Centurion University of Technology and Management

Mapping of Curriculum Relevance to Global, National, Regional and Local Developmental Needs

1 B.Tech -Department of Mechanical Engineering

1.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematics, science, Engineering fundamentals, and mechanical engineering to the solution of engineering problems.
PO2.	Problem analysis: Identify, formulate, review literature and analyse mechanical engineering problems to design, conduct experiments, analyse data and interpret data
PO3	Design /development of solutions: Design solution for mechanical engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations
PO4	Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions in mechanical engineering
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and automation tools including prediction and modelling to mechanical engineering activities with an understanding of the limitations
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to mechanical engineering practice
PO7	Environment and sustainability: Understand the impact of the practical mechanical engineering solutions in social and environmental contexts, and demonstrate the knowledge and need for sustainable development in the society.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the mechanical engineering practice
PO9	Individual and team work: Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in mechanical engineering
PO10	Communication: Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations in mechanical engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the mechanical engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in mechanical engineering

PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in mechanical engineering

1.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduates will develop hands-on skills related to Manufacturing, Design, Welding and Automobile field
PSO2	Graduates will have competency to develop product using Software like CATIA, Pro-E, Solid works, ENOVIA, SIMULIA, ANSYS, Master CAM & Delcam for product design, simulation, analysis and manufacturing.
PSO3	Graduates will able to qualify GATE and other PSU examinations.

1.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Gain sufficient knowledge and understanding of the appropriate scientific and mathematical fundamentals necessary to develop their professional skills in mechanical engineering	✓	✓		
2.	Have awareness and understanding of different cultures and social conditions and problem solving techniques.	✓	✓	✓	✓
3.	Be proficient in integrating knowledge and applying their understanding in identifying problems in society and producing powerful solutions		✓	✓	✓
4.	Attain Professional competence, intellectual maturity and personal growth along with a commitment for ethical development of the industry	✓	✓	✓	✓
5.	Developing knowledge and competence in industry 4.o and Digital Manufacturing (collaboration with Dassault Systemes)	✓	✓	✓	✓

6.	Understand and develop knowledge & competence automotive design and Automobile engineering	✓	✓	✓	✓

2 .B.Tech - Department of Electrical and Electronics Engineering

2.1 PO (programme Outcomes)

POs	Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematic, technology, science, Engineering fundamentals, and civil engineering to the solution of electrical and electronics Engineering problems
PO2	Problem analysis: Identify, formulate, review literature and analyse electrical and electronics engineering problems to design, conduct experiments, analyse data and interpret data
PO3	Design /development of solutions: Design solution for electrical and electronics engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations
PO4	Conduct investigations of complex problems: In electrical and electronics engineering, use research-based knowledge and research methodologies such as design of experiments, data analysis and interpretation, and information synthesis to produce valid conclusions/solutions.
PO5	Mources, and current engineering and IT tools, such as prediction and modelling tool usage: Create, select, and use appropriate methodologies, resolving tools, for electrical and electronics engineering operations while keeping in mind the restrictions.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to electrical and electronics engineering practice
PO7	Environment and sustainability: Understand the impact of the electrical and electronics engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable livelihood development.

PO8	Ethics:Apply ethical concepts and adhere to the civil engineering practice's professional ethics, duties, and norms.
PO9	Individual and team work: In electrical and electronics engineering, function affectively as an individual, as a member or leader of varied teams, and in interdisciplinary situations.
PO10	Communication: Communicate effectively on complex electrical and electronics engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations in electrical and electronics engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the electronics engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in electrical and electronics engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in electrical and electronics engineering

2.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduates can use their skills gained in the domain to work in Industrial Automation/Transformer Manufacturing/Distribution of Power/Renewable Energy.
PSO2	Demonstrate proficiency in use of software & hardware to be required to practice Electrical Engineering profession.
PSO3	Graduates will able to qualify GATE and other PSU examinations.

2.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Gain sufficient knowledge and understanding of the appropriate scientific and mathematical fundamentals necessary to develop their	✓	✓		

	professional skills in electrical engineering				
2.	Have awareness and understanding of different cultures and social conditions and problem solving techniques.	✓	✓	✓	✓
3.	Be proficient in integrating knowledge and applying their understanding in identifying problems in society and producing powerful solutions		✓	✓	✓
4.	Developing knowledge and competence in industry 4.o and Digital Manufacturing (scada and PLC)	✓	✓	✓	✓

3 .B.Tech - Department of Computer Science & Engineering

3.1 PO (Programme Outcomes)

POs	Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematic,information technology,data science, Engineering fundamentals, and computer science engineering to the solution of engineering problems
PO2	Problem analysis: Identify, formulate, review literature and analyse any engineering problems to design, conduct experiments, analyse data and interpret data
PO3	Design /development of solutions: Design solution for engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations

PO4	Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and valid conclusions/solutions in computer science engineering interpretation of data, and synthesis of the information to provide
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to computer science engineering activities with an understanding of the limitations
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to computer science engineering practice
PO7	Environment and sustainability: Understand the impact of the computer science engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the computer science engineering practice
PO9	Individual and team work: Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in computer science engineering
PO10	Communication: Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations in computer science engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the electronics engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in computer science engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in computer science engineering

3.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduate will be able work on high-end technology at IT Services industries.
PSO2	Graduate can acquire industry certified level of competency and work on real time IT application projects viz; Health/Agriculture/Security/Data Management etc.
PSO3	Graduate can start its own IT service company to provide technical solution

3.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Develop knowledge-based force to serve the IT industry with the latest technologies.	✓	✓		
2.	Design and develop web applications using Spring, React.,Android Applications.	✓	✓	✓	✓
3.	Have awareness and understanding of different cultures and social conditions and problem solving techniques in computer science engineering	✓	✓	✓	✓
4.	Understand the softwares of Data Science And Machine Learning	✓	✓	✓	✓
5.	Understand the concepts of cyber security and Cloud Technology	✓	✓	✓	✓

4 .B.Tech - Department of Electronics and Communication Engineering

4.1 PO (Programme Outcomes)

POs	Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematics ,communication technology, Engineering fundamentals, and electronics and Communication engineering to the solution of engineering problems

PO2	Problem analysis: Identify, formulate, review literature and analyze electronics engineering problems to design, conduct experiments, analyze data and interpret data
PO3	Design /development of solutions: Design solution for electronics engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations
PO4	Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions/solutions in electronics and communication engineering
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to electronics and communication engineering activities with an understanding of the limitations
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to electronics and communication engineering practices.
PO7	Environment and sustainability: Understand the impact of the electronics and communication engineering solutions in social and environmental contexts, and demonstrate the knowledge and need for sustainable development in livelihood
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the computer science engineering practice
PO9	Individual and team work: Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in computer science engineering
PO10	Communication: Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write affective reports and design documentation, make effective presentations in computer science engineering

PO11	Project Management and finance: Demonstrate knowledge & understanding of the electronics engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in computer science engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in computer science engineering

4.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduate will be able work on high-end technology at IT Services industries.
PSO2	Graduate can acquire industry certified level of competency and work on real time IT application projects viz; Health/Agriculture/Security/Data Management etc.
PSO3	Graduate can start its own IT service company to provide technical solution

4.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Gain sufficient knowledge and understanding of the appropriate scientific and mathematical fundamentals necessary to develop their professional skills in electronics engineering	✓	✓		
2.	Have awareness and understanding of different cultures and social conditions and problem solving techniques.	✓	✓	✓	✓
3.	Be proficient in integrating knowledge and		✓	✓	✓

	applying their understanding in identifying problems in society and producing powerful solutions				
4.	Developing knowledge and competence in industry 4.o and Digital Manufacturing (IoT,Embedded system and Cadece)	✓	✓	✓	✓
5.	Understand and develop knowledge & competence VLSI design , Embedded Autoation engineering	✓	✓	✓	✓

5 .B.Tech - Department of Civil Engineering

5.1 PO (programme Outcomes)

POs	Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematic, technology, science, Engineering fundamentals, and civil engineering to the solution of engineering problems
PO2	Problem analysis: Identify, formulate, review literature and analyse civil engineering problems to design, conduct experiments, analyse data and interpret data
PO3	Design /development of solutions: Design solution for civil engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations
PO4	Conduct investigations of complex problems: In civil engineering, use research-based knowledge and research methodologies such as design of experiments, data analysis and interpretation, and information synthesis to produce valid conclusions/solutions.

