Communicate appropriately using tools for development - Employability
Data Analysis using Excel and Python	CUTM1241	2020	Can use Python for data analysis and visualization.- Skill Development
Development Project Management Planning Tools and Techniques-I	CUTM1242	2020	Knowledge and skills acquisition on Appraisal, Planning, and Monitoring & Evaluation and impact assessment of development projects - Skill development
Natural Resource Management	CUTM1243	2020	Work effectively with, and within, interdisciplinary and diverse groups to resolve- management problems and achieve management objectives- Employability and Entrepreneurship
Development Theory and Practice	CUTM1222	2020	Utilization of development theories in practical field- Employability and Skill
Development Project Management Planning Tools and Techniques-II	CUTM1223	2020	Knowledge and skills acquisition on Appraisal, Planning, and Monitoring & Evaluation and impact assessment of development projects - Skill development
Social Research Methods	CUTM1246	2020	Apply various data collection techniques, for both quantitative and qualitative research, Select



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			and describe appropriate analytical techniques for quantitative and qualitative methods- Employability and Skill Development
Strategic Management	CUTM1929	2020	Conduct analysis of competitive situations of the enterprise - Employability
Financial Inclusion and Micro Finance	CUTM1932	2020	To appraise the scenario of financial inclusion in the country , acquire skills to operate in Micro Finance sector - Employability, Entrepreneurship
Organization Behaviour	CUTM1933	2020	Analyze and compare different models of Human Behaviour for organizational effectiveness- Employability
Human Resource Management and Organisation Development	CUTM1934	2020	Carry out human resource planning and Job analysis, develop, implement and evaluate recruitment and selection- Employability, Entrepreneurship
Public Policy: Design, Analysis and Implementation	CUTM1935	2020	Designing campaigns and implementation of policies- Employability and Skill
Social Entrepreneurship and CSR	CUTM1936	2020	Promoting Social entrepreneurship and implementing CSR policies- Entrepreneurship
Digital and Social Media Marketing	CUTM1937	2020	Development and usages of social media marketing- Employability, Entrepreneurship
Local Governance systems	CUDM2357	2020	Developing collaboration with local government institutions- Employability
Rural Haat & Market Analysis	CUDM2358	2020	Assessing rural markets and develop appropriate marketing strategies - Employability, Entrepreneurship



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Corporate Social Responsibility	CUDM2360	2020	Demonstrate a multi-stakeholder perspective in viewing CSR issues, Compare and contrast the multiple viewpoints and tradeoffs that exist in the area of CSR, design CSR strategies focusing agri sector- Employability, Skill Development
Disaster Management	CUDM2361	2020	To build skills and abilities in analyzing potential effects of disasters and the strategies to avert the disasters: Employability, Entrepreneurship & Skill development
Organizing Conference	CUDM2381	2020	Learning skills for organizing events - Employability, Entrepreneurship & Skill development
Managing Watersheds	CUDM2365	2020	Watershed management- Employability and skill
M&E of Development Projects	CUDM2366	2020	Project Management- Employability and Entrepreneurship
Extension strategies for development	CUDM2355	2020	Implement development strategies- Employability
Fund Raising for Social Cause	CUDM2368	2020	Develop strategies for fund raising- Employability and Entrepreneurship
Fundamentals of Management	CUTM1209	2020	Apply appropriate managerial principles and theories on the work front- Employability and Entrepreneurship
Organisational Behaviour	CUTM1210	2020	Analyze and compare different models of Human Behaviour - Employability
Statistics for Business Decisions	CUTM1211	2020	Use appropriate sampling techniques, formulate the appropriate hypothesis, use the



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			appropriate measures of central tendency, measures of dispersion, hypothesis testing technique, and interpret the results thereof- Employability, Entrepreneurship
Managerial Economics	CUTM1212	2020	make optimal decisions by integrating the concept of economics and business- make optimal decisions by integrating the concept of developmenteconomics and business- Employability
Business Accounting	CUTM1213	2020	interpret the nature and role of the principal financial statements (i.e., the Income Statement, the Statement of Financial Position, and the Statement of Cash Flows). Read, interpret and analyze financial statements; combine financial analysis with other information to assess the financial performance and position of a company;- Employability and Entrepreneurship
Macro Economics	CUTM1214	2020	Develop knowledge to apply macroeconomic perspective to solve business problems- Employability & Entrepreneurship
Principles of Marketing	CUTM1215	2020	Solving simple marketing issues facing by a variety of enterprises they would be employed in or setting up as entrepreneurs: Employability & Entrepreneurship;
Management Accounting	CUTM1216	2020	Preparation and use of financial statement of different types of



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			organizations: Employability & Entrepreneurship
Business Research	CUTM1217	2020	Formulate the hypothesis and conduct independent research- Employability
Financial Management	CUTM1219	2020	Utilize concepts of financial management, investment, financing, working capital and dividend policy in decisions: Employability & Entrepreneurship
Legal Aspects of Business	CUTM1221	2020	Adhere to legal framework for starting a business venture and running it successfully in conformity with legal parameters- Entrepreneurship and Employability
Advanced Managerial Accounting	CUTM1225	2020	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Financial Institutions, Markets & Services	CUTM1226	2020	Use techniques for raising funds from capital market and from different source- Employability
Commercial Banking and ALM	CUTM1227	2020	Use techniques for Asset/Liability Management for smooth operation of the Bank. Employability
Security Analysis And Portfolio Management	CUTM1228	2020	Use methods of valuations of financial instruments and evaluation of risk as well as return of an individual security and portfolio - Employability & Entrepreneurship
Project Appraisal & Financing	CUTM1229	2020	Preparation of detailed project report, identification of a project, feasibility analysis including market, technical and financial appraisal of a project; Uses project appraisal techniques for





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			evaluating live projects: Employability & Entrepreneurship
Current Asset Management	CUTM1230	2020	Use methods of determine optimum current assets level and appropriate working capital management policies to achieve corporate objectives - Employability and entrepreneurship
Financial Analysis and Visualization	CUTM1231	2020	Solve problems through analytics- Employability & Skill Development
Robotics Process Automation (RPA) in Finance	CUTM1232	2020	Utilize skill set to work in finance with the help of Robot - Employability & Entrepreneurship,
Rural Marketing	CUTM1233	2020	Able to promote products and services in rural market: Employability & Entrepreneurship
Services & Financial Services Marketing	CUTM1235	2020	Design financial service quality measurements to build customer loyalty and evaluate the effectiveness and efficiency of customer service offerings: Employability
Brand Management & Consumer Behaviour	CUTM1236	2020	Analyze the relevance of consumer behaviour to the entire marketing process, the nature and stages of consumers' decision making and the factors influencing consumers' choices: Employability
Retail & Etail Management	CUTM1238	2020	Make merchandise plan and to procure right merchandise: Employability & Entrepreneurship
Environmental Science	CUTM1674	2020	Design and evaluate strategies, technologies and methods for sustainable management of environment- Employability



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Summer Internship	CUTM1224	2020	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship
Financial Accounting	CUTM1942	2020	Preparation and use of financial statement of different types of organizations: Employability & Entrepreneurship
Business Economics	CUTM1948	2020	Apply macroeconomic perspective to solve business problems-Employability & Entrepreneurship
Business Mathematics	CUTM1951	2020	Data analysis using mathematical function- Employability & Entrepreneurship
Business Law	CUTM1943	2020	Utilize legal framework for starting a business venture and running it successfully in conformity with legal parameters-Employability & Entrepreneurship
Business Statistics	CUTM1944	2020	Use statistical tools for managerial decision-making-Employability, Entrepreneurship
Computer Applications in Business	CUTM1953	2020	Utilize computer in the day to day activities of the business - Skill development
Corporate Laws	CUTM1946	2020	Utilize the minimum legal framework for starting a business venture and running it successfully in conformity with legal parameters-Employability & Entrepreneurship
Cost Accounting	CUTM1950	2020	Preparation of cost sheet and analysis of financial statements: Employability & Entrepreneurship
Tally ERP 9	CUTM1956	2020	Preparation of financial statement of different types of organizations with Tally: Skill development



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Corporate Accounting	CUTM1945	2020	Develop Accounting procedures used in corporates and the strategies involved in the corporate decisions.: Employability & Entrepreneurship
Auditing and Corporate Governance	CUTM1689	2020	Identify the areas of fraud and errors in the accounts and take corrective actions while presenting the audit report and streamline the governance system as per law: Employability
E-Commerce	CUTM1957	2020	carry out entrepreneurial activities electronically (E-commerce) Employability
Goods & Services Tax (GST) and Customs Law	CUTM1952	2021	Calculate and file GST, levy and collection of tax, input tax credit, IGST act GSTN etc.: Employability & Entrepreneurship
Banking and Insurance	CUTM1954	2021	Adhere to Regulatory Framework in the Indian Banking system, Regulatory Environment, Evaluation of Bank Performance; Use techniques for Asset/Liability Management for smooth operation of the Bank- Employability & Entrepreneurship
Advanced Corporate Accounting	CUTM1955	2021	Develop Accounting procedures used in corporates and the strategies involved in the corporate decisions.: Employability & Entrepreneurship
On Job Internship-I	CUBC2436	2021	To make self-disciplined, self-motivated and integrate theory and practice- Employability, Entrepreneurship & Skill development
On Job Internship-II	CUBC2437	2021	To make self-disciplined, self-motivated and integrate theory and practice- Employability,



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Entrepreneurship & Skill development
Communication Research Methods	MAMC1101	2018	Analyze data with techniques of social science, media research - Skill development
Introduction to Print & Electronic Media	MAMC1102	2018	Competence in Print and Electronic Media and can work in Print and Electronic Media industry-Skill development and Employability
Society, Media and Communication	MAMC0501	2018	Skill development and Entrepreneurship; Competence on the media business, its functioning and generate idea on inter relationship between media and society.
Cultural Studies	MAMC0903	2018	Skill development; Competence in the process of production of media culture and its influences, cultural diffusion, cultural lag and acculturation kind of procedures
Advanced Digital Media	MAMC1103	2018	Students will be able to Competence skills in modern media and will be able to analyze advertising, Marketing, social networking and using social media for different purposes. - Skill development and Employability
Film studies	MAMC1105	2018	Students will be able to develop skills in different aspects of Film and will be able to analyze film-Employability
Advertising and Public Relations	MAMC1106	2018	After studying this paper student will be able to employ Public Relations and Advertising industry and its functioning.-Employability



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Thesis	MAMC0301	2018	Employability: Analysing Media issues and analysis of media content.
Animation	MCDE0601	2016	Ability to create quality animation performance through a creative and professional portfolio using principles of animation. Will help in Employability and Skill development
Radio Jockeying	MCDE0602	2016	Skill development in aggregate capacity to develop the skills of a Radio Jockey.
TV Anchoring	MCDE0603	2016	Skill development in the aggregate capacity to develop the skills of a Television Anchor.
Fashion Photography	MCDE0604	2016	Skill development: Developing competency for professional fashion photography.
Camera Operator	MCDE0605	2018	Skills development and Employability in camera handling and planning and producing programs for television and Photography.
Video Editor	MCDE0606	2018	Skill development in television field and its functioning. Build the ability to develop and demonstrate strategic plans and planning methods in television content production.
Web Content Development	MCDE0607	2016	Skill development and Entrepreneurship: Competence in Content development for web site or digital media.
Sound Engineer	MCDE0608	2018	Skill development on sound editing with different software.
Adobe tools and Illustrations	MCDE0609	2018	Work on Adobe Illustrator in the beginner level, and on graphics designing. Skill Development and Employability



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Communication, Media and Society	CUTM1264	2020	Skill development in culture to influence nonverbal communication and cultural influences in communication process across society.
Introduction to Journalism	CUTM1265	2020	Students enhance their skill and will able to design news and they have can deliver information-Skill development
Communication Research	CUTM1266	2020	Employability: Conduct research on different media elements, Conduct research on radio, TV, advertising and public relations Write research reports and project proposals-Skill development
Print Media Production	CUTM1267	2020	Student will able to get job on Social media- Employability
Exploring Hindi Cinema	CUTM1268	2020	After successful completion of the course the learners will be able to develop skill on the arts and aesthetic values of Hindi Cinema and India Panorama-Skill development and Employability
Television Journalism	CUTM 1270	2020	students will be able to write script, voice over and field reporting-Skill development The student will be able to produce a program from scripting to broadcasting everything can be done by a students. - Employability
Development Communication	CUTM1271	2020	Students will make strategy designing and campaign designing. They will enhance their skill and able to develop contents for development purposes-Skill development



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Camera and Editing for TV	CUTM 1272	2020	Improve skills in contemporary video technology and operation of cameras, audio, lighting and other television production equipment Improve in film and video, including shot composition and continuity editing-Skill development
Global Politics and Media	CUTM1274	2020	Students will enhance skill on impacts of different issues on global media scenario and global media culture-Skill development
Documentary	CUTM1275	2020	Develop skill to produce documentary cinema.-Skill development
Communication and the Plastic Arts	CUTM1276	2020	The learners will able to communicate in public space by using the plastic arts as the media for mass communication and Competence skill on appreciate the socio-cultural and religious institutions of India.-Skill development
Web Content Development	CUMC2383	2020	Skill development and Employability on technology and content of the world wide web, development of contents on web copy writing, digital news writing for various type of web sites. Skill development on write E-books, Blogs, E-Commerce content.
Radio Jockeying	CUMC 2380	2020	Skill development in aggregate capacity to develop the skills of a Radio Jockey.
Animation	CUMC2379	2020	Ability to create quality animation performance through a creative and professional portfolio using



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			principles of animation.will help in Employability: and Skill development
Introduction to social media	CUMC2382	2020	Student will able to get employment on Social media
Advanced characterization techniques	CUTM1402	2020	Skill development:To know the experimental techniques for the microstructural and physicochemical characterizations of materials and helps in optimizing material research.
Corrosion and advanced coating application	CUTM1404	2020	Employability:Learn about different surface coating technologies and to know substrate technology and its significance in obtaining high performance coating. Various methods for evaluating the performance of the coating.
Synthesis and application of nano composites	CUTM1405	2020	Skill developmet:To provide knowledge of the advantages of using different types of nanocomposites and to make the students familiar with the mechanism of nanocomposites. Employability:Students will understand and appreciate the significance of the nanocomposites as an important class of materials and they will be well equipped to design and develop nanocomposites for specialized applications
Material behavior of nanostructures	CUTM1406	2020	Skill development: It will enhance the ability of the students to explore various nano materials for different application areas depending on their properties.