PO5	Mources, and current engineering and IT tools, such as prediction and modelling tool usage: Create, select, and use appropriate methodologies, resolving tools, for civil engineering operations while keeping in mind the restrictions.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to civil engineering practice
PO7	Environment and sustainability: Understand the impact of the civil engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable livelihood development.
PO8	Ethics:Apply ethical concepts and adhere to the civil engineering practice's professional ethics, duties, and norms.
PO9	Individual and team work: In civil engineering, function affectively as an individual, as a member or leader of varied teams, and in interdisciplinary situations.
PO10	Communication: Communicate effectively on complex civil engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations in civil engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the electronics engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in civil engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in civil engineering

5.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduates will have the ability to plan, design and analyse building structural system and smart city planning.
PSO2	Graduates will have the ability to provide design solutions to water supply, sewage syst and land management.
PSO3	Graduates will have professional ethics and morals to formulate and solve civil engineering problems that serve the society

5.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Gain sufficient knowledge and understanding of the appropriate scientific and mathematical fundamentals necessary to develop their professional skills in civil engineering	✓	✓	✓	✓
2.	Have awareness and understanding of different cultures and social conditions and problem solving using civil engineering techniques.	✓	✓	✓	
3.	Be proficient in integrating knowledge and applying their understanding in identifying problems in society and producing powerful solutions		✓	✓	
4.	Understanding and Developing knowledge and	✓	✓	✓	

	competence *Survey, Design and Construction Management*				
5.	Understanding the concepts of 3D Experience Software of Dassault System to work on real-time project and gain practical experience from field visits to industries, dams and irrigation structures, construction sites, etc.	✓	✓	✓	

6. B.Tech Agriculture

6.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and to understand and solve the complex agricultural engineering problems.
PO2	Problem analysis: Identify, formulate, review literature and analyze agriculture engineering problems to design, conduct experiments, analyze data and interpret data
PO3	Design /development of solutions: Design solutions for complex engineering problems and to design agricultural machine components and processes with consideration for the public health, safety and eco-friendly environmental conditions
PO4	Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for agricultural engineering problems
PO5	Modern tool usage: Create, select, and apply appropriate modern engineering techniques and tools including prediction and modeling to complex agricultural engineering practices.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to agricultural engineering practice
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the agricultural engineering practice

PO9	Individual and team work: Function effectively as an agriculture engineer individual, and as a leader in multidisciplinary teams.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write affective reports and design documentation, make effective presentations related agricultural engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the agricultural engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in agricultural engineering
PO12	Life- long learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change pertaining to agricultural engineering.

6.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduates will design, modify and direct the manufacture of agricultural machinery and implement for different agricultural production systems.
PSO2	Graduates will have the proficiency to develop farm machineries, value added post- harvest products and water harvesting structures.
PSO3	Graduates will possess the competency to qualify GATE, JRF and Odisha Public Service examinations.

6.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Develop knowledge on different tillage practices in the crop field used for improving Entrepreneurship				✓
2.	Classification of crops, Effect of different weather parameters on crop growth and development			✓	✓
3.	Engineering Physics, Weiss molecular field theory and ferromagnetism. Curie-Weiss law	✓	✓		
4.	Fluid Mechanics and Open Channel Hydraulics, Properties of fluids: Ideal and real fluid. Pressure and its measurement			✓	

5.	Thermodynamics, Refrigeration and Air Conditioning	✓	✓		
6.	Tractor and Automotive Engines, Study of engine strokes and comparison of 2-stroke and 4-stroke engine cycles	✓	✓		✓
7.	System Integration with DYMOLA, Package Browser, Component Browser, Parameter	✓	✓		
8.	Computer Aided Engineering, Property Module, Material Definitions, Linear Elasticity, Large Strain Elasticity, Metal Plasticity, Material Calibration, Material Databases, Section Properties	✓	✓		
9.	Post-Harvest Engineering of Cereals, Pulses and Oil Seeds, Size reduction machinery				✓
10.	Farm Machinery and Equipment-I, Introduction to machines used for primary tillage, secondary tillage, rotary tillage, deep tillage and minimum tillage				✓
11.	Soil and Water Conservation Engineering, Water erosion and soil erosion				✓
12.	Industrial IOT and Automation: Industry standards communication technology	✓	✓		
13.	Digital Signal & Image Processing: Characterization and classification of signals, Z-Transform	✓	✓		
14.	Agricultural marketing, Microfinance, Farm management, prediction and minimizing error in production			✓	✓

7. B.Tech. (Phyto)

7.1 PO (Programme Outcomes)

Sl .No.	**Programme Outcomes**
PO1	Understanding phytopharma: Acquire and apply knowledge of engineering and pharmaceuticals disciplines of in developing phytopharmaceutical products.

PO2.	Carry out and design experiments related to product development and standardization of phytopharma products.
PO3	Cheaper drug for population: Phytopharma professionals will be able to design drug of natural origin against diseases and application of engineering and pharmaceutical knowledge they can develop cheaper drug.
PO4	Individual and team work: Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in the field of Ayurveda Science.
PO5	Conduct research: starting from target identification, target validation they will be able to identify natural drugs and device systems to scale up it's production.
PO6	Understanding of professional and ethical responsibility of phytopharma professionals.
PO7	Communication: Communicate effectively on various activities of phytopharma with proper understanding of scientific and regulatory terminologies.
PO8	Understand and apply cGMP, GLP at work place.
PO9	Life- long learning: Recognize the need for lifelong learning in the broadest contest of challenges and recent advances in the field of herbal drug technology and nutraceuticals
PO10	Project Management: Demonstrate knowledge & understanding of the natural products and apply these to one's own work, as a member and leader in a team, to manage projects in phytopharma industry.
PO11	Use of modern techniques, skills, and instruments necessary for their profession.
PO12	Make a robust herbal and nutraceutical products based on evidence.

7.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Students qualified in this course will have good placement opportunities in Q.C, Q.A, R&D, Manufacturing, Production & Supply chain units, Regulatory affairs, Marketing sectors of herbal pharmaceutical industries.
PSO2	Beyond the conventional employment in major functional arenas of Phytopharmaceutical industries pupil who graduated in this program can also flourish as organic supplier of herbal materials.
PSO3	Graduate will be able to act as freelance consultant, IPR and Regulatory affairs specialist in Herbal & Ayurvedic sectors, retailer or wholesale market manager of phytopharmaceutical products etc.

7.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**

1.	Commercial MAPs of India. Promoting medicinal plants cultivation as a tool for biodiversity conservation.	✓	✓	✓	✓
2.	History of Ayurveda definition and importance of Padartha vignana.		✓	✓	✓
3.	Good manufacturing practice for herbal medicines.	✓	✓		
4.	Methods of extraction, isolation and characterization of natural products	✓	✓	✓	✓
5.	Demand and supply of crude drugs and their regulations with reference to trade and biodiversity.	✓	✓	✓	✓
6.	Understand the importance of chromatographic and spectroscopic techniques for herbal QC/QA applications.	✓	✓	✓	✓
7.	Understand the basic principle of plant biotechnology and its application in enhancing plant secondary metabolites.	✓	✓	✓	✓

8. B. Tech. Dairy Technology

8.1 PO (Programme Outcomes)

Sl. No.	**Programme Outcomes**
PO1	Undertake all operations of animal husbandry as well as basic ideas on dairy farm

	management practices.
PO2.	Define the macro and microstructure of milk and able to give a comprehensive view of the chemical, physical and organoleptic properties of milk that can be applied for technological processing.
PO3	Able to prepare special milk, describe aseptic packaging techniques as well as detect adulterants and preservatives in market milk.
PO4	Apply their knowledge in explaining the standard methods and manufacturing a great assortment of indigenous dairy products such as burfi, peda, kalakand, milk cake, gulabjamun, sandesh, rosogolla, kheer, rabri etc. in addition to condensed, sweetened condensed and evaporated milk.
PO5	Describe the various dairy engineering operations such as homogenization, pasteurization and other thermal processing.
PO6	Implement the processes for manufacturing, packaging and storing of fat rich dairy products (cream, butter and ghee), as per legal standards and guidelines.
PO7	Capable of manufacturing Cheddar cheese, Gouda cheese, Mozzarella cheese, Swiss cheese, Cottage cheese, processed cheese, processed cheese spread, edible casein from cow and buffalo milk, rennet casein, sodium caseinate, calcium caseinate, whey proteins and whey drinks.
PO8	Implement the construction and operation of different types of instruments used in evaporation, drying, fluidization and membrane processing.
PO9	Able to characterize and improve strategies for developing better starters in preparation of fermented dairy products for dairy industry.
PO10	Know about the physico-chemical changes during manufacture and storage of traditional dairy products, concentrated and dried milk products and ice cream and frozen desserts.
PO11	Analyze factors influencing the sensory quality of different dairy-based food and food products.
PO12	Demonstrate personnel management, manpower planning, training, transfer, promotions policies, job specifications, job evaluation, job enrichment and record maintenance of dairy plant.

8.2 PSO (Programme Specific Outcomes)

Sl. No.	**Programme Specific Outcomes**
PSO1	Graduate will be able to develop skill which can be applied in their jobs of dairy processing.
PSO2	Graduate will be able to pursue higher studies and research in dairy processing.
PSO3	Graduate will be able to use dairy knowledge, innovations and technologies that contributes to improved and sustainable productivity, competitiveness and high quality of life.

8.3 Topics addressing Global, National, Regional and Local relevance

	Topics	**Linked to**

Sl. No.		Global	National	Regional	Local
1.	Develop basic understanding about animal husbandry and to learn farm management practices.		✓	✓	✓
2.	Explain the list of pre-treatments of milk in processing plant and able to prepare consumer milk to be marketed.		✓	✓	✓
3.	Learn the standard methods of manufacture of different indigenous traditional dairy products.		✓		
4.	Able to estimate chemical and microbial quality of microbial quality raw and processed milk.			✓	✓
5.	Understand constructional details functions and unit operations and maintenance of different dairy product manufacturing instruments.		✓	✓	✓
6.	Understand the different components of milk and milk products and their physiochemical changes and shelf-life evaluation.			✓	✓
7.	Understand regulatory microbiological standards of different dairy products and safety in relation to potential pathogens and their public health significance.	✓	✓	✓	✓
8.	Understand propagation and improvement strategies for developing better starters for dairy industry.	✓	✓		
9.	Understand the manufacturing of fermented milk products and their health benefits.	✓	✓	✓	
10.	Understand the manufacturing process of dairy byproducts and their effective utilization.	✓	✓		
11.	Explain issues and concepts in design and layout of dairy plants, including various facilities, sections and equipment.	✓	✓	✓	✓
12.	Understand importance of food microbiology and factors affecting growth of microbes and food spoilage and preservation techniques.		✓	✓	✓

9.M.Tech - Structural Engineering

9.1 PO (programme Outcomes)

POs	Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematic, technology, science, Engineering fundamentals, and structural engineering to the solution of civil Engineering problems
PO2	Problem analysis: Identify, formulate, review literature and analyse civil and structural engineering problems to design, conduct experiments, analyse design and interpret design.
PO3	Design /development of solutions: Design solution for civil structural problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations
PO4	Conduct investigations of complex problems: In civil structural engineering, use research-based knowledge and research methodologies such as design of experiments, structural analysis and interpretation, and information synthesis to produce valid conclusions/solutions.
PO5	Modern tool usage : Create, select, and use relevant approaches, resources, and current engineering and design and simulation tools to structural engineering operations, including prediction and modelling, while keeping in mind the restrictions.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to civil engineering practice
PO7	Environment and sustainability: Understand the impact of the structural engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable livelihood development.

PO8	Ethics:Apply ethical concepts and adhere to the structural engineering practice's professional ethics, duties, and norms.
PO9	Individual and team work: In structural engineering, function affectively as an individual, as a member or leader of varied teams, and in interdisciplinary situations.
PO10	Communication: Communicate effectively on complex structural engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations in structural engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the electronics engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in structural engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in structural engineering

9.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduates will demonstrate the ability to design civil engineering structures or a process that meets desir specification and requirements.
PSO2	Graduates will demonstrate the ability to manage construction projects within defined constrair of scope, time and cost.
PSO3	Understand the need of smart city planning, design and managing projects

9.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local

1.	Gain sufficient knowledge and understanding of the appropriate scientific and mathematical fundamentals necessary to develop their professional skills in Structural Engineering	✓	✓		
2.	Have awareness and understanding of different cultures and social conditions and problem solving techniques in Structural Engineering	✓	✓	✓	✓
3.	Be proficient in integrating knowledge and applying their understanding in identifying problems in society and producing powerful solutions in construction industry		✓	✓	✓
4.	Developing knowledge and competence structural design and simulation tools and provide design solutions to water supply, sewage system and land management.	✓	✓	✓	✓

5.	Developing knowledge and competence in design and analysing building structural systems and smart city planning.	✓	✓	✓	✓

10 .B.Tech - Transportation Engineering

10.1 PO (Programme Outcomes)

POs	Outcomes
PO1	Apply mathematic, engineering fundamentals, and transportation engineering skills to the solution of engineering challenges.
PO2	Problem analysis: Identify, formulate, review literature and analyse transportation engineering problems to design, conduct experiments and interpret the results.
PO3	Design /development of solutions: Design solution for engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations
PO4	Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and valid conclusions/solutions in transportation engineering interpretation of results and synthesis of the information to provide
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and automation technology tools including prediction and modelling to transportation engineering activities with an understanding of the limitations

PO6	The engineer and society: Assess societal, health, safety, legal, and cultural issues, as well as the obligations associated with the transportation engineering profession, using reasoning informed by contextual knowledge.
PO7	Environment and sustainability: Understand the impact of the transportation engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the transportation engineering practice
PO9	Individual and team work: Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in transportation engineering
PO10	Communication: Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations in transportation engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the electronics engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in transportation engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in transportation engineering

10.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Able to recognize, devise and solve intricate transportation problems and research need.

PSO2	Able to plan, design and implement safe, efficient, cost effective, sustainable transportation projects to meet societal and environmental needs.
PSO3	Able to intend and conduct multifarious transportation engineering experiments, surveys as well as to analyze and interpret the experimental/collected data.