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Emerging materials	CUTM1407	2020	Employability: Students will be able to work in research and industrial set up on material research and the understanding of materials behavior, or conceived, designed, and realized useful products and technology will be included.
Synthesis routes of nanomaterials	CUTM1408	2020	Skill development: To enhance the skill of the students for fabrication of various nano materials in cost effective routes and useful for device fabrication.
Computational materials science	CUTM1409	2020	Skill development: It will expose the students to the face the challenges in the analysis of materials and how to address those challenges and get hands-on training on open source tools in Molecular Dynamics (LAMMPS) and Hartree-Fock and Density Functional Theory (Quantum Espresso); Data Visualization Tools like OVITO and VMD
Plasma technology	CUTM1410	2020	Employability: To understand fundamental characteristics of plasma, various plasma generation methods, various applications of plasma technology in nanomaterial synthesis, energy production and storage, medicine/health care, etc. and to acquire comprehensive knowledge of how plasmas are utilized for different types of materials processing specially in nanotechnology and developing advanced materials



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Essentials of nanomaterials	CUTM1411	2020	Skill development:To understand and use the properties of Nano-materials in diverse fields and to gain knowledge about the Nanomaterials, their properties, behavior, interaction and use of them over many discipline of science.
Advanced quantum mechanics	CUTM1412	2020	Skill development:To improve the ability of the student to co-relate the theory and the experiement and the gap between them for the material application using some advance simulation tools
Physics of solids and semiconductors	CUTM1413	2020	Skill development:Will be able to explain the physical characteristics such as electronic structure and optical and transport properties, and current-voltage characteristics of semiconductors and apply the knowledge of semiconductors to illustrate the functioning of basic electronic devices
Laser technology	CUTM1414	2020	Skill development:To acquire a thorough understanding of the theory of modern Laser Physics and understand different types of modern lasers and their applications
Industrial chemicals	CUTM1415	2021	Employability-Plastic Additive,Specialty Chemicals,Market Directed Specialty and Fine Chemicals,Management and treatments of Waste chemicals,Sustainable chemicals market and chemical safety. Skill-Extraction and isolation of Fine



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Chemicals, Selected Industrial process and all projects
Pharmacognosy and phytochemistry	CUTM1416	2021	Employability-The whole content of the syllabus
Polymer chemistry	CUTM1417	2021	Employability-Fundamental ,Copolymerization,Radical Polymerization ,Ionic Polymerization ,Conducting Polymers Application of Polymers . Skill-Analysis of Polymers and All Practices
Packaging	CUTM1418	2021	Employability-Fundamentals of packaging ,Conversion technology ,Specialty packaging ,barrier properties Skill-Package Testing and all projects
Industrial pollution and its waste management	CUTM1419	2021	Employability-Fundamentals of pollution ,Water quality standard ,Methods of treatment of waste water ,Air pollution and its Permissible limit , Solid waste disposal and Management , Industrial water and air pollution Skill- Industrial Waste Water Treatment and all practices
Toxicology	CUTM1420	2021	Employability-Concepts of toxicology,Toxicity Pathways,Toxicity mechanism,Integrated Testing Strategies,Toxicity beyond chemicals,Ecotoxicology and Risk assessment,Toxicity remediation and Application of toxicants Skill- All Practices
Biopolymer and hydrogel	CUTM1421	2021	Employability-Fundamentals of biopolymers,Polymer biodegradation and biocomposites,Basics of biomaterials,Properties of



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Hydrogels, Applications of Hydrogels. Skill-Surface modification and characterization of biomaterials, Synthesis and Characterization of hydrogels and all practices.
Nano-pharmaceuticals and biomedical science	CUTM1422	2021	Employability-Nanotechnology in Food and pharmaceutical industry ,Nanotechnology in Biomedical and Pharmaceutical Industry ,Nanotechnology in Agriculture ,Molecular Cell Biology ,Optical and non-optical probes ,Protein Labelling and bio-medical applications ,Target Identification and Drug designing Skill-A practical approach to antibody labelling
Synthetic organic chemistry	CUTM1423	2021	Employability-Fundamentals ,Organic Reagents ,Molecular Rearrangement ,Stereochemistry , Photochemistry, Pericyclic Reaction, Retrosynthesis Skill- All Practices
Energy storage system	CUTM1424	2021	Employability-whole content of Energy storage system syllabus
Sustainable chemistry	CUTM1425	2021	Employability-Fundamental, Green Chemistry, Green Solvents, Green Synthetic Methods, Value addition to Waste Biomass, Sustainable materials, Recycling and circular economy Skill-All Practices
Fluid Dynamics	CUTM1527	2020	Skill-To apply fluid dynamics problems using different tools. Employability - Methods describing Fluid motion, Lagrangian and Eulerian Methods



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Graph Theory	CUTM1531	2020	Skill –To impart knowledge about tracing of graphs and network analysis Employability - Minimum spanning trees;Fundamental Circuit;Cut set and Separability
Applied Number Theory	CUTM1534	2020	Skill- Enhance and reinforce the student’s understanding of concepts through the use of technology when appropriate Employability - Divisibility, Representations of Integers,Computer Operations with Integers,Prime Numbers
TOPOLOGY	CUTM1536	2020	Skill - To introduce the student to maps between topological spaces Employability - student’s ability to handle abstract ideas of Mathematics and Mathematical proofs
Herbal Cosmetic Technology	CUTM1427	2020	Employabilityand Skill- Students Completed practice on analysis of carbohydrates, protein, reducing sugars etc.
Plant Physiology and Metabolism	CUTM 1428	2020	Employability and Skill - Hand on Isolation of chloroplast and measurement of electron transport activity,Racker’s experiment, role of uncouplers. Inhibitors of oxidative phosphorylation and prospects of C4 and C3 plants
Developmental Biology and Phytotomy	CUTM 1430	2020	Employability and Skill- understand the morphology and development of reproductive parts.Learn identification of plants based on cytotaxonomy, helps in forensic science,



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			pharmacology and drug Development .This will be helpful for higher studies and research
Systematics and Diversity of Plants	CUTM 1431	2020	Employability and Skill- Identification of plants based on morphology and cytotaxonomy, provide a comprehensive knowledge on diversity of plant kingdom with focus on all plant groups; algal biomass production and utilization, algal blooms and their environmental impacts, seaweed cultivation and utilization ; help to pursue higher studies and employability in National organization;
Advanced Separation Technologies and Downstream Processing	CUTM 1432	2020	Skill-Learn different extraction techniques, can handle advanced instruments to perform well at industrial level
Advances In Plant Ecology	CUTM 1434	2020	Employability and Skill- Learn to critically evaluate environment pollution issues, practice on E-waste management, smart waste management.
Computational Biology	CUTM 1435	2020	Employability and Skill- Hand on skill and practical knowledge on different databases., Sequence homology and Gene annotation etc.
Microbiology	CUTM 1436	2020	Employability and Skill-Students can do practicals and learn on preparation and sterilization of media, plating, tubing, slanting of media, Isolation of bacteria in pure culture



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Cell and Molecular Biology	CUTM 1437	2020	Employability and Skill-Perform comparative karyotypic analysis, techniques like extraction and separation of DNA by gel electrophoresis, squashing technique for the study of different stages of mitosis and meiosis
Bioanalytical Techniques	CUTM 1438	2020	Skill-Students will be exposed to various biological techniques and their applications in identification, isolation of different biological molecules (DNA , RNA quantification, UV Spectrophotometry, PCR, ELISA, RIA, FISH and GISH); instrumentation and application
Plant Biotechnology	CUTM 1439	2020	Entrepreneurship- Learn the basics principles of plant sciences and molecular biology and their integration towards trait improvement in plants; laboratory techniques used in plant biotechnology,learn the industrial applications of biotechnology in developing new products; can undertake research in plant biotechnology, practice on production of synthetic seeds, plant regeneration via organ culture, and micropopagation, anther culture ect.
Plant Breeding and Genetics	CUTM 1440	2020	Skill-Learn to carry out specific plant breeding activities, such as selection of parental germplasm, conservation and recording of phenotypic variation and selection among progeny; mating systems, selection, testing and



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			germplasm maintenance of horticultural and crop plants
Plant Genomics	CUTM 1441	2020	Skill-Learn to understand genomics and proteomics and the different approaches and techniques employed in these fundamental fields of study; analyze information from plant genomic research and recognise its potential applications in crop improvement
Advanced Aquaculture	CUTM1442	2021	Skill - Systems of aquaculture - Pond culture , Pen culture, Cage culture and Running water culture, Aquaculture production and resource statistics- World and India, Principles of organic aquaculture.Pond Management - Pre stocking and Post stocking,Components of Aquaculture farms, Culture System - Monoculture and Polyculture System, Integrated culture systems.Practices on pre stocking and post stocking management, Biological factors affecting productivity of ponds. Study on waste accumulation in aquaculture system (NH3, Organic matter, CO2), Feed technology: Micro encapsulated feeds; micro coated feeds; micro particulate feeds and bio-encapsulated feeds; mycotoxins and their effects on feeds. Application of Nanotechnology in aquaculture.Analysis of manure, Health management: vaccines; molecular diagnosis of viral





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			diseases; Biofilms and its impact on health management; genetically modified microorganisms as probiotics, Use of probiotics in aquaculture farms
Animal Biotechnology	CUTM1452	2021	Employability - Media preparation, Role of important components of culture media; Common laboratory hazards and safety issues to consider in cell culture laboratory, Sterilization techniques used in animal cell culture, Preparation of media for animal cell culture, Opportunities and challenges in animal cell and tissue culture technology, Study of primary cell culture technique using chick embryo, Animal cell batch culture technique, Methods of producing transgenic farm animals; Reproduction biotechnologies and their use in livestock; Somatic cell nuclear transfer cloning; In Vitro Fertilization, Embryo production, preservation and transfer; Sperm and embryo sexing; Intracytoplasmic sperm injection (ICSI); Cryopreservation and gamete banking, Polyculture of fish for high yield; Edible oyster production; Pearl oyster production; Vermi-culture and vermicomposting for alternative and sustainable agriculture; Fish culture in flow through system and recirculation technology, Vermicompost preparation from plant debris, cattle dung and



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			paper waste, Recombinant therapeutics and production of pharmaceuticals; Production of tissues and organs for humans and xenotransplantation, Preparation of competent cell (Calcium chloride treatment method)
Animal Breeding	CUTM1453	2021	Employability - Problems relating to gene and genotypic frequencies under different conditions. Estimation of inbreeding in regular and irregular systems. Computation of quantitative genetic effects. Estimation of variance components. Computation of heritability, repeatability, genetic, environmental and phenotypic correlations and their standard errors. Estimation of breeding values from different sources of information. Prediction of direct and correlated response to different bases of selection :- a) Computation of realized heritability and genetic correlation. b) Selection index: Computation, Accuracy and response in component trait c) Estimation of heterosis for different types of crosses. d) Estimation of GCA and SCA
Coastal Aquaculture	CUTM1447	2021	Skill-Principles of pond design – Inland and Coastal, Tank and raceway farms, cage farms, pens



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			<p>– Types of culture systems: Traditional, extensive, modified extensive, semi extensive,intensive and super-intensive culture of shrimps and their management, Economics of Shrimp Culture, Design and construction of shrimp culture ponds, Liming and fertilization in shrimp pond, Primary productivity calculation, Estimation by Light and Dark Bottle method. Transportation stocking in nursery ponds, rearing and growout ponds, pond harvesting of Shrimps, Principles of crab hatchery, brood stock, larval and post-larval management. Packing and transportation of crab instar and brood stock, Crab culture: Pond design, management of crab farm. Identification of important cultivable species, Crab culture and crab fattening process, economics of carb culture, Principles involved in seed production of lobsters and mussels. Cage Culture, Collection and identification of commercially important seed of fish and shellfishes, Pen culture, Potential Brackish water fish species for culture, Dissecting out the pituitary gland and preparing the extract. Culture of mullet, Culture of Cobia, Culture of Pompano, Lobster culture, Mussel culture, Pearl culture, Oyster culture, Sea-</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			weed culture, Different types of Products obtained from seaweeds. Visit To shrimp hatchery/Farm, Methods of Shellfish Culture rafts, racks, cages, poles and ropes, Sea ranching, Resources for shore-based aquaculture and sea farming in India, Regulation for mariculture., Estimation of seed survival.
Water and Soil Quality Management in Aquaculture	CUTM1443	2021	Skill - Fertilizers and manures: Different kinds of fertilizers and manures; fertilizer grade, source, rate and frequency of application; Use of treated sewage for pond fertilization and biofertilizers, Ecological changes taking place after fertilizing. Water analysis: measurement of temperature, turbidity, determination of pH and EC. Determination of inorganic nitrogen, and phosphorus. Utilization of bioactive compounds by microorganisms; Cat clay/pyrite soil and its management; seepage and its control. Estimation of primary productivity and chlorophyll. water treatment, water filtration devices, aeration, chlorination, ozonization and UV radiation; eutrophication; Algal bloom control; Aquatic weed management. Determination of salinity, Chlorinity, Total solids, Redox potential, DO, Free CO <sub>2</sub> ., Determination of total