10.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Develop knowledge-based force to serve the society with transportation engineering solutions	✓	✓		
2.	Have awareness and understanding of different cultures and social conditions and problem solving techniques in transportation engineering	✓	✓	✓	✓
3.	Understand and develop the concepts of Infrastructure Planning using digital tools	✓	✓	✓	✓
4.	Understand and develop the concepts of traffic Design and Planning using dassault tools	✓	✓	✓	✓

5.	Understand the concepts of Directing Mass Transit Agencies and lobbying and Public Advocacy	✓	✓	✓	✓

11 . M. Tech Power System Engineering

11.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematics, science, Engineering fundamentals, and power system engineering to the solution of engineering problems.
PO2.	Problem analysis: To design, conduct experiments, analyse data, and interpret data, identify, construct, study literature, and analyse power system engineering challenges.
PO3	Design /development of solutions: Design solutions for power system engineering challenges and process system components that match the necessary demands while taking into account public health and safety, as well as cultural, socioeconomic, and environmental factors.
PO4	Conduct investigations of complex problems: To give valid findings in power system engineering, use research-based knowledge and research methodologies such as design of experiments, data analysis and interpretation, and information synthesis.
PO5	Modern tool usage : Create, select, and use relevant approaches, resources, and current engineering and automation technologies to power system engineering operations, including prediction and modelling, while keeping in mind the restrictions.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to power system engineering practice
PO7	Environment and sustainability: Understand the impact of the practical power system engineering solutions in social and environmental contexts, and demonstrate the knowledge and need for sustainable development in the society.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the mechanical engineering practice

PO9	Individual and team work: Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in power system engineering
PO10	Communication: Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations in power system engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the mechanical engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in power system engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in power system engineering

11.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	The ability to evaluate and analyse problems related to Power Systems and control issues and will be able to synthesize the domain knowledge and incorporate the principles for further enrichment.
PSO2	Capability to develop, choose, learn and apply appropriate techniques, various resources including hardware and IT tools for modern power engineering, including prediction and modelling with an understanding of the limitations.
PSO3	Ability to participate in collaborative-multidisciplinary engineering tasks and work as a team member, giving due consideration to economic and financial intricacies, and lead the team in specific spheres.

11.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1.	Understand and develop their professional skills in power system engineering by gaining sufficient knowledge and	✓	✓		

	comprehension of the appropriate scientific and mathematical basics.				
2.	Have awareness and understanding of different cultures and social conditions and problem solving techniques in power system engineering	✓	✓	✓	✓
3.	Attain professional competence, intellectual maturity, and personal growth, as well as a dedication to the industry's ethical development.		✓	✓	✓
4.	Understand and develop knowledge & competence in electrical power systems engineer ,Electrical engineer infrastructure and power distribution	✓	✓	✓	✓
5.	Developing knowledge and competence in power supply and smart grid	✓	✓	✓	✓

12 Master in Computer Application

12.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Engineering knowledge: Apply knowledge of mathematics, science, Engineering fundamentals, and electronics engineering to the solution of engineering problems
PO2	Problem analysis: Identify, formulate, review literature and analyze electronics engineering problems to design, conduct experiments, analyze data and interpret data
PO3	Design /development of solutions: Design solution for electronics engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety, and the cultural, societal and the environmental considerations

PO4	Conduct investigations of complex problems: Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions in electronics engineering
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to electronics engineering activities with an understanding of the limitations
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to electronics engineering practice
PO7	Environment and sustainability: Understand the impact of the electronics engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the electronics engineering practice
PO9	Individual and team work: Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings in electronics engineering
PO10	Communication: Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write affective reports and design documentation, make effective presentations in electronics engineering
PO11	Project Management and finance: Demonstrate knowledge & understanding of the electronics engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments in electronics engineering
PO12	Life- long learning: Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest contest of technological changes in electronics engineering

12.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Graduate will be able work on high-end technology at IT Services industries
PSO2	Graduate can acquire industry certified level of competency and work on real time IT application projects viz; Health/Agriculture/Security/Data Management etc
PSO3	Graduate can start its own IT service company to provide technical solution

12.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1.	IT Infrastructure Management	✓			

2.	Programming in C	✓			
3.	Data Analysis and Visualization using Python		✓		
4.	Software Engineering	✓			
5.	Database Management Systems	✓			
6.	Job Readiness				✓
7.	Computer Networks		✓		
8	Cloud Practitioner	✓			
9	Java Technologies	✓			
10	Data Structures		✓		
11	Advanced Web Programming	✓			
12	Operating System Concepts	✓			
13	Software Technology	✓			
14	Android App Development	✓			
15	Linux Administration		✓		
16	Cloud Computing	✓			
17	Machine Learning using Python		✓		
18	Information Security		✓		

13.B. Com

13.1 PO (Programme Outcomes)

POs	Outcomes
PO1	**Knowledge:** demonstrate acquired knowledge in the field of commerce to work in different industries
PO2	**Problem Solving and Decision Making:** Capable to take decisions and solve organizational issues
PO3	**Professional :** engage the professional skills in the work front
PO4	**Effective Communication using ICT:** effectively engage in communication using modern technologies to share thoughts and ideas

PO5	**Critical/ Reflective thinking:** able to think critically in professional life and become creative/innovative
PO6	**Leadership and Team Work:** able to lead with appropriate vision and work in a team
PO7	**Entrepreneur:** demonstrate the skills of on an entrepreneur to start a venture
PO8	**Learning and Research**: develop a sense of inquiry and investigation life long
PO9	**Ethics:** Follow high ethical standard and appreciate the value system of different cultures

13.2 PSO (Programme Specific Outcomes)

Sl. No.	Programme Specific Outcomes
PSO1	Graduate will be able to develop knowledge and skills of finance, commerce and management that can be applied on the jobs
PSO2	Graduate will be able to pursue higher studies and research in the field of commerce (CA,CS, CMA, etc) and management
PSO3	Graduate will be able to analyse micro and macro environment with sound financial and marketing knowledge to become an entrepreneur.

13.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Acquire conceptual knowledge and skills on financial accounting, recording various kinds of business transactions and to prepare financial statements	✓	✓	✓	✓
2.	Gain broad understanding about important aspects of legal environment of business and knowledge of the provisions of the Companies Act, 2013		✓	✓	✓
3.	familiarize with the basic statistical tools used to summarize and analyze quantitative information for business decision making	✓	✓	✓	✓
4.	Acquire conceptual knowledge of corporate accounting system	✓	✓	✓	✓

5.	Knowledge on forms of Business Organisation and functions of Managers	✓	✓	✓	✓
6.	Knowledge on fundamental economic theories and their impact on pricing, demand, supply, production, and cost concepts	✓	✓	✓	✓
7	knowledge of the various provisions of income-tax law in India and apply such provisions to compute total income and tax liability of individuals and HUFs		✓		
8	Provide knowledge about various methods of cost determination under specific situations and to acquire the ability to use information determined through cost accounting for decision making purpose	✓	✓	✓	✓
9	familiarize with the basic mathematical tools with special emphasis on applications to business and economic situations.	✓	✓	✓	✓
10	familiarize students with the marketing functions in organizations	✓	✓	✓	✓
11	Gain in-depth knowledge of corporate finance, investment management and corporate evaluation	✓	✓	✓	✓
12	Provide knowledge and skills to manage human resources of an organization.	✓	✓	✓	✓
13	Understanding of compliances and procedures laid down in GST law	✓	✓	✓	✓
14	provide computer knowledge and skills to enhance the usefulness of information technology tools for business operations	✓	✓	✓	✓

14 BBA

14.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	**Knowledge:** demonstrate acquired knowledge in the field of management and appreciate the different organizations fulfilling societal needs
PO2	**Problem Solving and Decision Making:** Capable to take managerial decisions and solve organizational issues
PO3	**Professional :** engage the professional skills in the field of management
PO4	**Effective Communication using ICT:** effectively engage in communication using modern technologies to share thoughts and ideas
PO5	**Critical/ Reflective thinking:** able to think critically in professional life and become creative/innovative
PO6	**Leadership and Team Work:** able to lead with appropriate vision and work in a team
PO7	**Entrepreneur:** demonstrate the skills of on an entrepreneur to start a venture
PO8	**Learning and Research**: develop a sense of inquiry and investigation life long
PO9	**Ethics:** Follow high ethical standard and appreciate the value system of different cultures

14.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduate will be able to develop knowledge and skills which can be applied in the managerial jobs
PSO2	Graduate will be able to pursue higher studies and research in the field of management
PSO3	Graduate will be able to analyse micro and macro environment with sound marketing and financial knowledge to become an entrepreneur.