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			alkalinity, hardness. Waste water treatment practices; Waste discharge standards; Water quality management in carp culture; Water quality management in brackishwater shrimp culture; Water quality management in hatcheries. Calculation of dose of fertilizers and pond liming. Soil and water amendments: lime, manures, fertilizers, micronutrients, zeolites, alum, gypsum, Effluent Treatment plant; Aeration, Chlorination, Ozonisation and UV radiation; Waste and water Treatment Practices; Machine Learning for water quality analysis.
Anatomy and Biology of Fish and Shellfish	CUTM1446	2021	Skill - Basic Structural Features, Body shape, scales, and fins, Internal features. Museum Specimen, Habitat, Biogeography, Marine Habitats, Freshwater Fishes, Slide preparation of scales, Food habit study. Hematological study, Techniques for Studying Food Habits and Feeding, Optimal Foraging Theor, Food Choices, Size, and Development, Food Capture, Biochemical study, Fertilization to Hatching (Incubation) Parental Care, Growth Writing Review literature, Discipline, Schooling, Orientation and Migration



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Fish Processing and Value addition	CUTM1448	2021	Skill - Contribution of aquaculture , Implications for the processing industry, How to make your own fish food, Principles of canning , Packaging materials , Processing operations , Canning of specific species, Dry fish preparation, Fresh fish packing, , Freezing systems , Environmental impact of freezing operations, : preparation of fish pickle, Sustainability Impacts of Fish-Processing Operations, On-board Fish Processing, On-board processing , Advantages of on-board processing, The fishmeal process , Alternatives to fishmeal,
Fish and Shellfish Nutrition	CUTM1444	2021	Skill - Principal Nutrients essential for feed formulation, Role of different nutrients on fish and shellfish growth, Nutritional requirement of cultivable fish and shellfish, Importance of Principle of Protein: Energy Ratio for aquaculture. General principles for feed formulation, Different steps of feed formulation, Methods of Feed formulation, Classification of feed ingredients, Energy and protein sources. Evaluation of ingredient quality, Types of feed Dry (pellets, flakes, powdered, Moist Feed), Micro-encapsulated, micro-bound and micro-coated diets, Feed manufacturing units and processes. Pulveriser, Grinder and Mixer (Types and importance), Pelletizer, Crumbler and Drier,



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Extruder and Fat sprayer, Hydro-stability of feed and their storage, Anti-nutritional factors in feed ingredients and methods of their, Principles of Nutritional energetic, Energy partitioning. Role of feed digestibility study in feed quality evaluation, Feed Management in Aquaculture Farms,</p> <ul style="list-style-type: none"> <li>• Identification of Common feed ingredients</li> <li>• Preparation of artificial feeds using locally available feed ingredients</li> <li>• Proximate analysis of feed ingredients and feeds: Moisture, Crude protein</li> <li>• Proximate analysis of feed ingredients and feeds: Crude lipid, Ash</li> <li>• Preparation of feeds with various binders in order to determine their hydro-stability</li> <li>• Effect of Storage on Feed Quality and Determination of sinking rate feeds</li> </ul>
Animal Physiology and Biochemistry	CUTM1450	2021	<p>Employability - • Study of T.S/L.S/V.S of digestive organs (Stomach,Liver,Kidney,intestine etc.)</p> <ul style="list-style-type: none"> <li>• Study of TLC/DLC from prepared blood smear/Determination of ABO Blood group</li> <li>• Estimation of haemoglobin using Sahli's haemoglobinometer /Enumeration of RBC &amp; WBC using haemocytometer</li> <li>• Estimation of presence of</li> </ul>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			lipid/carbohydrate from supplied sample by using spectrophotometer <ul style="list-style-type: none"> <li>• Estimation of total protein content by spectrophotometer/Lowrey's Method</li> <li>• To demonstrate the effect of temperature/pH/concentration on salivary enzyme activity</li> </ul>
Immunology and Cancer Biology	CUTM1451	2021	Employability - Cells and Organs of the Immune System, Structure and function of antibodies, Inflammation, To isolate the lymphocyte from whole blood by density gradient centrifugation method, Screening antisera or hybridoma supernatants for specific antibodies, To detect the presence of an antigen in a sample, To learn coupling of antibody to enzyme Horse Radish Peroxidase (HRP), Study of basic Ouchterlony's double immunodiffusion method, Tumor cell growth in different media,
Bioanalytical Techniques	CUTM1438	2021	Skill - To study and gain expertise on differential and cytological staining techniques, Demonstration of UV-vis Spectrophotometer, To separate proteins on the basis of their size and charge, To separate the amino acids in a mixture by thin layer chromatography. , Purification of immunoglobulins by affinity chromatography, To study the separation of DNA by agarose gel electrophoresis,





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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Fish and Shellfish Health Management	CUTM1445	2021	<p>Skill - , stress in aquaculture and its role in disease development, pathological processes, quarantine and health certification in aquaculture, health management strategies in aquaculture, environmental management, sanitary and phytosanitary agreement, vaccines used in aquaculture, immuno-stimulants used in aquaculture, , Bioremediation, viral diseases of fish, viral diseases of shellfish, bacterial diseases of fish, bacterial diseases in shellfish. crustacean parasites of fish, environmental induced diseases of fish, nutrition deficiency diseases,</p> <ol style="list-style-type: none"> <li>1. Examination of normal and diseased fish - thorough examination of external surface.</li> <li>2. Autopsy of the diseased fish.</li> <li>3. Histopathology of organs of diseased fish (sectioning – staining and mounting).</li> <li>4. Slide preparation of fish parasites (Protozoan – Helminth and Copepod).</li> <li>5. Collection of ectoparasites and its preservation.</li> <li>6. Extraction of DNA from fish fins.</li> </ol>
Ornamental Aquaculture	CUTM1449	2021	<p>Skill - External morphology of important marine aquarium fishes, External morphology of important fresh water aquarium fishes , Identification of common ornamental fishes and plants,</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Aquarium accessories and decorative, Lighting and aeration, Aquarium fish feeds. Dry, wet and live feeds, Setting up and maintenance of Aquarium accessories and equipment, , Ornamental fish breeding - Brood stock maintenance, Breeding techniques of ornamental fishes, Nursery rearing of ornamental fishes, Transportation of ornamental fishes, Application of genetics and biotechnology for producing quality strains, Conditioning and packing of ornamental fishes. Preparation of feed, Ornamental Fish Farm Management Construction of commercial ornamental fish farm, Feeding and maintenance of stock, , Conditioning and packing of ornamental fishes. Preparation of feed, ,Management practices of backyard culture of ornamental fish, Conditioning, packing, transport and quarantine methods, Setting up of breeding tank for live bearers, barbs, goldfish, tetras, chiclids, gouramis, fighters and catfishes, Starting an aquarium shop – a business opportunity, Small scale ornamental fish farming business, Identification of ornamental fish diseases and prophylactic measures.,</p>
Genetics and Epigenetics	CUTM1454	2021	Skill - Identification of particular linkage groups with specific chromosome, Physical distance



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>and map distance, Interference and coincidence, Preparation of Mitotic chromosomes from the given sample, To study the karyotyping of chromosomes from the given animal samples., To study the chromatin modelling and Chromatin-immunoprecipitation (ChIP), Isolation of total histones, and resolution on SDS-PAGE., Isolation of DNA from animal cell (Isolation of nuclei (as a source for studies on structure of chromatin) from rat/mouse liver by discontinuous sucrose-density gradient centrifugation, Dosage compensation in mammals, Genomic imprinting in mammals, Germline and pluripotent stem cells, Epigenetics and human disease., Identification of inactivated X chromosomes as barr body from the given sample, Preparation and study of metaphase chromosomes from mouse bone marrow,</p>
Microbiology	CUTM1436	2021	<p>Skill - Preparation of bacterial smear and staining – Gram's, Acid-fast, Staining of bacterial spores flagella, capsule, spirochaetes, Isolation, purification, identification and biomass production of cyanobacteria, Methods for measurement of bacterial growth by haemocytometer and spectrophotometer, Microbial degradation of pesticides, toxic</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>chemicals, oil; Bioleaching, bioremediation, Agricultural and food Microbiology  Agriculturally important microorganisms, Mycorrhizae, Microbial mineralization, Microbial toxins, Biological control. Microbial toxins produced in food items, Probiotics and preBiotics, Methods of food preservation, Microbiological legal standards of selected food and milk products. , Estimation of phosphate solubilizing capacity of microorganisms, Qualitative analysis of Milk and milk products; Microbiological analysis of food products; Detection of bacteria in milk by Standard plate count, Antibiotic sensitivity test disc preparation; Antibiotic sensitivity test – Kirby – Bauer, Stoke’s; MIC determination by filter paper disc assay, Preparation of different microbial culture media, Genetic regulation: Operon concept (lac, trpara), Genetic mapping: Genome mapping of E. coli, QTL Mapping. Molecular markers in genome analysis, RAPD, RFLP, AFLP, FISH and GISH,</p>
Thermal Physics	CUTM1485	2020	<p>Employability - Laws of Thermodynamics, Carnot engine &amp; efficiency. Carnot’s Theorem. Refrigerator &amp; coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck</p>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			and Clausius Statements and their Equivalence. Applications of Second Law of thermodynamics, Entropy, Thermodynamic Potentials, Kinetic Theory of Gases, Molecular Collisions, Real Gases. Skill- Thermal Physics Lab
Elements of Modern Physics	CUTM1491	2020	Employability - Radioactivity, Fission and Fusion, Lasers. Skill - Elements of Modern Physics Lab
Atomic Structure and Chemical bonding-I	CUTM1469	2021	Employability-Wave mechanics,Atomic structure-2,Periodic Properties-I &II,Ionic bond,Covalent bond, Covalent character in ionic compounds Skill-Practice 1 to 12
S- and P-block elements	CUTM1473	2021	Employability- General Principles of Metallurgy,Acids and Bases,Chemistry of s and p Block Elements I,II and III, Noble Gases,Inorganic Polymers .Skill-1 to 12.
Coordination Chemistry	CUTM1476	2021	Enterprenurship-Crystal Field Theory,Transition Elements Employability-Bio-inorganic Chemistry-1& 2 Skill- All practices
Electrochemistry	CUTM1478	2021	Employability-Conductance I,II, and III , Electrochemistry I.II Enterprenership-Energy Storage and Conversion, Skill- All Practices
Bio-molecules	CUTM1479	2021	Employability-Amino acids, peptide and proteins, Enzymes, Bio-imaging and Bio-Medical science Entrepreneurship- Concept of Energy in Biosystems ,Pharmaceutical Compounds . Skill- All Practices



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Spectroscopy	CUTM1482	2021	Employability- Carbohydrates, Enterprenurship-Dyes Skill- Chromatography and All practices.
Calculus	CUTM1511	2020	Skill- Tracing of different curves and functions. Employability - To explain about vector, different types of vector and vector algebra with suitable example
ANALYSIS-I	CUTM-1513	2020	Skill –• Describe the real line as a complete, ordered field. Employability - Determine the continuity, differentiability, and integrability
Ordinary Differential Equations	CUTM1514	2020	Skill –To understand solving Free Undamped Motion of a Spring System using Python and other skills Employability - Find power series solutions of 2nd order differential equations
Partial Differential Equations and System of Ordinary Differential Equation	CUTM1517	2020	Skill –Application of MATLAB in system of differential equations Employability - To practice heat and wave equations in 2D and 3D..
Numerical Analysis	CUTM1518	2020	Skill – Numerical Solution of different linear and non-linear equations using software.
Complex Analysis	CUTM1520	2020	Skill –Learn the Plotting of complex functions using Matlab Employability - To get equipped with the understanding of the fundamental concepts of functions of a complex variable along with the concepts of analyticity, Cauchy-Riemann relations and harmonic functions.



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Discrete Mathematical Structure	CUTM1522	2020	Skill –To work with different types of Sets, Lattices and Boolean Algebra using Python
Linear Programming	CUTM1523	2020	Skill - To demonstration of the utilization of Linear Programming Problems in industry and business. Employability - • Formulate the necessary and sufficient optimality conditions for linear programming and demonstrate the geometrical interpretation of these conditions
Phycology and Microbiology	CUTM1455	2020	Employability- Classification and identification of microbes and algae. Skill-Practice on staining procedure of different Algae and Bacteria. Hand on practice on Classification and identification of microbes and algae.
Biomolecules & Cell biology	CUTM1456	2020	Employability- Carbohydrates,Lipids,Nucleic Acids,Bioenergetics Skill- Students Completed practice on analysis of carbohydrates, protein, reducing sugars etc.
Mycology & Phytopathology	CUTM1457	2020	Skill-Practice on identification of different casuative agent of plant pathogen like fungi, bacteria and virus and their management.
Anatomy of Angiosperms	CUTM1459	2020	Employability-Learn identification of plants based on cytotaxonomy, helps in forensic science, pharmagonosy and drug development.