14.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	knowledge about types of business organizations, management theories and principles of management.	✓	✓	✓	✓
2.	Acquire and develop knowledge and skills to understand and analyse the behaviour of people within the organisation to increase employee	✓	✓	✓	✓

	motivation and satisfaction				
3.	Familiarise students with the basic statistical tools used for Managerial decision-making.	✓	✓	✓	✓
4.	Knowledge on micro-economic and macro-economic concepts to understand the policy and market to forecast the business growth	✓	✓	✓	✓
5.	To gain knowledge on accounting and its applications in different corporate sectors	✓	✓	✓	✓
6.	Understand the various marketing strategies that are used by the organizations in the prevailing environment	✓	✓	✓	✓
7.	Knowledge and usages of research tools to carry out research	✓	✓	✓	✓
8	knowledge on various functions of human resource management including acquisition, development and retention	✓	✓	✓	✓
9	Provide advance quantitative tool that can be used by the students to enhance the business decisions	✓	✓	✓	✓
10	Understanding of the basics of Business Law		✓	✓	✓
11	Understanding of the strategies formulated by the Business Organisation in order to stay ahead of the Competition	✓	✓	✓	✓
12	Increase the analytical and communication skills of students by providing ample opportunities for practice and make them employable	✓	✓	✓	✓

13	Making the students environmental conscious to make sustainable ventures	✓	✓	✓	✓

15. MBA

15.1 PO (Programme Outcomes)

POs	Outcomes
PO1	**Critical Thinking and Decision Making:** Critical thinking to take strategic decisions in organizations
PO2	**Analysis of Business Environment:** Systematic analysis of business environment and taking proactive measures
PO3	**Problem Solving:** Use of appropriate managerial skills to solve organizational issues in day-to-day operation
PO4	**Application of knowledge for innovation and creativity**: Able to use information and knowledge for innovation
PO5	**Effective Communication:** Communicate effectively in different for a
PO6	**Leadership and Team Building:** Demonstrate leadership and develop effective teams
PO7	**Project management and finance:** Manage projects in multidisciplinary areas in time bound manner
PO8	**Professionalism:** Demonstrate professional integrity at work front
PO9	**Ethics and Global citizenship:** Identify and address ethical issues and work in multi-cultural environment
PO10	**Entrepreneurship:** Start one's own business as an entrepreneur
PO11	**Higher Education and Research:** Pursuing higher education and carry out research

3.2 PSO (Programme Specific Outcomes)

Sl. No.	Programme Specific Outcomes
PSO1	Develop industry ready professional with business insights and knack of management
PSO2	Pursue higher studies and carry out quality research
PSO3	Analyse micro and macro environment for entrepreneurial ventures
PSO4	Hold high degree of human values and professional ethics

3.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to

		Global	National	Regional	Local
1.	Developing quantitative aspects of management that helps in decision making while dealing with business problems	✓	✓	✓	✓
2.	Understand different economic paradigms using Micro-economics concepts and macro-economic policies for decision making	✓	✓	✓	✓
3.	Utilization of various functions of Microsoft Excel for data analysis	✓	✓	✓	✓
4.	Knowledge of Societal and cultural issues in India for overall development of the country.		✓	✓	✓
5.	Knowledge on operations research techniques, model formulation and applications used to solve business decisions by using computer software	✓	✓	✓	✓
6.	To understand and appraise the applications of the mangerial principles in various organization settings.	✓	✓	✓	✓
7	Familiarize Students with the elements and application of Design thinking	✓	✓	✓	✓
8	Analysis of data using visualisation as a tool	✓	✓	✓	✓
9	Understanding of AI/ML and its transformative impact on business	✓	✓	✓	✓
10	Uunderstanding of Data Analytics and its transforming impact on business.	✓	✓	✓	✓
11	Basic understanding of additive manufacturing/ 3D printing and its transforming impact on business	✓	✓	✓	✓
12	Understand and apply different forms of AR/VR and their applications	✓	✓	✓	✓
13	understanding of Smart Mobility Solutions and its transforming impact on business	✓	✓	✓	✓
14	Understanding of Blockchain and its transforming impact on business	✓	✓	✓	✓

15	Understanding Robotics is used by the leading industry to simplify & automate the process	✓	✓	✓	✓
16	Understanding and Interpreting of Financial Statements	✓	✓	✓	✓
17	Familiarizing the students with the concepts, theories and strategies of marketing that is followed by the organizations	✓	✓	✓	✓
18	Developing interpersonal competencies, teamwork skills and leadership potential; making students understand the modern variant of organizational structure and culture	✓	✓	✓	✓
19	Develop the skills for appreciating and meeting the HR requirements for an emerging organisation	✓	✓	✓	✓
20	Carrying out marketing research and make managerial decisions based on marketing research outcomes	✓	✓	✓	✓
21	Developing skills for preparation and interpretation of business information apart from application of financial theory in investment decisions, with special emphasis on capital structure, Capital Budgeting and other concepts.	✓	✓	✓	✓
22	Understand the various production and operations design decisions and how they relate to the overall strategies of organizations	✓	✓	✓	✓
23	Learn project management methodology to initiate and manage projects efficiently and effectively	✓	✓	✓	✓
24	To learn and understand the actual industry work culture for product development program through gate process	✓	✓	✓	✓
25	develop an understanding about the fundamentals of Designing User/Customer Experience	✓	✓	✓	✓
26	Creating awareness on the desirability of supply chain management (SCM) concepts for the Indian Industry	✓	✓	✓	✓
27	Integrating concerns and develop policy framework related to gender, human rights and ethics in organisations	✓	✓	✓	✓
28	Develop an understanding of sustainable development, SDGs and their relevance for sustainability of organisations	✓	✓	✓	✓

29	To understand and appraise the applications of the mangerial principles in various organization settings.	✓	✓	✓	✓
30	Impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on different systems of body	✓	✓	✓	✓

4 MBA (RUDM&ABM)

4.1 PO (Programme Outcomes)

POs	Outcomes
PO1	Apply the knowledge of management and development theories for development of the society
PO2	Foster analytical and critical thinking for evidence/data based decision making.
PO3	Develop value based leadership ability and team work
PO4	Understand, analyze and communicate effectively
PO5	able to identify and address ethical issues and apply them in organizational settings
PO6	demonstrate entrepreneurial skills to generate innovative solutions for challenges faced by less developed societies.
PO7	Apply the leaning into understanding the development of the organization, thereby being mindful of retaining a balanced decision-making process.
PO8	Carry out research and lifelong learning in the domain

4.2 PSO (Programme Specific Outcomes)

Sl. No.	Programme Specific Outcomes
PSO1	Industry ready professional with management acumen to work in organizations focusing on development
PSO2	Pursue higher studies and carry out quality research
PSO3	Analyse micro and macro environment for entrepreneurial ventures
PSO4	Hold high degree of human values and professional ethics

4.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Design and implement development communication strategies combining participatory methods with communication processes, social media and digital tools best suited for a specific situation			✓	✓
2.	Understand different economic paradigms using Micro-economics concepts and macro-economic policies for decision making	✓	✓	✓	✓
3	Utilization of various functions of Microsoft Excel for data analysis and use of Python for visualization	✓	✓	✓	✓
4	Knowledge of Societal and cultural issues in India for overall development of the country.		✓	✓	✓
5	To understand and appraise the applications of the mangerial principles in various organization settings.	✓	✓	✓	✓
6	Understanding and Interpreting of Financial Statements	✓	✓	✓	✓
7	Familiarizing the students with the concepts, theories and strategies of marketing that is followed by the organizations	✓	✓	✓	✓
8	Developing interpersonal competencies, teamwork skills and leadership potential; making students understand the modern variant of organizational structure and culture	✓	✓	✓	✓
9	Develop the skills for appreciating and meeting the HR requirements for an emerging organisation	✓	✓	✓	✓
10	Carrying out research and make managerial decisions based on marketing research outcomes	✓	✓	✓	✓
11	Developing skills for preparation and interpretation of business information apart from application of financial theory in investment decisions, with special emphasis on capital structure, Capital Budgeting and other concepts.	✓	✓	✓	✓