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			Skill- To gain hand on skills about the anatomical details of conducting tissues and secretory tissues.
Economic Botany	CUTM1460	2020	Entrepreneurship- Practice on Economic importance of Cereals, Legumes, Tea plant and Extraction of Essential Oil.
Basics of Genetics	CUTM1461	2020	Skill-Learn to carry out specific activities, such as selection of parental germplasm, conservation and recording of phenotypic variation and selection among progeny; mating systems, selection, testing and germplasm maintenance of horticultural and crop plants
Molecular Biology	CUTM1462	2020	Skill- Students can isolate plant DNA & quantification of extracted DNA by spectrophotometric method, plasmid DNA isolation and techniques and DNA sequencing
Plant Systematics	CUTM 1464	2020	Employability- Students can easily identified plants, prepared and seposited herbarium, they also practiced digital documentation of herbarium. Skill- Hands on skill on herbarium preparation.
Reproductive Biology of Angiosperm	CUTM1465	2020	Employability -Keen Observations of some of the variation in different parts of sample fruits, and relate these modifications to changes in function,significance of angiosperm gametogenesis and fertilization, including double fertilization. Help to pursue higher studies.





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			Skill -Hands on skill on Pollen viability: Tetrazoliumtest. Germination: Calculation of percentage germination in different media using hanging drop method.
Plant Physiology	CUTM1466	2020	Employability- A keen observation and application of Plant water relationship and Growth regulators. Skill-Hand on practice on calculate the area of an open stoma and percentage of leaf area open through stomata;Study the phenomenon of seed germination
Plant Metabolism	CUTM1467	2020	Employability- Students isolate and quantify the biomolecules, metabolites present on plants and analyze them. Skill- Hand on skill of bioassay of Avena coleoptile.
Plant Biotechnology	CUTM1468	2020	Entrepreneurship- Learn the basics principles of plant sciences and molecular biology and their integration towards trait improvement in plants; laboratory techniques used in plant biotechnology.
Developmental Biology	CUTM1509	2021	Employability - Late Embryonic Development: Fate of Germ Layers, Extra-embryonic membranes in birds, Implantation of embryo in humans, Placenta (Structure, types and functions of placenta), Post Embryonic Development. Metamorphosis: Changes, hormonal regulations in amphibians and insects., Ageing:



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Concepts and Theories, Implications of Developmental Biology Teratogenesis: Teratogenic agents and their effects on embryonic, development, In vitro fertilization ,Concept of Stem cell, Amniocentesis, 5. Study of Whole mounts of chick embryo 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation,
Principles of Genetics	CUTM1508	2021	Employability - Genetic and environmental basis of sex determination; Chromosomal mechanisms of sex determination in Drosophila and Man., Criteria for extra-chromosomal inheritance, Antibiotic resistance in Chlamydomonas, Mitochondrial mutations in Saccharomyces, Infective heredity in Paramecium and Maternal effects, Complementation Test in Transposable Genetic Elements: Transposons in bacteria, Ac-Ds elements in maize and P elements In Drosophila, Transposons in humans.
Diversity of Chordates	CUTM1501	2021	Employability - General characteristics of Chondrichthyes and Osteichthyes, Classification up to order Migration, Osmoregulation in fishes, Parental care in fishes, Parental care in Amphibians & Neoteny, General characteristics and Classification of Reptilia, Affinities of Sphenodon, Poison apparatus and biting mechanism in snakes,



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			<p>Adaptive characteristics of crocodile, General characteristics and classification (up to order Archaeopteryx), Principles and aerodynamics of flight, Flight adaptations, Migration in birds.</p> <ol style="list-style-type: none"> <li>1. Museum specimen on Protochordata- Balanoglossus, Herdmania, Branchiostoma</li> <li>2. Sections of Balanoglossus through proboscis and branchio-genital regions</li> <li>3. Museum specimen on Petromyzon, Myxine</li> <li>4. Museum specimen on : Fishes- Scoliodon, Pristis, Torpedo, Chimaera</li> <li>5. Museum specimen on Labeo, Exocoetus, Echeneis, Anguilla, Hippocampus, Tetrodon/ Diodon, Anabas</li> <li>6. Museum specimen on- Amphibia: Ichthyophis/Ureotyphlus, Necturus</li> <li>7. Bufo, Hyla, Alytes, Salamandra</li> <li>8. Museum specimen on Reptilia Hemidactylus, Varanus, Uromastix, Chamaeleon, Draco</li> <li>9. Draco, Vipera, Naja, Hydrophis (Identification of poisonous and non-poisonous snakes)</li> <li>10. Aves :Study of two common birds from different orders</li> <li>11. Aves :Study of types beaks and claws</li> <li>12. Mammalia Sorex, Bat (Insectivorous and Frugivorous),</li> </ol>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Funambulus, Loris, Herpestes, Erinaceous
Biochemistry of Metabolic Processes	CUTM1506	2021	<p>Employability - Sequence of reactions and regulation of glycolysis &amp; Gluconeogenesis, Citric acid cycle and significance, Phosphate Pentose Pathway (Role and significance), Glycogenesis, Glycogenolysis</p> <ol style="list-style-type: none"> <li>1. To demonstrate the effect of temperature on enzyme activity</li> <li>2. To estimate the carbohydrate content of supplied tissue by Spectrophotometry method</li> <li>3. To estimate the glycogen content of supplied tissue by colorimeter method</li> <li>4. To estimate the lipid content from the given sample</li> <li>5. To estimate the protein content of supplied tissue by colorimeter method</li> <li>6. Estimation of total protein content in the given sample by Lowry's /Barfoed's Method</li> <li>7. To estimate amino acids from a mixture by using chromatography (paper/Thin layer)</li> <li>8. To estimate amino acids from a mixture by using chromatography (paper/Thin layer)</li> <li>9. Determination of SGPT in given sample by using available kit.(Chick/Goat Serum)</li> <li>10. Estimation of known and unknown protein</li> <li>11. Preparation of Standard Curve of Bovine serum Albumin</li> </ol>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			12. Study the enzymatic activity of Trypsin and Lipase
Principles of Ecology	CUTM1499	2021	<p>Employability - Population: Unitary and Modular populations Unique and group attributes of population: Density, nasality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. Exponential and logistic growth, equation and patterns, r and K strategies, Population regulation - density-dependent and independent factors Population interactions, Gause's Principle with laboratory and field examples, Lotka-Volterra equation for competition and Predation, functional and numerical Responses., Ecosystem: Types of ecosystems with one example in detail, Food chain: Detritus and Grazing food chains, Linear and Y-shaped food chains, Food web.</p> <p>. Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided., Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index for the same community., Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature,</p>



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Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			turbidity/penetration of light, determination of pH, and Dissolved Oxygen content., (Winkler's method), Chemical Oxygen Demand and free CO <sub>2</sub> ., Report on a visit to National Park/Biodiversity Park/Wild life sanctuary.
Cell Biology	CUTM1500	2021	<p>Employability -Cell Division and Cell cycle: Mitosis, Meiosis; Regulation of cell cycle. Cell Signaling: Overview of cell signaling, signaling molecules and receptors, GPCR, Second messengers, Role of second messenger (cAMP) in cell signaling, Activation of gene transcription by GPCR,</p> <ol style="list-style-type: none"> <li>1. Cell Organization and Sub Cellular Structure Studies</li> <li>2. Gram's staining technique for visualization of prokaryotic cells</li> <li>3. Counting of cells using Hemocytometer</li> <li>4. Study of cell attachment</li> <li>5. Study of cell proliferation</li> <li>6. Isolation of Endoplasmic Reticulum</li> <li>7. Isolation and microscopic study of mitochondria</li> <li>8. Study the presence of Barr body in human female blood cells/cheek cell</li> <li>9. Study of Actin Assembly</li> <li>10. Study various stages of mitosis using permanent slides</li> <li>11. Study various stages of meiosis using permanent slides</li> </ol>



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			12. Maintenance of mammalian cell lines
Fundamentals of Biochemistry	CUTM1503	2021	Employability - Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation; Concept of $K_m$ and $V_{max}$ , and Lineweaver-Burk plot; Multi-substrate reactions. <ol style="list-style-type: none"> <li>1. Qualitative tests of functional groups in carbohydrates</li> <li>2. Qualitative tests of functional groups in lipids.</li> <li>3. Qualitative tests of functional groups in protein</li> <li>4. Separation of amino acid using Paper Chromatography.</li> <li>5. Quantitative estimation of salmon sperm/calf thymus DNA using colorimeter (Diphenylamine reagent) or spectrophotometer (<math>A_{260}</math> measurement)</li> <li>6. Action of salivary amylase under optimum conditions.</li> <li>7. Effect of different pH on salivary amylase activity.</li> <li>8. Demonstration of proteins separation by SDS-PAGE.</li> <li>9. Effect of different Temperature on salivary amylase activity.</li> <li>10. Effect of inhibitor on salivary amylase activity</li> </ol>
Animal Physiology: Controlling and Coordinating System	CUTM1502	2021	Employability - Components of blood and their functions, Structure and functions of haemoglobin, Haemostasis, Blood clotting system, Kallikrein-Kininogen system, Haemopoiesis Blood



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			<p>groups: Rh factor, ABO and MN.</p> <ol style="list-style-type: none"> <li>1. Preparation of temporary mounts: Squamous epithelium, Striated muscle fibres and nerve cells</li> <li>2. Preparation of permanent slide of liver/skeletal muscle/any other tissue of given specimen.</li> <li>3. Determination of blood groups</li> <li>4. Preparation of blood smear from blood cells.</li> <li>5. Estimation of haemoglobin using Sahli's haemoglobinometer</li> <li>6. Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex)</li> <li>7. Anatomical model of eye .</li> <li>8. Anatomical model of ear .</li> <li>9. Study of permanent slides of various Mammalian tissues</li> <li>10. Study of slides of endocrine glands</li> <li>11. Identification of histological slides of lymphoid tissue</li> <li>12. Preparation of permanent slide of any five mammalian (goat/chick) tissues by microtomy</li> </ol>
Evolutionary Biology	CUTM1510	2021	Employability - Phylogenetic trees , Multiple sequence alignment , constructions of phylogenetic trees
Fundamentals of Horticulture	ASHO1101	2018	Understanding the fundamentals of various aspects of horticulture crops :Employability
Fundamentals of Plant Pathology	ASPP1101	2018	Understanding the fundamentals of plant disease causing organisms and their management: Employability





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NSS/NCC/Physical Education & Yoga Practices	ASPE1101	2018	Understanding and application of different yoga asanas and pranayama techniques for physical and mental well-being :Skill & Employability
Irrigation water management	ASAG1206	2018	Understands the practices of water management and its application in irrigation management : skill dev.& Employability
Production Technology for Vegetables and Spices	ASHO1203	2018	Understanding the different methods i.e. seed treatment and vegetative propagation for the production of vegetable crops: entrepreneurship & skill
Fundamentals of Entomology –I (Insect Morphology and Taxonomy)	ASEN1201	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Crop Production Technology – I (Cereals, millets and pulses) Kharif crops	ASAG2103	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Fundamentals of Entomology- II (Insect ecology and concepts of IPM)	ASEN2102	2018	Understanding the basic principles of morphology of different plant disease causing insects: Employability
Weed management	ASAG2105	2018	Identification of Weeds and its management in different crops : Employability
Production technology of fruits and plantation crops	ASHO2102	2018	Understanding the different methods i.e. grafting, budding and layering for production of fruit and plantation crops: entrepreneurship & skill
Agricultural Informatics	ASAI2101	2018	To disseminate, capture, access information to achieve



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
			sustainable use of agricultural resources : employment.
Communication skills and personality development	ASEE2104	2018	Develop knowledge of english communication through presentation, extempore and GD: Skill & Employability
Crop Production Technology –II (Oil seeds, fiber, sugar, tobacco, and fodder Crops) Rabi crops	ASAG2204	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Production Technology for Ornamental Crops, MAP and Landscaping	ASHO2204	2018	To gain expertise in production of ornamental crops and landscaping : ,Employability & skill development
Rain-fed Agriculture & Watershed Management	ASAG2211	2018	Understanding the methods of rainwater harvesting and groundwater rechargement :Employability
Principles of seed technology	ASPG2202	2018	Gaining knowledge in seed storage, certification and marketing ways: employment
Diseases of Field and Horticultural Crops and their Management –I	ASPP2202	2018	Identification and management of diseases of field crops :employability
Entrepreneurship Development and Business Communication	ASEE3103	2018	Development of enterpreneurial mindset and entrepreneurial skills for building a start-ups: skill dev
Pests of field Crops and Stored Grain and their Management	ASEN3103	2018	Identification and management of store pest and management of field crops :employability
Diseases of Field and Horticultural Crops and their Management-II	ASPP3103	2018	Identification and management of diseases of horticultural crops :employability
Crop Improvement-I (Cereals,millets,pulses and oil seeds etc)(Kharif crops)	ASPG3104	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability



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Principles of food science and nutrition	ASFS3101	2018	Identification of microbes in food processing and packaging: employability
Geoinformatics and Nano-technology for Precision Farming	ASAG3110	2018	To gain knowledge in nano materials and geoinformatics applications i.e. moonsoon tracking system, drainage networks for precision farming:Employability, skill and enterprenureship
Farming System & Organic farming for Sustainable Agriculture	ASAG3207	2018	To gain expertise in organic farming practice: Employability, skill development and Entrepreneurship
Post-harvest Management and Value Addition of Fruits and Vegetables	ASHO3205	2018	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development
Pests of horticultural crops and their management and Beneficial Insects	ASEN3204	2018	Identification and management of crop & storedgrain pests :employability & skill dev
Crop Improvement-II (fibre, sugar, starches, narcotics, Vegetables, fruits, and flowers)	ASPG3205	2018	Developing skills i.e. field management, cultural practices, disease and pest management for field crop production :skill & Employability
Principles of Integrated Pest and Disease Management (50% Entomology and 50% Pathology)	ASPP3204	2018	Identification of insects pests of different crops and its integrated pest management- Entrepreneurship& skill dev,employability
Protected cultivation and post harvest technologies	ASAE3204	2018	Understanding different practices with relation to Value addition of fruits and vegetables and their packaging and storage :Employability & skill development



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Intellectual Property Rights	ASIP3201	2018	Understanding the process to file patent and register for copyrights:skill and Employability.
Agribusiness Management	ASFE2207	2018	Understanding agriculture and allied business along with building skills i.e. marketing of agri-based products : Skill &Entrepreneurship
Agrochemicals	ASFE2206	2018	Gaining information on different types of agrochemicals used in agriculture: Entrepreneurship
Commercial Plant Breeding	ASFE2204	2018	Understanding of commercial plant breeding techniques i.e. emasculation, crossing and storage practices :Employability & skill development
Food safety and Standards	ASFE2201	2018	Understanding the different food safety principles i.e. pasturization, canning etc: Skill
Biopesticides & Biofertilizers	ASFE2205	2018	Understanding the techniques involved in biopesticide and biofertilizer production: Skill &Entrepreneurship
Micro propagation Technologies	ASFE2208	2018	Gaining knowledge in different micro irrigation techniques i.e. sprinkler and drip irrigation: Skill &Employability
Hi-tech. Horticulture	ASFE2202	2018	Gaining knowledge in different techniques i.e. vertical farming and hydroponics of hitech horticulture: skill & Employability
Remote Sensing & GIS Applications	ASFE2209	2018	Understanding the applications of remote sensing i.e. analyzing the condition of rural roads and detecting land use: Employability, Entrepreneurship and Skill development
Climate Smart Agriculture	ASFE2210	2018	Gaining knowledge on the usage of drones in agriculture for crop



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			improvement: Employability, Entrepreneurship and Skill development
E-Agriculture	ASFE2212	2018	Gaining knowledge in technology dissemination, and information delivery through the advances in ICT: Entrepreneurship
Agricultural Waste Management	ASFE2203	2018	Understanding the various methods for agricultural waste management i.e. green waste, waste silage: Skill development
Principles of Aquaculture	ASFE2213	2018	Understanding the various methods i.e. breeding, raising and harvesting in fish production :Employability, Entrepreneurship and Skill development
RAWEP	AGRW4101	2018	To impart diagnostic and remedial practical training and skills in crop production/horticulture/plant protection through work experience: Employability, entrepreneurship and skill development.
AELP	AGEL4201	2018	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Organic Farming	CUOF2230	2020	Production of organic vegetables & fruits- Entrepreneurship & skill dev
Certification and Inspection Systems in Organic Farming in India	CUOF2231	2020	To understand about the quality and safety standards of organic goods-Employment



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Biopesticides and Biofertilizers	CUOF2232	2020	To understand the production of Bio fertilizers i.e. VAM, PSB, AZACTOBACTER- Entrepreneurship & skill dev
Organic production-field crops	CUOF2233	2020	To understand about the quality and safety standards of organic field crops-Employment
Organic production-horticultural crops	CUOF2234	2020	To understand about the quality and safety standards of organic horticultural crops-Employment
Biofertilizer and Biopesticide Production Technology	CUOF2235	2020	Understanding the techniques involved in biopesticide and biofertilizer production: Skill &Entrepreneurship
AELP Project	CUOF2236	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship,skill dev.and Employability.
Breeding methods: conventional and molecular approach	CUSP2260	2020	Gaining expertise in breeding of varieties ofVegetable, Tuber and Spice Crops - Entrepreneurship & skill development
Seed production of vegetable and cereals crops	CUSP2261	2020	Gaining expertise in seed production of cereal crops- Entrepreneurship & skill development
Hybridization techniques	CUSP2263	2020	Understand the principles of hybridization and its implementation in crop improvement: Skill
Vegetable Seed production	CUSP2264	2020	Understanding and hands on training work with different vegetable seed production: Skill, enterprenureship



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Cultivar purity and seed quality testing	CUSP2265	2020	Gaining expertise in seed quality testing of pure cultivars - Entrepreneurship & skill development
AELP Project	CUSP2266	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Molecular Genomics	CUGE2273	2020	Understanding the principles of molecular biology. Production of genetically modified varieties using advanced molecular techniques Employment:
Plant Tissue Culture Technologies	CUGE2274	2020	Learning about cultures for purity and rapid multiplication of planting materials: Skill, entrepreneurship
Techniques in Molecular Biology	CUGE2275	2020	Employment: Production of genetically modified varieties using advanced molecular techniques
AELP Project	CUGE2276	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Development of Personalized Food and Medicine	CUNU2283	2020	Employment: Production of nutritional enriched foods
Development of Biopesticides and Biofertilizers	CUNU2284	2020	Understanding the techniques involved in biopesticide and biofertilizer production: Skill & Entrepreneurship



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Development of Immune Boosters	CUNU2285	2020	understanding the methods involved in the development of immune boosters
AELP Project	CUNU2286	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Applied hi-tech horticulture	CUAG2290	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Protected cultivation of vegetable crops	CUAG2291	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
High-tech fruit culture	CUAG2292	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Management of high-value cut-flowers	CUAG2293	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Management of crops in hydroponics	CUAG2294	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Use of smart tools for precision crop management	CUAG2295	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
AELP Project/Industrial internship	CUAG2296	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.





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Applied hi-tech horticulture	CUPH2300	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Protected cultivation of vegetable crops	CUPH2301	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
High tech fruit culture	CUPH2302	2020	Production of high value crops under controlled environment- Entrepreneurship & skill dev
Production technology of cut flowers & loose flowers	CUPH2303	2020	understanding the Scope and importance of cut and loose flowers- Entrepreneurship & skill dev
Protected floriculture	CUPH2304	2020	Production of high value floriculture crops under controlled environment- Entrepreneurship & skill dev
Production management of medicinal and aromatic crops	CUPH2305	2020	Understanding the importance and practices for production technology of medicinal and aromatic crops - Entrepreneurship & skill dev
AELP Project	CUPH2306	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities: entrepreneurship, skill dev. and Employability.
Agri Food Markets and Value Chain Analysis	CUAB2320	2020	Employment: bring agricultural product from production in the field to final consumption, wherein at each stage value is added to the product
Rural Haat and Market Analysis	CUAB2322	2020	To understand the scenario and marketing strategies at rural haat- Entrepreneurship & skill development



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Community Owned and Managed Agri Businesses	CUAB2323	2020	To gain knowledge of community based farming and product development- Entrepreneurship & skill development
Agri Warehouse Management	CUAB2324	2020	To gain knowledge on food grain storage and its management at ware house- Employability & skill
Sales and Distribution of Agrifood Products (Internship at LMDC)	CUAB2325	2020	To gain knowledge on sales and distribution of agri food products- Entrepreneurship and employability.
Storage Entomology	CUFS2330	2020	Employment:Post harvest storage of fruits and vegetables with management practices
Seed pathology	CUFS2331	2020	Skill and employment: Future storage of various seeds under protected condition.
Recent trends in post-harvest technology	CUFS2333	2020	To gain knowledge and updates of recent advancement in post harvest technology of foods i.e. ripe sensors, preservation techniques. Enterprenureship
Pest management techniques in storage	CUFS2334	2020	To understand about different possible pest responsible for post harvest losses and their management during food storage: Skill, enterprenureship
Post-harvest storage of fruits and vegetables	CUFS2335	2020	To understand about the differnt factors responsible for post harvest losses and preservation techniques to extend the post harvest life of perishables: Skill, enterprenureship
AELP Project	CUFS2336	2020	To promote professional skills and knowledge through hands on experience. To build confidence and ability to work in project mode. To acquire enterprise management capabilities:



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			entrepreneurship, skill dev. and Employability.
Milk Processing in Dairy Industry	CUDP2240	2020	Entrepreneurship: Understanding the process of milk based product development.
Dairy Starters in Fermented Milk Products	CUDP2241	2020	Entrepreneurship: Understanding the process of milk based product development.
Quality Assurance in Dairy Industry	CUDP2242	2020	Employment: Quality check of milk based products under govt. norms
Dairy Products Development	CUDP2243	2020	Entrepreneurship: Understanding the process of milk based product development.
Synbiotic Dairy Foods	CUDP2244	2020	Entrepreneurship: Understanding the process of probiotic and prebiotic dairy product development.
Post harvest handling and processing of fish and shellfish	CUFT2350	2020	Entrepreneurship: Post harvest handling and processing of fish and shellfish
Design, maintenance of fish processing plant and instrumentation	CUFT2351	2020	Entrepreneurship: Development and maintenance of fish processing plants
Quality assurance, management and certification	CUFT2352	2020	Skill and employment: involves quality assurance of fish and fish based products
Biochemical analysis of fish and fisheries product	CUFT2355	2020	Skill and employment: To familiarize with different fish physiochemical quality estimation parameters.
Preparation of different fisheries products and quality assessment	CUFT2356	2020	Skill and employment: To teach scientific techniques of fish processing and value addition as well as quality of processed products.
Intensive Fish Rearing	CUAQ2250	2020	Skill & Entrepreneurship- To gain knowledge on intensive fish farming



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Ornamental Fish Farming	CUAQ2251	2020	Skill & Enterprenureship- to gain knowledge on marketing oppurtunity and scope of ornamental fish
Biofloc Aquaculture	CUAQ2252	2020	Skill & Enterprenureship- To gain knowledge on recent advancement in fish farming and handling of its components
Framing of SOPs for Intensive fish culture and ornamental fish culture	CUAQ2253	2020	Skill & Enterprenureship- To gain knowledge on SOP framing in intensive fish farming
Health Management in Aquaculture	CUAQ2254	2020	Skill, employability & Enterprenureship- To learn the procedures of health mangement in aquaculture
Feed Management in Aquaculture	CUAQ2255	2020	Skill & Entrepreneurship-To gain knowledge on feed mangement in aquaculture
Aquaculture rearing	CUAQ2256	2020	Skill & Entrepreneurship-To gain knowledge on the techniques involved in aquaculture rearing
Principles and practices of weed management	MAAG 1102*	2017	Skill development: Identification of different weeds and their control which in turn would further provide a scope to students in chemical industries
Principles and practices of water management	MAAG 1103*	2017	Skill development: The students can learn about judicious water management using different efficient technologies which would further lay emphasis on job opportunities as well as they can make themselves self sufficient by serving as entrepreneurs to serve the farming community
Agronomy of major cereals and pulses	MAAG 1204*	2017	Skill development: Students gain an insight into the different package and practices for raising



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			different agronomic crops under varied agroclimatic conditions.
Agronomy of oilseed, fibre and sugar crops	MAAG 1205*	2017	Skill development: Students gain an insight into the different package and practices for raising different agronomic crops under varied agroclimatic conditions.
Cropping systems and sustainable agriculture	MAAG 1206*	2017	Skill development: The students acquire knowledge about different cropping systems under various climatic situations and they can make themselves self employed as successful entrepreneurs
Dry land farming and watershed management	MAAG2107 *	2017	Skill development: On the basis of climatic situations, students will learn raising of different climate resilient crops
Master's seminar	MAAG1291 *	2017	To exploit newly evolved research techniques for enhancing the traits in agronomically important species and learn the tips for giving good presentations.
Soil fertility and fertilizer use	MASA1101	2017	Skill development: Students gain knowledge on the application of fertilizers and soil fertility status
Management of problem soils and waters	MASA1202	2017	Skill development: students study different methods for the reclamation of problematic soils as well as their management
Statistical methods for applied sciences	MAST 2102	2017	Skill: To exploit various statistical tools as well as techniques to compile raw data for representing the results
Experimental designs	MAST 1201	2017	The students can analyze the data of field experiments and interpret the same in the result.
Library and information services	MALI1101	2017	Skill development: To gain knowledge on the utilization of



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			library resources for the research finding of experiments.
Technical writing and communication Skills	MACS1101	2017	Skill development: learn the style and skill of writing technical papers
Intellectual property and its management in agriculture	MAIP 1201	2017	Employability and Skill development: students get an overall idea of IPR and their applications towards the protection of property rights
Basic concepts in laboratory techniques	MALT1201	2017	Skill: students do learn the usage of different laboratory equipments along with the standard operating procedures for handling them
Agricultural research, research ethics and rural development programmes	MAAR2101	2017	Employability and Skill development: Acquire knowledge for research ethics and government policies.
Production technology of cool season vegetable crops	MAVS 1101*	2017	Skill: The students can train others as well as the knowledge can be implemented for carrying out research in collaboration with various government and non-government organizations.
Breeding of vegetable crops	MAVS 1103*	2017	Research: can carry out research to generate new varieties further leading to entrepreneurship
Production technology of under exploited vegetable crops	MAVS 1205*	2017	Entrepreneurship and research to conserve the fading races thereby promoting the importance of these races to the farming community for nutritional security
Seed production technology of vegetable crops	MAVS 2106*	2017	Entrepreneurship, skill and research: Development of quality seeds and planting materials