12	Understand the various production and operations design decisions and how they relate to the overall strategies of organizations	✓	✓	✓	✓
13	Learn development project management methodology to initiate and manage projects efficiently and effectively	✓	✓	✓	✓
14	Basic understanding about development theories and practices	✓	✓	✓	✓
15	Creating awareness on the desirability of supply chain management (SCM) concepts for the Indian Industry	✓	✓	✓	✓
16	Integrating concerns and develop policy framework related to gender, human rights and ethics in organisations	✓	✓	✓	✓
17	Develop an understanding of sustainable development, SDGs and their relevance for sustainability of organisations	✓	✓	✓	✓
18	To understand and appraise the applications of the mangerial principles in various organization settings.	✓	✓	✓	✓
19	Knowledge on managing natural resources	✓	✓	✓	✓
20	Knowledge and skills on rural marketing			✓	✓
21	Knowledge and skills on sustainable livelihoods			✓	✓

17 B.Sc. Physics

17.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes

PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2.	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues andthe consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

17.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Provide knowledge about material properties and its application for developing technology to ease the problems related to the society. Applied course will enable them to be suitable for various fields
PSO2	Understood the basic concepts, fundamental principles and the scientific theories related to various phenomena of Physics and their relevancies in the day-to-day life.
PSO3	Learn the concepts as Classical Mechanics, Solid State Physics, Quantum Mechanics, Relativity, Nuclear and Particle Physics, Electronics etc. Analyze the applications of mathematics to the problems in physics & develop suitable mathematical method for such application & for formulation of physical theories.

17.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Gain knowledge about detectors and accelerators used world over in Nuclear and Particle Physics research and their applications also in Materials Science Research	✓	✓		
2.	Use Scilab to solve mathematical problems.	✓	✓	✓	
3.	Sketch, explain and design the amplifier circuit for given specification and analyze them discuss oscillator principles, and frequency stability. Analyze the different types of Oscillators.	✓	✓	✓	
4.	Understand the satellite communication system and navigation system. Also understand the architecture of mobile communication system which will enable them for further study in this growing area.	✓	✓	✓	
5.	Develop a heuristic and wholistic understanding of dynamics occuring in Physical, Chemical and Biological systems	✓	✓	✓	✓

18.BSc Chemistry

18.1. Program Outcome (PO)

POs	Program Outcomes
PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences

PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modelling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

18.2 PSO (Programme Specific Outcomes)

Sl. No.	Program Specific Outcome
PSO1	The Programme enables the students to understand basic facts and concepts of Chemistry while retaining the exciting aspects of Chemistry so as to develop interest in the study of chemistry as a discipline.
PSO2	Students will be able to develop the ability to apply the basic principles like quality testing and reactions in day-to-day activities and problem-solving skills.
PSO3	Able to familiarize with the emerging areas of Chemistry and their applications in various spheres of Chemical sciences and to apprise the students of its relevance in future studies

18.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**

1.	Understand and employ selected techniques for the calculating atomic number, atomic mass, quantum number, bond order, and bond length using a various method	✓	✓	✓	
2.	Plan and carry out laboratory experiments, including data analysis and conclusions	✓	✓	✓	✓
3.	To familiar with a variety of different methods for synthesizing inorganic materials and principles of inorganic polymer synthesis		✓	✓	✓
4.	Understand the concepts of quantum chemistry and their application to microscopic entities and will be able to differentiate between classical and quantum mechanics	✓	✓	✓	✓
5.	Understand the working principles and analysing methods of different spectroscopic techniques and interpret the data related to this instrumental analysis	✓	✓	✓	✓
6.	Understand the basic principle of DNA analysis and its application	✓	✓	✓	✓
7.	To design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.	✓	✓	✓	✓
8.	Able to explore new areas of research in both chemistry and allied fields of science and technology	✓	✓	✓	✓
9.	To understand the applicability of chemical thermodynamics in various industrial processes as well as day to day life incidents	✓	✓	✓	✓
10.	Able to critically examine synthesis and reaction mechanism of different heterocyclic compounds, as well as natural alkaloid and terpenoid molecules	✓	✓	✓	✓

19. B.Sc. Mathematics

19.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2.	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations

PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues andthe consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

19.2. PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Graduates will develop their ability to apply critical thinking skills to solve problems that can be modelled mathematically, to critically interpret numerical and graphical data, to read and construct mathematical arguments and proofs.
PSO2	Graduates will have an ability to design, implement, and evaluate a computer based hypothetical solution
PSO3	Graduates will able to qualify JAM/JEST and other PSU examinations.

19.3. Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**

1.	Understand and recognize other important classes of functions (such as trigonometric and rational functions), and be able to use calculus with these functions.	✓	✓		
2.	Determine the continuity, differentiability, and integrability of functions defined on subsets of the real line, Apply the Mean Value Theorem and the Fundamental Theorem of Calculus to problems.	✓	✓	✓	
3.	Demonstrate ability to think critically by interpreting theorems and relating results to problems in other mathematical disciplines.	✓	✓	✓	
4.	Perform error analysis to select an appropriate numerical model and to estimate errors in numerical solution of a given problem.	✓	✓	✓	
5.	Illustrate the applications of the calculus of residues in the evaluation of real integrals.	✓	✓	✓	

20. B.Sc. Botany

20.1 PO (Programme Outcomes)

Sl .No.	**Programme Outcomes**
PO1	**Outcomes**
PO2.	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO3	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO4	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate

	consideration for public health and safety, cultural, societal, and environmental considerations
PO5	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO6	Create, select and apply appropriate techniques, resources, and modern scientific tools, including prediction and modeling, to complex scientific activities, with an understanding of the limitations
PO7	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO8	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO9	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO10	Understand and commit to professional ethics and responsibilities and norms of scientific application
PO11	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO12	Recognize the need for, and have the ability to engage in independent and life-long learning
PO13	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields

20.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	To expose them to various fields of plant science, domain and skill subjects, lab experiments, gain practical knowledge in related fields.
PSO2	Motivate the students for higher education and the students gain confidence in expressing ideas and views about the particular program clearly
PSO3	Able to perform various procedures as per laboratory standards in the related field of plant science and able to trend themselves for employability

20.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1.	Acquiring competency on specialized microbiological laboratory skills applicable to	✓	✓		

	microbiological research or clinical methods				
2.	Carry out a range of laboratory exercises in Biomolecules & Cell biology demonstrating the development of practical scientific skills	✓	✓	✓	
3.	Understand the plant's defence mechanisms, and conventional and novel control strategies practiced in plant disease management		✓	✓	✓
4.	Understand and learn advanced cultivation practices of economic crops	✓	✓	✓	✓
5.	Knowledge on plant metabolism, physiology and structure of plants together with a better understanding of regulation of growth and development and influence of environment.		✓	✓	✓
6.	Understand fundamental knowledge in Plant Molecular Biotechnology and its application in laboratory and industry settings together with hands on training with some of the most basic, techniques in micro propagation.	✓	✓	✓	✓
7.	Develop integrative approach for visions in biological problems.	✓	✓	✓	✓

21. B.Sc. Zoology

21.1.PO (Programme Outcomes)

1 POs; Science Graduates will be able to;

POs	Outcomes

PO1	Apply mathematics, science, fundamentals and specialization on to the conceptualization of different scientific models
PO2	Identify, formulate, research literature and solve complex scientific related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern tools, including prediction and modelling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex scientific activities with the scientific community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of scientific application
PO10	Understand the impact of scientific solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

21.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Graduate will be able to develop skill which can be applied in the jobs of Forensic Science
PSO2	Graduate will be able to pursue higher studies and research
PSO3	Graduate will be able to use software and technologies that can be effectively used to solve problems encountered during investigations.

21.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Student will get information regarding	✓	✓	✓	✓

	the diversity of the animals belonging to different phylums ranging from unicellular to multicellular organization. .				
2.	Students will get the knowledge about the reproductive and development processes and can apply the acquired knowledge for higher study	✓	✓	✓	✓
3.	Students will acquire knowledge of intricate relationship of man and environment		✓	✓	✓
4.	Students will acquire knowledge about the metabolic activities and the functioning of body processes.	✓	✓	✓	✓
5.	Students recognize vertebrate structural principles by studying all body systems of vertebrates in an evolutionary perspective.	✓	✓	✓	✓

22.Bachelor of Computer Application

22. Bachelor of Computer Applications (BCA)

22.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2.	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations

PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modelling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

22.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	The program enables the students to apply knowledge of computing fundamentals, computing specialization and domain knowledge for the abstraction and conceptualization of computing models from defined problems and requirements.
PSO2	Students will be able to develop the ability to use the techniques, skills and modern hardware and software tools necessary for innovative software solutions to problems across a broad range of application domains through analysis and design.
PSO3	This program enables the students to prepare for career in the software design, development & testing also in software support, web applications in the field of commerce, management and research domain.

22.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Use Microsoft Office programs to create personal, academic and business documents following	✓	✓		

	current professional and/or industry standards.				
2.	Use Python for data visualization and data analytics.	✓	✓	✓	
3.	Understanding the architecture and the instruction set of a modern processor and the performance of a modern digital computer from parameters such as processor speed, cycles per instructions.	✓	✓	✓	
4.	Use object-oriented programming with C++ to solve various problems.	✓	✓	✓	
5.	Understanding the concept of operating system and its impact on application system design and performance	✓	✓	✓	✓
6	Understanding the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL for database applications	✓	✓	✓	✓
7	Learn the concept of protocols and topologies of computer networks and Internet and its importance in supporting business communications and everyday activities.	✓	✓	✓	✓
8	Use of integrated development environment to write, compile, run, and test object-oriented Java programs to solve real-world problems.	✓	✓	✓	✓

23. M.Sc. Physics

23.1 PO (Programme Outcomes)

POs	Outcomes
PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models

PO2	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modeling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

23.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Learn the concepts and advanced theory of Classical Mechanics, Solid State Physics, Quantum Mechanics, Relativity, Nuclear and Particle Physics, Electronics etc.
PSO2	Analyze the applications of mathematics to the problems in physics & develop suitable mathematical method for such application & for formulation of physical theories.
PSO3	Realized how developments in any science subject helps in the development of other science subjects and vice-versa and importance of interdisciplinary approach required for sustainable developments.

	Provide knowledge about material properties and its application for developing technology to ease the problems related to the society.

23.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Develop their knowledge to handle different techniques involved for characterization of materials	✓	✓	✓	
2.	Gain significant knowledge about industrial catalytic processes and catalysts at nano-levels which helps them to apply for several industrial applications and help them for higher research and employability.	✓	✓	✓	
3.	Apply the concept and acquired knowledge on perturbation theory in quantum physics	✓	✓	✓	
4.	Design small and large signal amplifier circuits for various practical applications	✓	✓	✓	
5.	Measure and analyze basic structural properties of Soft Materials like polymers, colloids surfactants and liquid crystals	✓	✓	✓	
6.	The students will be able to know the utilization of next generation super-capacitors and its applications	✓	✓	✓	

24. M.Sc. Chemistry

24.1 Program Outcome

POs	Program Outcomes

PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modelling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage the students in independent and life-long skill based learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

24.2. Program Specific Outcome (PSO)

Sl No	Program Specific Outcome
PSO1	Students will be able to demonstrate, solve and understand the major concepts in all branches of chemistry.
PSO2	Students will acquire deep knowledge in the study of physical, chemical, electrochemical and magnetic properties, structure elucidation using various techniques and applications of various organic and inorganic materials
PSO3	Students will obtain basic knowledge in the specialized areas of chemistry and will be skilled in various quantitative and qualitative analyses. Able to Solve the problem and also think methodically, independently and draw a logical conclusion.

24.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Understand, design and develop nanocomposites for specialized applications	✓	✓	✓	
2.	Code and execute concepts of Molecular Dynamics, Monte Carlo Methods in Molecular Dynamics and derive thermodynamic properties of materials ensuing from Classical Statistical Mechanics	✓	✓		
3.	Develop proficiency in application of current aspects of industrial chemistry and Able to use chemical techniques relevant to academia and industry, generic skills and global competencies including knowledge and skills that enable the students to undertake further studies in the field of industrial chemistry	✓	✓	✓	✓
4.	Understand the formulation for manufacturing, properties and applications of variety of thermoset plastic materials and its applications	✓	✓	✓	✓
5.	Understand of scheme, legal requirements and appropriate mitigation and treatment technologies for industrial pollution control	✓	✓	✓	✓
6.	Retrieve and critically evaluate toxicological information from different sources (internet based databases, hand books, scientific articles) and independently identify the toxins present in the environment and evaluate the environmental risk assessment	✓	✓	✓	✓
7.	Understand and explain the stereochemical aspects of organic compounds and stereoselective reactions	✓	✓		
8.	Describe the process of battery production: lab-scale and industrial battery assembly (electrode, cell, module); battery management systems	✓	✓	✓	✓

9.	Understand importance of recycling of the biomass and its application in circular economy	✓	✓	✓	✓
10.	Describe methods for industrial production, estimation and utilization of some therapeutically important phytoconstituents	✓	✓	✓	✓

25. M.Sc. Mathematics

25.1 PO (Programme Outcomes)

POs	Outcomes
PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modelling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning

PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

25.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	Ability to apply appropriate methods of research, investigation and design, to solve problems in Mathematics.
PSO2	An understanding of professional, ethical, legal, security and social issues and responsibilities.
PSO3	An ability to analyze the local and global impact of Mathematics on individuals, organizations, and society.

25.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Relevant methodologies and tools for modeling and data analysis/processing approaches for decision-making.	✓	✓		
2.	Determine the analysis on Lie Group, Lie Algebra, Symplectic Geometry, Poisson Geometry, Global Analysis, Several Complex Variable, Hyperbolic Geometry, Projective and Algebraic Geometry	✓	✓		
3.	To develop qualitative tools to characterize them (e.g., connectedness, compactness, second countable, Hausdorff...), and develop tools to identify when two are equivalent (homeomorphic).	✓	✓		

4.	To develop understanding about hydrostatic law, principle of buoyancy and stability of a floating body and application of mass, momentum and energy equation in fluid flow.	✓	✓		
5.	To learn important tool in Space Dynamics and mathematical modeling dealing with missile technology.	✓	✓		

26. M.Sc. Botany

26.1 PO (Programme Outcomes)

POs	**Outcomes**
PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modelling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions

PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

26.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	To descript them to various skill and domain subjects, lab experiments, gain practical knowledge in advance cell biology, genetics, molecular biology, Plant breeding, taxonomy, physiology, ecology and Biotechnology and able to trend themselves for employability.
PSO2	To stimulate the students for higher education and the students gain confidence in expressing ideas and views about the particular program clearly.
PSO3	Able to perform various procedures as per laboratory standards in the areas of Diversity, Taxonomy, Metabolism, Phytopharma, Physiology, Ecology, Cell biology, Genetics, tools and techniques of botany, toxicology, agri-biotechnology, Biochemistry, Plant biotechnology and research methodology.