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Fundamentals of processing of vegetables	MAVS 2108*	2017	Entrepreneurship and skill: To utilize the knowledge in various processing units
Post harvest technology for fruit crops	MAFS1205	2017	Entrepreneurship and skill
Principles of plant breeding	MAGP1103	2017	Research: can carry out research to generate new varieties which further lead to entrepreneurship
Principles and practices of water management	MAAG1103	2017	Skill and research: To learn the judicious utilization of water during various developmental stages of plants
Principles of cytogenetic	MAGP 1102*	2017	Practical skills and concepts leading to entrepreneurship and research to generate high yielding and disease resistant varieties.
Techniques in molecular biology I	MAMB1205	2017	Skill: Students learn the techniques of molecular biology and further carry out research and also serve as entrepreneurs
Genomics and proteomics	MAMB 2110	2017	Research and entrepreneurship: The tools and techniques of both the sciences help the students to carry out research and further serve as entrepreneurs
Development perspectives of extension education	MAEX1101*	2017	Employability: Some concepts in this course and the rural development programs can help in getting employment
Development communication and information management	MAEX1102*	2017	Skill and research: students can learn the skills and involve in research activities
Diffusion and adoption of innovations	MAEX1103*	2017	Research: Students can carry out research on adoption and diffusion of innovations
Gender sensitization for development	MAEX1105*	2017	Research and employability: provide them an opportunity to work in sectors relating to women empowerment



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Research methods in behavioral sciences	MAEX 1206*	2017	Students get an opportunity to learn the basic concepts of research
e-Extension	MAEX 1207*	2017	Skill: Students can learn the usage of various tools related to ICT activities and further carry out research
Market led extension management	MAEX 1208*	2017	Entrepreneurship: students can learn the marketing and entrepreneurial skills
Human Resource Development	MAEX 2109*	2017	Skill: Students can learn the skills of studying human behaviour leading the management of human resources
Agricultural Marketing & Price Analysis	MAAE 1201	2017	Entrepreneurship: students can learn the marketing skills and serve as entrepreneurs
Agricultural Finance and Project Management	MAAE 2102	2017	Entrepreneurship and research: Students can learn the basic concepts of agricultural finance and thereby manage projects
Statistical methods for social sciences	MAST 1203	2017	Skill: Students can learn the usage of different statistical tools that in turn would provide them a scope for employment
Non-Parametrics	MAST 2104	2017	Skill: Students can learn the usage of different non parametrics such as descriptive statistics and statistical inferences which would help them for carrying out research activities
Participatory methods for technology development and transfer	MAEX1104	2017	Skill and employability: students can learn the basic concepts of participatory techniques and thereby help in technology transfer from lab to land
Entrepreneurship Development and Management in Extension	MAEX2110	2017	Entrepreneurship: Students do learn the entrepreneurial skills which ultimately provides them





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			with a scope to serve as entrepreneurs
Taxonomy of Shellfish	FSRM1102	2017	Gain knowledge about the morphometric and meristic character of shellfish for identification. Skill development
Fish Food Organisms	FSAQ2109	2017	Learn and practice the nutritional requirements of fish/shellfish larvae and knowledge on mass culture and enrichment of live food organisms. Employability and Skill development
Aquatic Ecology, Biodiversity and Disaster Management	FSEM2106	2017	Study the coastal resources, integrated coastal zone management strategies to conserve it in case of any disaster.
Freezing Technology	FSPT2103	2017	Understanding the different types of low temperature preservation, handling, storage of different type of fish and fishery products to minimize the spoilage along with post harvest loss. Employability and Skill development
Genetics and Breeding	FSAQ2111	2017	Gain knowledge on genetic basis of inheritance and breeding plans for commercially important fishes. Employability, Entrepreneurship and Skill development
Fish Immunology	FSHM2106	2017	Study the types of immunity, antigen-antibody interactions and learn the Serological methods in disease diagnosis. Employability and Skill development
Fisheries Economics	FSEE2102	2017	Learning the interface between economics and effective management decisions for fisheries business firm.



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Employability and Skill development
Coastal Aquaculture and Mariculture	FSAQ2204	2017	To gain knowledge in establishing and managing different fish/shellfish farming systems in coastal waters. Employability and skill development
Fish Nutrition and Feed Technology	FSAQ2208	2017	Practical knowledge of feed formulation and different feed processing techniques and prepare feed based on the nutritional requirements of fish/shell fish. Employability and skill development
Fish Packaging Technology	FSPT2205	2017	Learn the different types of packaging, importance of packaging in fish processing, functions, objectives and requirements. Skill development
Fish and Shellfish Pathology	FSHM2201	2017	Study fish and shellfish pathogens, their control measures and treatments. Employability and Skill development.
Fishing Craft Technology	FSFE2203	2017	Study the operation of various types of traditional and mechanised fishing craft, design and modification. Skill development
Fisheries Extension Education	FSEE2207	2017	Acquire skills required to practice various fisheries extension approaches, the transfer of modern and scientific findings of lab to the farmers land.
Shellfish Hatchery Management	FSAQ2206	2017	Practical skills of seed production and hatchery management of commercially important crustaceans and molluscs and can setup his/her own hatchery.



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			Employability, Entrepreneurship and Skill development.
Communication Skills and Personality Development	FSEE2208	2017	Students will improve interpersonal skills, active listening and responding skills, communication into everyday practice, teamwork and group discussions skills. Employability and Skill development.
Intensive Fish Rearing	CUAQ 2250	2020	To enable students intensive production of commercially important fishes in different aquaculture production systems at fish rearing unit and ponds-Skill development and Employability
Ornamental fish farming	CUAQ 2251	2020	Aim to Familiar students with ornamental fish culture and aquarium management- Self employability and Skill development
Biofloc Aquaculture	CUAQ 2252	2020	To maintaining biofloc culture system with latest technological advancements-Self employability and Skill development
Framing of SOPs for intensive fish culture and ornamental fish culture	CUAQ 2253	2020	Aim to familiar students with SOPs for fish feed Management and Plant Nutrient Management in Aquaponics-Skill development
Health Management in aquaculture	CUAQ 2254	2020	To enable students fish health managements Clinical signs, symptoms and treatment for different diseases- Skill Development and Self employability
Feed Management in Aquaculture	CUAQ 2255	2020	To make practice and familiar with Identification of Suitable locally available feed ingredients and Formulation of high quality



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			fish feed- Skill Development and Self employment.
Aquaculture Rearing	CUAQ 2256	2020	To provide students with a good understanding of aquaculture rearing and managements-Skill Developments
Introduction to Forensics, Psychology, Law and Statistics	CUTM1634	2020	Skill : Student will gain knowledge of Laws, Assessment of Deception and Statistical analysis.
Instrumental Techniques	CUTM1635	2020	Skill & Employability : Student will perform analysis of various samples by using instruments such as UV, IR, TLC etc.
Crime Scene Management and Forensic Physics	CUTM1636	2020	Skill & Employability : Skill to reconstruct crime scene. Student process the simulated crime scene. Student perform examination of various evidences such as soil, glass, paint, foot print and lip prints.
Finger prints and Questioned Documents	CUTM1637	2020	Skill, Employability & Entrepreneurship, : Student develops latent fingerprints and lift them for comparison & identification purpose.Gains knowledge about various Aspects of AFIS. Student also detects Signature, hand writing & document forgery, examines counterfeit currency, passport and seal impressions. Gains knowledge about instrumental techniques like ESDA, VSC, Stereo Microscope.
Business Communication	CUTM1638	2020	Skill : Improvisation in Vocabulary Skills & Personality Development, Improving Fluency, Voice Quality, Articulation.



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
Quality Management, Narcotic Drugs, Explosives, and Forensic Chemistry	CUTM1639	2020	Skill & Employability : Student learn and perform examination of NDPS drugs and controlled substances , low explosives, Fire debris, Petroleum Products, Beverages, Bribe Trap Cases, Adulterated food, Fibres.
Forensic Biology and Forensic Medicine	CUTM1640	2020	Skill : Student gains knowledge about basics of Human Anatomy, Physiology & Forensic Biology. Student performs examination of skeletal remains to determine age, Sex & race Gains knowledge about medicolegal investigation such as cause of death, time since death etc.
Forensic Serology and DNA Profiling	CUTM1641	2020	Skill & Employability : Students perform experiments to detect the presence of blood, semen, saliva and other body fluids , Performs DNA extraction,
Forensic Toxicology and Pharmacology	CUTM1642	2020	Skill & Employability, : Student isolate and Extract poisons\ Drugs from samples and determines the presence of various poisons. Also gains knowledge about interpretation of toxicological finding and preparation of reports.
Forensic Ballistics and Computer Forensics	CUTM1643	2020	Skill & Employability : Student gains knowledge about various aspects of ballistics, characteristics of ammunitions and Computer Forensics. Student also perform instrumental analysis of GSR & examines bullets and cartridge cases to determine the source of origin.



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Pharmacology and Pharmaceutical Drug Analysis	CUTM1647	2020	Employability : Students do qualitative and quantitative analysis of Pharmaceutical drug by various chemical and instrumental techniques.
Concepts of Toxicology	CUTM1648	2020	Skill & Employability, : Students do analysis of various poison such as metallic poison, pesticides, plant poisons etc. and gains knowledge about interpretation of toxicological finding and preparation of reports.
Modern and Applied Analytical Forensic Chemistry	CUTM1649	2020	Skill & Employability : Student performs analysis of Various Cases in Forensic Chemistry, Validation of new methods & Accreditation in FSL's, Analysis of NDPS, Explosives, Fire, Petroleum Products, Beverages, Bribe Trap Cases, Adulterated food, Fibres & Examination of Forensic Chemicals.
Molecular Biology and Genetics	CUTM1644	2020	Skill & Employability : Student performs serological analysis, quantification of DNA, Extraction of DNA from different sources. Also gains knowledge about genotyping and result preparation.
Biotechnology in Pharmaceutical Sciences	CUTM1645	2020	Skill & Employability, : Student studies about recombinant DNA Technology, Quality Assurance and Quality control, Studying Bioinformatics, intellectual property rights. Student performs isolation of bacteria, genomic and plasmid DNA & Western blotting
Environmental Biotechnology	CUTM1646	2020	Skill & Employability, : Student performs practicals to detect pollutants in samples &



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			estimation of BOD. Student gains knowledge about measurement of pollutants with the help of biosensor and biomarker, Measurement of Biomagnification, Waste water management and Treatment.
Assignment	CUTM1656	2020	Skill : Student study various cases where forensic science played significant role in delivery of justice and write reports.
Seminar	CUTM1657	2020	Skill : Student takes up cases and topics relevant to their specialization subjects and delivers the same.
Principles of Information Security	CUTM1618	2020	Employability-Focus on the CIA models, tools, and techniques for enforcement of security
Digital Forensics	CUTM1619	2020	Employability -Focus on analysis and assessment of risk assesment process & control
Computer Networks	CUTM1620	2020	Skill Development , Employability-Learning about computer network & network security
Cyber Crime & Investigations	CUTM1621	2020	Skill Development,Employability-Learning about Analytical Skills,Comprehension of Cybersecurity Fundamentals and good practices for digital evidence and digital forensics: Skill Development
Intellectual Property Rights	CUTM1622	2020	Employability-Making the students aware of their rights for the protection of their invention done in their project work
Number theory &Cryptography	CUTM1623	2020	Skill Development,Employability- implement and analyze algorithms for integer



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			factorization and primality testing: Skill Development
Advanced Information Security	CUTM1624	2020	Skill Development, Employability- Focus on the CIA models, tools, and techniques for enforcement of security
Cyber Forensics	CUTM1625	2020	Skill Development, Employability- Focus on analysis and assessment of risk assesment process & control : Skill Development, Employability
System and Network Security	CUTM1626	2020	Skill Development, Employability- Gaining practical experience in installation, monitoring, and troubleshooting of current LAN systems
Cyber Law	CUTM1627	2020	Entrepreneursip-Cyber law is associated with all the areas of business & law which have a technological bend like E-commerce Entrepreneursip.
Mobile Security Analysis	CUTM1628	2020	Entrepreneurship-Learning of protection of portable devices such as laptops, smartphones, tablets, and smartwatches from threats and vulnerabilities
IT Governance, Risk and Compliance	CUTM1629	2020	Entrepreneurship-strategy for managing an organization's overall governance, enterprise risk management and compliance with regulations
Business Continuity Planning (BCP) And Disaster Recovery (Dr)	CUTM1630	2020	Skill Development-Learning how to reduce the overall risk & manage the company
Digital Frauds	CUTM1632	2020	Employabilty-Learning of collecting, investigating, preserving, and presenting evidence of cybercrime left in





Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			digital storage devices Employability.
Project/Dissertation	CUTM1633	2020	Employability-Research , Development methodology
Basics of forensic sciences	CUTM1659	2020	Skill : Student gains knowledge about fundamentals of forensic science, organizational setup of different FSLs in India, functioning of national and international investigative agencies, code of conduct, ethical issues, professional standards, qualification of forensic scientists, report writing.
Crime and society	CUTM1660	2020	Skill : Student studies basic concepts of criminology, criminal profiling, types of crime, victimology, penology, psychological disorders and criminality, CJS, case studies
English	CUTM1673	2020	skill : Learns to communicate fluently in different business situation, effective oral and written communication, appropriate words usage with correct pronunciation, clarity of word stress and intonation
Criminal law	CUTM1661	2020	Skill : Student studies criminal procedure code, IPC, IEA, constitutions of india, acts pertaining to socio- economic and environmental crimes
Forensic Psychology	CUTM1662	2020	Skill : Student gains knowledge about fundamental concepts of forensic psychology and forensic psychiatry , the legal aspects of forensic psychology, significance of criminal profiling, the importance of psychological



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			assessment in gauging criminal behaviour, tools and techniques for detection of deception ( polygraph, narco analysis, brain mapping)
Forensic Dermatoglyphics	CUTM1663	2020	Employability & skill : Student locates, develops, lifts and compares fingerprint for identification. Also performs physical and chemical techniques for developing latent fingerprints, collect and examines lipprints, footprints.
Technological methods in forensic sciences	CUTM1664	2020	Employability & skill : Student uses chromatographic methods to separate various samples, gains hands on experience of various instruments
Criminalistics	CUTM1665	2020	Employability & skill : Students visit the simulated crime scene and documents the crime scene.Gains knowledge about the legal importance of chain of custody, the tools and techniques for analysis of different types of crime scene evidence
Introduction to biometry	CUTM1675	2020	Skill & Employability : Student learns the basics of biometry, classification and importance of behavioural biometry. Student identify individual characteristics of Fingerprints.
Handwriting identification and recognition	CUTM1676	2020	Skill & Employability : Student learns importance features in handwriting identification, basics of handwriting characteristics. Student analyze s handwriting samples for prescence of forgery



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			and various other security documents.
Forensic ballistics	CUTM1669	2020	Employability & skill : Student learns classification of firearms, firing mechanism, method of identifying firearms, characteristics of ammunitions, importance of firearm evidence, nature of firearm injuries. They also do characterization of gunshot residues
Forensic toxicology	CUTM1670	2020	Employability & skill : significance of toxicological studies in forensic sciences, classification of poison and their modes of actions, absorption of poison in body fluids, forensic identification of illicit liquors, classification and characteristics of the narcotics drugs and psychotropic substances, menace of designer drugs
Forensic serology	CUFS2412	2020	Skill & Employability : Student learns significance of serological evidences such as blood, urine, saliva etc. in crime scene investigations, usefulness of genetic markers in forensic investigations, forensic importance of blood stain patterns. Student performs preliminary and confirmatory test for detection of all the body fluids.
Audio recognition and video analysis	CUFS2415	2020	Skill & Employability : Learns principle of voice production, forensic significance speaker identification and recognition and video analysis. Student analyses



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			voice samples and performs video analysis.
Forensic Anthropology	CUTM1671	2020	Skill : Student develops skill to identify skeletal remains and estimate age, sex, race of skeletal remains
Forensic Medicine	CUTM1672	2020	Skill : Student develops skill to ascertain the cause of death, time since death and learns about different kind of injuries
Accident Investigations	CUFS2413	2020	Employability : Student lifts the tire impressions and analyze them for determining the source of origin
Explosives Analysis and Post Blast Investigation	CUFS2416	2020	Skill & Employability : Student learns about management of bomb scene and performs examination of various explosives.
Advanced Ophthalmic Diagnostic Procedures & Instrumentation	CUTM1961	2021	Deals with advance practice of ophthalmic instruments, their handling procedures and clinical application.
Introduction to LASER Technology	CUTM1963	2021	make students appreciate the fundamentals of lasers and their diversified applications.
Laser in Refractive Surgery	CUTM1964	2021	make students appreciate the fundamentals of lasers in refractive surgery
LASER in Anterior segment disorders & Glaucoma	CUTM1967	2021	to make students appreciate the fundamentals of lasers used in anterior segment disorders along with the latest intervention of LASER application in the Ophthalmic field.
Research Methodology	CUTM1721	2021	To equip students with a basic understanding of the underlying principles of



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Analytical Techniques	CUTM1709	2020	Understanding the working principle of Common instruments used in a diagnostic lab: Skill dev. & Employability & Enterpreunership
Biological Chemistry	CUTM1710	2020	demonstrate an understanding of fundamental biochemical principles, such as the structure/function of metabolic pathways, and the regulation of biological/biochemical processes: Employability
Clinical Hematology	CUTM1712	2020	Differentiate various hematological procedures and the use of basic equipment essential to working in a Hematology Laboratory: Skill dev. & Employability & Enterpreunership
Clinical Pathology	CUTM1715	2020	Pathological investigations of urine, stool and other biological specimen: Employability/ Enterpreunership/ Skill
Clinical Biochemistry	CUTM1718	2020	Understanding of principle of biochemical Clinical biochemistry tests; to study about diseases related to biochemical and hormone imbalance in human body: Employability/ Enterpreunership/ Skill
Applied microbiology	CUTM1717	2020	Microbiology in diagnostics, hospitals and community: Employability/ Enterpreunership/ Skill
Medical Parasitology and Mycology	CUTM1716	2020	Identification of pathogenic parasite and fungus in disease diagnosis and treatment: Skill dev./ Employability



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Project	CUTM1756	2020	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
Internship	CUTM1755	2020	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
Medical Laboratory Technology	CUTM1723	2020	Quality management in diagnostic division: Employability/ Enterpreunership
Health Programme in India	CUTM1726	2020	Perform as a health care team manager: Employability/ Enterpreunership
Medical Microbiology	CUTM1724	2020	Demonstrate practical skills in the use of tools, technologies and methods common to microbiology, and apply the scientific method and hypothesis testing in the design and execution of experiments: Skill dev. & Employability
Advanced Hematology	CUTM1727	2020	Compare and contrast hematology values under normal and abnormal conditions: Skill dev. & Employability & Enterpreunership
Pharmacology	CUTM1813	2021	Understanding the Pharmokinetics and Pharmacodynamics of the drugs used by patients
Introduction to Quality and Patient safety	CUTM1753	2021	Understand policy related to managing lab and infection control:Employability/ Skill/ Enterpreunership
Medical Laboratory Management	CUTM1751	2021	Recognize the role of clinical laboratory scientist in the assurance of quality health



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			care:Employability, Skill Dev, Entrepreneurship
Medical Instrumentation and Techniques	CUTM1730	2020	handling instruments required in Medical Laboratory set up: Skill dev. & Employability & Entrepreneurship
Immunology	CUTM1736	2020	Understanding the concept of Innate & adaptive immune system; performing serological analysis: Skill dev. & Employability & Entrepreneurship
Hematology	CUTM1731	2020	Differentiate various laboratory test findings with their associated clinical conditions: Employability/ Entrepreneurship/ Skill dev
Analytical Biochemistry	CUTM1738	2020	Learning various tests carried out for biochemical analysis & Hormone investigations: Skill dev. & Employability & Entrepreneurship
Pharmaceutical Microbiology	CUTM1739	2020	understanding of different types of disinfectants/antiseptics and their uses, evaluation of their bactericidal and bacteriostatic action: Employability/ Entrepreneurship
Industrial Microbiology	CUTM1741	2020	Enhances analytic ability of various physical parameters which affect production of industrial products by the microorganisms and the safety aspects of the production and use of these products: Employability/ Entrepreneurship
Diagnostic Bacteriology	CUTM1747	2020	Lab diagnosis for Enteric infection, Respiratory tract Infection, Oral & Stomach infection, Urinary tract infections: Employability/ Skill



<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>	<b>Activities/Content with direct bearing on Entrepreneurship</b>
Diagnostic Parasitology	CUTM1744	2020	Collection and identification of Parasites: Skill dev and Employability
Applied Hematology	CUTM1749	2020	Understanding of Haemopoietic disorders and their laboratory diagnosis : Skill dev. & Employability & Enterpreunership
Parasitology	CUTM1748	2020	Identification of pathogenic parasite in disease diagnosis and treatment: Skill dev. And Employability
BIOLOGY	CUTM1760	2020	understand how these cellular components are used to generate and utilize energy in cells: Employability
MATHEMATICS	CUTM1761	2020	represent linear systems by matrices and solve them for unknown variables: Skill
BASIC BIOCHEMISTRY	CUTM1759	2020	The students become conversant with the Fundamentals of Biochemistry which can be applied in clinical diagnosis of the metabolic disorders: Employability
RADIOGRAPHIC TECHNIQUE -1	CUTM1767	2020	Position the tube; give instructions to the patient; assist radiologist in various procedures: Employability / Skill
BASIC OF MAGNETIC RESONANCE IMAGING	CUTM1776	2020	Understand patient positioning during the MRI procedure of different organ system to obtain well defined images for proper diagnosis of MRI films and images: Employability/ Skill
OCULAR ANATOMY	CUTM1782	2020	Comprehend the basic structure and connections between the various parts of the centra nervous system and the eye so as to understand the neural





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			connections and distribution: Employability
GEOMETRIC OPTICS	CUTM1781	2020	predict the basic properties of the images formed on the retina by the optics of the eye: Employability/ Entrepreneurship
OCULAR PHYSIOLOGY	CUTM1783	2020	List out the physiological principles underlying pathogenesis and treatment of diseases of the eye: Employability
INTRODUCTION TO OPTOMETRY	CUTM1785	2020	Understand the purpose of different instruments used in optometry: Employability
OPTOMETRIC OPTICS I	CUTM1787	2020	Ophthalmic prism knowledge – effects, units, base-apex notation, compounding and resolving prisms: Entrepreneurship/ Skill
OCULAR DISEASES I	CUTM1788	2020	Diagnostic approach and management of the ocular diseases: Employability
OCULAR MICROBIOLOGY AND PATHOLOGY	CUTM1789	2020	Knowledge of pathological processes utilized in the investigation, management and prevention of disease: Employability
CLINICAL EXAMINATION OF VISUAL SYSTEM LAB	CUTM1790	2020	Knowledge on the purpose of each test, its indications and contraindications and will be able to perform various clinical tests: Entrepreneurship/ Employability/ Skill
VISUAL OPTICS II	CUTM1791	2020	Theoretical knowledge and practical skill on visual acuity measurement, objective and subjective clinical refraction: Employability/ Skill
OPTOMETRIC OPTICS II & DISPENSING OPTICS	CUTM1792	2020	Facial measurements - Interpupillary distance measurement and measuring



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			heights (single vision, multifocal, progressives); Lens verification and axis marking and fitting of all lens types; Final checking of finished spectacle with frame adjustments: Employability/ Entrepreneurship/ Skill
OCULAR DISEASES II	CUTM1794	2020	Diagnostic approach, and management of the ocular diseases: Employability
CONTACT LENS- I	CUTM1793	2020	Ability to finalize the CL design for various kinds of patients and Recognize various types of fitting; Ability to fit and Explain all the procedures of Contact Lens fitting to patient: Employability
CONTACT LENSES II	CUTM1795	2020	Special cases CL fitting; Identify and manage the adverse effects of contact lens: Employability/ Skill
BINOCULAR VISION II	CUTM1799	2020	Identify non strabismic anomalies related to accommodation & convergence: Employability
OCCUPATIONAL OPTOMETRY	CUTM1802	2020	To be able to prescribe suitable corrective lenses and eye protective wear: Employability/ Entrepreneurship/ Skill
LAW AND OPTOMETRY	CUTM1805	2020	Universal consensus that legal and ethical considerations are inherent and inseparable parts of good medical practice across the whole spectrum: Skill
PUBLIC HEALTH & COMMUNITY OPTOMETRY	CUTM1804	2020	Organize health education programmes in the community; Vision screening for various eye diseases in the community and for different age groups: Employability/ Skill



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
OPTOMETRIC INSTRUMENTS	CUTM1803	2020	Gain theoretical knowledge and basic practical skill in handling the advanced instruments: Employability/ Enterpreunership/ Skill
PROJECT	CUTM1809	2020	Working on a disease/ disorder specific assignment to fill the research gap in the specific area: Skill dev & Employability
INTERNSHIP	CUTM1810	2020	Dealing with patient, analysis and interpretation of diseases: Skill dev. & Employability & Enterpreunership
Human Anatomy and Physiology I– Theory	BPHT1101	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Analysis I – Theory	BPHT1102	2017	Skill-Employability-Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession
Pharmaceutics I – Theory	BPHT1103	2017	Skill- Employability- Entrepreneurship -Understand the impact of pharmaceutical solutions in a global, economic, environmental, and societal context
Pharmaceutical Inorganic Chemistry – Theory	BPHT1104	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Communication skills – Theory *	BPHT1105	2017	Skill- Students can improve their coomunication Skill
Human Anatomy and Physiology – Practical	BPHL1101	2017	Skill-allows Students to verification of physiological processes discussed in theory classes through experiments on living



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			tissue, intact animals or normal human beings
Pharmaceutical Analysis I – Practical	BPHL1102	2017	Skill- Employability- Students can assay ,preparaed and standarized various Heavy metals and Chemicals
Pharmaceutics I – Practical	BPHL1103	2017	Skill- Employability- Students can prepare various Pharmaceutical dosage form
Pharmaceutical Inorganic Chemistry – Practical	BPHL1104	2017	Skill- Students can perform purity test on drugs or chemicals
Communication skills – Practical*	BPHL1105	2017	Skill- Students can improve their coomunication Skill
Remedial Biology – Practical*	BPHL1106	2017	Skill- Students can learn about structure and functional system of plant and animal kingdom
Human Anatomy and Physiology II – Theory	BPHT1201	2017	Skill-Employability- Hand on practice on various clinical aspects of human physiology and also able to perform different types of experiments
Pharmaceutical Organic Chemistry I – Theory	BPHT1202	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Pathophysiology – Theory	BPHT1204	2017	Skill-Employability-student get to know about various communicable diseases and pathophysiology along with all the techniques for screening test .
Environmental sciences – Theory *	BPHT1206	2017	Employability- student get to know about basic knowledge about the environment and its allied problems
Human Anatomy and Physiology II –Practical	BPHL1201	2017	Skill- allow the verification of physiological processes discussed



Name of the Course	Course Code	Year of introduction	Activities/Content with direct bearing on Entrepreneurship
			in theory classes through experiments on living tissue, intact animals or normal human beings
Pharmaceutical Organic Chemistry I– Practical	BPHL1202	2017	Skill-Students can do qualitative analysis and synthesis of Organic Compound
Biochemistry – Practical	BPHL1203	2017	Skill- Students can demonstrate different Biochemical Test
Computer Applications in Pharmacy – Practical*	BPHL1204	2017	Skill-Allows students to details with Database, Database Management system, computer application in clinical studies and use of databases
Pharmaceutical Organic Chemistry II – Theory	BPHT2101	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Physical Pharmaceutics I – Theory	BPHT2102	2017	Skill- Employability- formulate and solve complex pharmaceutical problems in formulation development
Pharmaceutical Engineering – Theory	BPHT2104	2017	Skill -Employability- Enterprenurship- students can able to understand and perform unit operations, material handling techniques, screening test and plant lay out design for optimum use of resources used in Pharmaceutical industries
Pharmaceutical Organic Chemistry II – Practical	BPHL2101	2017	Skill-Stuents can do qualitative analysis and synthesis of Organic Compound
Physical Pharmaceutics I – Practical	BPHL2102	2017	Skill- Allows student to get a better insight into various areas of formulation research and



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			development, and stability studies of pharmaceutical dosage forms.
Pharmaceutical Microbiology – Practical	BPHL2103	2017	Skill- Allows students to study of all categories of microorganisms especially for the production of alcohol antibiotics, vaccines, vitamins enzymes etc.
Pharmaceutical Engineering – Practical	BPHL2104	2017	Skill- Students can get fundamental knowledge on the art and science of various unit operations used in pharmaceutical industry
Pharmaceutical Organic Chemistry III– Theory	BPHT2201	2017	Skill-Employability- synthesis, characterization of synthetic formulation and solve complex pharmaceutical problems in research and development sector.
Medicinal Chemistry I – Theory	BPHT2202	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures,structure activity relationship of various drug molecules.
Physical Pharmaceutics II – Theory	BPHT2203	2017	Skill- Employability- formulate and solve complex pharmaceutical problems in formulation development
Pharmacology I – Theory	BPHT2204	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design



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			and conduct pharmacological screening experiments.
Pharmacognosy and Phytochemistry I– Theory	BPHT2205	2017	Skill - Students can do identification and evaluation, phytochemicals present in them and their medicinal properties
Medicinal Chemistry I – Practical	BPHL2201	2017	Skill - Students can get fundamental knowledge on the structure, chemistry and synthesis of each class of drug
Physical Pharmaceutics II – Practical	BPHL2202	2017	Skill-student get to know better insight into various areas of formulation research and development, and stability studies of pharmaceutical dosage forms.
Pharmacology I – Practical	BPHL2203	2017	Skill -Student can Observe the effect of drugs on animals by simulated experiments
Medicinal Chemistry II – Theory	BPHT3101	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with structures,structure activity relationship of various drug molecules.
Industrial Pharmacy– I Theory	BPHT3102	2017	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.



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Pharmacology II – Theory	BPHT3103	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Pharmacognosy and Phytochemistry II– Theory	BPHT3104	2017	Skill-Emloyability-Isolate, Identify, Analyze, screen and ensure quality as ell as quantity of drugs/pharmaceuticals and also able to design phytopharmaceutical schemes of crude drugs estimation
Pharmaceutical Jurisprudence – Theory	BPHT3105	2017	Employability- students can able to apply knowledge in the area of pharmaceutical legislation, rules, laws, ethics, acts and amendments related to drugs, engage in life-long learning.
Industrial Pharmacy I – Practical	BPHL3101	2017	Skill- Students can Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality
Pharmacology II – Practical	BPHL3102	2017	Skill- Students can demonstrate isolation of different organs/tissues from the laboratory animals by simulated experiments
Pharmacognosy and Phytochemistry II – Practical	BPHL3103	2017	Skill- Students can carryout isolation and identification of phytoconstituents
Medicinal Chemistry III – Theory	BPHT3201	2017	Employability students get to know about the chemistry, pharmacological activity, metabolic pathways, adverse effect, therapeutic value, classification, synthesis, mechanism of action along with





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			structures,structure activity relationship of various drug molecules.
Pharmacology III – Theory	BPHT3202	2017	skill-Employability- student get to know about correlation of pharmacology with other bio medical sciences, mechanism of action, drug interaction, design and conduct pharmacological screening experiments.
Herbal Drug Technology – Theory	BPHT3203	2017	Skill-Employability- students get to know basic principles of traditional medicinal systems with method of preparation and standardization of ayurvedic formulations
Biopharmaceutics and Pharmacokinetics – Theory	BPHT3204	2017	Skill- Employability- student get to know about pharmacokinetic and pharmacodynamic parameters of different dosage form and use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession
Pharmaceutical Biotechnology – Theory	BPHT3205	2017	Employability- Students van design and develop process to meet desired needs within realistic constraints of pharmacy sector.
Quality Assurance –Theory	BPHT3206	2017	Skill-Employability- students get to know about the validation, confirmation of test product substance and able to analyze, screen and ensure quality of drugs/pharmaceuticals.
Medicinal chemistry III – Practical	BPHL3201	2017	Skill- Students can do chemical synthesis of selected drugs



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Pharmacology III – Practical	BPHL3202	2017	Skill- Students can demonstrate the various receptor actions using isolated tissue preparation
Herbal Drug Technology – Practical	BPHL3203	2017	Skill- Students can prepare herbal cosmetics, natural sweeteners, nutraceuticals
Instrumental Methods of Analysis – Theory	BPHT4101	2017	Skill-Employability- Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession.
Industrial Pharmacy –II Theory	BPHT4102	2017	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.
Pharmacy Practice – Theory	BPHT4103	2017	Skill-Employability- Entrepreneurship- Understanding of professional and ethical responsibility, Manage contemporary pharmaceutical projects, Function effectively as a leader and member of multidisciplinary teams.
Instrumental Methods of Analysis – Practical	BPHL4101	2017	Skill- Students can perform quantitative & qualitative analysis of drugs using various analytical instruments
Practice School*	BPHL4102	2017	Employability- Skill- Entrepreneurship Students get to know about practice work for any subjective topics, Engage in life-long learning.
Biostatistics and Research Methodology	BPHT4201	2017	Skill- students get to know the appropriate statistical methods required for a particular research design and able to design and



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			conduct experiments, as well as to carry out problem analysis data interpretation
Social and Preventive Pharmacy	BPHT4202	2017	Skill-Employability-students get to know different preventive measures in pharmacy, Understanding of professional and ethical responsibility.
Pharmaceutical Regulatory Science	BPHT4204	2017	Skill-Employability-students get to know about different regulatory bodies, Engage in life-long learning.
Cosmetic Science	BPHT4209	2017	Skill-Employability- Students get to know the advanced current technology used for manufacturing the cosmetics at lab scale and industry scale
Project Work	BPHP4201	2017	Skill-Employability-Entrepreneurship- Students get to know about plan of work related to the subjective topics and question answer discussion.
Modern Pharmaceutical Analytical Technique	CUTM2000	2021	Skill-Employability- Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession.
Pharmaceutical Formulation Development	CUTM2001	2021	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.
Intellectual Property Rights	CUTM2003	2021	Skill-Employability-students get to know about different regulatory bodies, Engage in life-long learning.



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Industrial Pharmacy Practical I	CUTM2004	2021	Skill-Students can Manufacture various dosage form
Advanced Biopharmaceutics and Pharmacokinetics	CUTM2006	2021	Skill- Employability- student get to know about pharmacokinetic and pharmacodynamic parameters of different dosage form.
Scale up and Technology Transfer	CUTM2007	2021	Skill-Employability- student can get to design to impart knowledge and skills necessary to train the students to be on scale up, technology transfer process and industrial safety issues
Pharmaceutical Production Technology	CUTM2008	2021	Skill- Employability- students can designed to impart knowledge and skills necessary to train the students to be on par with the routine of Industrial activities in Production
Entrepreneurship Management	CUTM2009	2021	Skill-Entrepreneurship-designed to impart knowledge and skills necessary to train the students on entrepreneurship management.
Industrial Pharmacy Practical II	CUTM2010	2021	Skill-Students can able to know the different Equipments used in Pharmaindustry
Modern Pharmaceutical Analytical Technique	CUTM1583	2021	Skill-Employability- Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession.
Modern Pharmaceutics	CUTM1585	2021	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.



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Regulatory Affairs	CUTM1586	2021	Skill-Students can know the different drug regulatory process
Pharmaceutics Practical I	CUTM1587	2021	Skill-Employability- Entrepreneurship- students get to design and develop process to meet desired needs within realistic constraints to formulate and solve complex pharmaceutical problems.
Molecular Pharmaceutics (Nano Tech and Targeted DDS)	CUTM1589	2021	Skill-Employability-students can design to impart knowledge on the area of advances in novel drug delivery systems
Advanced Biopharmaceutics & Pharmacokinetics	CUTM1590	2021	Skill- Employability- student get to know about pharmacokinetic and pharmacodynamic parameters of different dosage form.
Computer Aided Drug Delivery System	CUTM1591	2021	Skill-Employability -students get to know about the different drug designing softwares, application of simulation techniques, bioinformatics, molecular docking tools.
Cosmetic and Cosmeceuticals	CUTM1592	2021	Skill-Employability- Students get to know the advanced current technology used for manufacturing the cosmetics at lab scale and industry scale
Pharmaceutics Practical II	CUTM1593	2021	Skill-Employability-Students can design and develop various drug delivery system
Computer Networks	CUTM1606	2021	Employability(develop knowledge on networking to handle network setup, which help students in job)
Software Engineering	CUTM1605	2021	Skill And Employability( Developed knowledge to develop SRS for appication, which helps students in their job)



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Digital Painting	CUTM3115	2021	Skill-Design and development of desktop publishing
Apparel Production	CUTM3031	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Heavy Vehicle Technology	CUTM3034	2017	Employability/ Entrepreneurship/Skill - Practice and Project
E-Vehicle Assembly and Service Technology	CUTM3037	2017	Employability/ Entrepreneurship/Skill - Practice and Project
Poultry Farming	CUTM3039	2017	Employability/ Entrepreneurship/Skill
Design Supervising Wooden and Modular Furniture	CUTM3041	2017	Employability/ Entrepreneurship/Skill - Practice and Project
3D Modelling and Printing	CUTM3043	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Precast Concrete Manufacturing	CUTM3045	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Fabrication	CUTM3046	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Internet of Things	CUTM3048	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Mechatronics System Design	CUTM3049	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Editor	CUTM3054	2018	Employability/ Entrepreneurship/Skill - Practice and Project
Refraction Technology	CUTM3057	2019	Employability/ Entrepreneurship/Skill - Practice and Project



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Emergency Medical Technology	CUTM3058	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Radiology Technology	CUTM3061	2019	Employability/ Entrepreneurship/Skill - Practice and Project
X- ray Technology	CUTM3065	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Retail Sales	CUTM3067	2019	Employability/ Entrepreneurship/Skill - Practice and Project
Organic Farming	CUTM3081	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Mushroom Farming	CUTM3082	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Hydroponics Technology	CUTM3083	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Poultry Farming	CUTM3084	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Dairy Farming	CUTM3085	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Vermicomposting Farming	CUTM3086	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Transformer Manufacturing, Repairing and Maintenance	CUTM3087	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Repair and Maintenance of Home Appliances	CUTM3090	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Super critical Co2 plant operation	CUTM3092	2020	Employability/ Entrepreneurship/Skill - Practice and Project



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Bio fertilisers preparation	CUTM3103	2020	Employability/ Entrepreneurship/Skill - Practice and Project
PCB designing & fabrication	CUTM3104	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Introduction to Block Chain Technology	CUTM3105	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Adobe Tools and Illustrations	CUTM3114	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Computer Installation and Maintenance	CUTM3120	2020	Employability/ Entrepreneurship/Skill - Practice and Project
Drug Design using Biovia Discovery Studio	CUTM3122	2021	Employability/ Entrepreneurship/Skill - Practice and Project
Ophthalmic Lens and spectacle manufacturing Techniques	CUTM3123	2021	Employability/ Entrepreneurship/Skill - Practice and Project
Medical Diagnostic Techniques_	CUTM3124	2021	Employability/ Entrepreneurship/Skill - Practice and Project
Polyhouse Automation	CUTM3126	2021	Employability/ Entrepreneurship/Skill - Practice and Project
VR Assets Development	CUTM3131	2021	Employability/ Entrepreneurship/Skill - Practice and Project
3D Modelling and Printing	CUTM3135	2021	Employability/ Entrepreneurship/Skill - Practice and Project
Brew Master	CUTM3142	2021	Employability/ Entrepreneurship/Skill - Practice and Project