26.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1.	Gain knowledge of the pathogenesis of diseases, acquire the knowledge of beneficial microorganisms in food, medicine and agriculture; instruments used in microbiological laboratory		✓	✓	✓

2.	Acquire knowledge to construct a conservation plan for particular species and to know about human impacts on biological diversity; identify factors that have influenced species extinctions.	✓	✓	✓	✓
3.	Gain knowledge on molecular biology, biotechnology and genetic engineering application	✓	✓	✓	✓
4.	Acquire knowledge on an interdisciplinary approach to the use, management, and protection of land and water resources.		✓	✓	✓
5.	Acquire knowledge to increase the production of plants by tissue culture methods that normally propagate very slowly; Conserve the RET category plants.	✓	✓	✓	✓
6.	Learn about plant diseases, plants ability for self-defense and control measures to increase the crop yields.		✓	✓	✓

27. M.Sc., Zoology

27.1. PO (Programme Outcomes)

Pos	Outcomes

PO1	Apply mathematics, science, fundamentals and specialization to the conceptualization of different scientific models
PO2	Identify, formulate, research literature and solve complex science related problems reaching substantiated conclusions using first principles of mathematics and applied sciences
PO3	Design solutions for complex scientific problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PO5	Create, select and apply appropriate techniques, resources, and modern engineering tools, including prediction and modelling, to complex scientific activities, with an understanding of the limitations
PO6	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings
PO7	Communicate effectively on complex science activities with the science community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO8	Demonstrate understanding of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to scientific application
PO9	Understand and commit to professional ethics and responsibilities and norms of engineering practice
PO10	Understand the impact of science solutions in a societal context and demonstrate knowledge of and need for sustainable development
PO11	Recognize the need for, and have the ability to engage in independent and life-long learning
PO12	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

27.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Post-graduate will be able to develop skill and knowledge which can be applied in the jobs of Bio Sciences
PSO2	Post-graduate will be able to pursue higher studies and research
PSO3	Post-graduate will be able to use software and technologies that can be effectively used to solve problems encountered during investigations.

27.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**

1.	Basic knowledge on Aquaculture will promote the students for research activities and encourage them for higher studies	✓	✓	✓	✓
2.	Students will utilize the knowledge of animal production technologies for sustainable agriculture and food security	-	✓	✓	✓
3.	Students get an insight into the culture of different commercially important aquaculture species in coastal/marine waters.	✓	✓	✓	✓
4.	Students will know the principle and application of various immune techniques and they can Will be able to make a strategy for immunological research and execute it.	✓	✓	✓	✓
5.	Students will know the principle and application of various instruments and they will be able to make strategy molecular techniques for the improvement in any trait or its well being based on the techniques learned during this course.	✓	✓	✓	✓

28. Bachelor of Fisheries Science (B. F. Sc)

28.1 PO (Programme Outcomes)

Sl. No.	Programme Outcomes
PO1	**Aquaculture**: Students will develop a better understanding of the history of aquaculture and different aquaculture production system which is suitable for enhanced fish production. Further the students will be able to carry out breeding and seed production technology for commercially important fin fish and shell fish. Additionally educate about fish nutrition and fish biochemistry; fisheries genetic tools and fish biotechnology
PO2	**Fisheries Resource Management:** Studies the basic biology and anatomy of the fishes including differentiating genera/ species up to stock level using classical and molecular techniques. Understanding the application of various models to estimate fish population in order to find out the interaction of tropical fish population in the ecosystem. Futhermore it inculcate the understanding of marine and inland fisheries resources and its protection to the students
PO3	**Aquatic Animal Health Management:** Studies includes identification of fish and shell fish disease and their remedies. It also emphasizes the use of better management practices for the preventing farmer losses due to diseases. Involves studying of various pathogens affecting aquaculture industry

PO4	**Aquatic Environment Management:** Demonstrates the knowledge and understanding of environmental parameters on the global fish population and aquaculture. Additionally students develop understanding effects of aquatic pollution on life of the fish. The students learn about the optimal water quality requirement and its amelioration for maximizing the fish production through aquaculture.
PO5	**Fish Processing Technology**: The objective of the course is to educate the students about harvesting and post harvesting techniques used in fisheries and aquaculture. It particularly deals with educating the students about usage of different equipment and various standards and regulation implemented in fish processing industry. It also deals with the quality assurance of fish and shell fish products. The students are also have hand on training for preparation of value added fish/Shell fish products
PO6	**Fisheries Engineering**: Educates the students about the engineering aspect of pond preparation. Have a better understanding of different fishing craft and gears used for fishing in inland and marine areas. Further students are exposed to navigation and seamanship for better understanding of sailing in marine areas.
PO7	**Fisheries Extension** uses democratic methods in educating the farmers. Extension Helps in adoption of innovations. It helps in studying and solving the rural problems. Extension increases farm yields and improve the standard of living of farmers. Extension makes good communities better and progressive. Extension contributes to national development programmes
PO8	**Fisheries Economics and Statistics**: Have a solid understanding of how markets operate and the effects of extensive government policies on those markets; 2. Obtain basic skills in mathematical and analytical reasoning and statistical techniques; 3. Be able to read and comprehend general articles in business and economics journals; 4. Understand firm and farm level decision rules for the efficient operation of enterprises and the institutional structure and use of marketing systems; 5. Be able to analyze changes in market and general economic conditions in a broad array of settings and be able to determine the impact on various groups affected by those changes; 6. Have knowledge in supporting areas such as accounting in order to better develop technical knowledge specific to aquaculture, fisheries and processing business; 7. Be able to present ideas effectively in oral and written forms to those in the fisheries field

28.2 PSO (Program Specific Outcomes)

Sl. No.	**Programme Specific Outcomes**
PSO1	To know the basis of technologies of aquaculture, to understand the principles of its importance, purpose and application.
PSO2	To develop modern equipment in laboratories, special computer programs for design of fisheries and aquaculture farms by implementation of innovative ideas for management of farms.
PSO3	To develop understanding of fisheries and aquaculture technological processes, identify problems and solve them, relate agriculture activity and aquaculture productivity and safety, analyze and evaluate effects of the fisheries and aquaculture on the environment, to provide the preventive safety measures.
PSO4	To know the conditions of development of aquatic organisms and its habitat conditions, formation and change patterns of yielding in relate with the environmental changes of anthropogenic influence
PSO5	To know the fisheries and aquaculture schemes used in breeding, rearing and feeding technologies in farms, their purpose and principles of application, be aware of the fisheries and aquaculture design and construction principles, taking into account the legislation and directives.
PSO6	Describe the fisheries and aquaculture business management features, methods, and strategies for aquaculture business development, operational funding, fisheries and aquaculture production innovation and marketing issues and strategies.

PSO7	To develop understanding of fisheries and aquaculture technological processes, identify problems and solve them, relate agriculture activity and aquaculture productivity and safety, analyze and evaluate effects of the fisheries and aquaculture on the environment, to provide the preventive safety measures.
PSO8	Apply traditional research methods, scientific literature, information technologies and statistical methods of calculation to perform and summarize the research and creative use results of analysis by preparation of the final thesis and oral presentations
PSO9	Apply methods and techniques used in fisheries and aquaculture design and construction, their management methods and quality assurance principles.
PSO10	Solve the technological challenges related to management of fisheries and aquaculture farms; organize activities to ensure their entrepreneurship and competitiveness
PSO11	To critically and logically contemplate, to have a reasoned opinion and be able to defend it, to gather and present scientific information to different audience

28.3 Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Understand the history of aquaculture and different production systems employed for better production.		✓	✓	✓
2.	Identify commercially important finfish and shellfish which are available in Indian coastline.		✓	✓	✓
3.	Provide understanding of basic meteorology, interpret general characteristics of weather maps and acquire modern methods of weather forecasting and the limitations of computer models.		✓	✓	✓
4.	Understand the fundamental biochemistry principles, including topics specific to chemistry and biochemistry.	✓	✓		
5.	Understand the structure and function of bacterial cells and viruses. Apprehend the processes used by microorganisms for their replication, survival, and interaction with their environment, hosts, and host populations.	✓	✓		

6.	Insight into the important water and soil quality management and their amalgamation for successful aquaculture operation.		✓	✓	✓
7.	Knowledge on Nutritional composition of fish and its health benefits to human being. Fish as an alternate source of protein that form part of a balance diet.	✓	✓	✓	✓
8.	Exposure to various production systems in aquaculture along with species diversification		✓	✓	✓
9.	Hand on experience about different organs present in fish body along with the importance of these organ for their living processes in fishes		✓	✓	✓
10.	Understand the biodiversity of the coastal areas and device different managerial methods to manage it.		✓	✓	✓
11.	Knowledge about different types of inland and marine resources and methods to manage utilized water bodies.		✓	✓	✓
12.	Understand the Nutritional compositions of fish as compared to other food ingredients for diet. Different food additives, sources and limits for incorporation into food.	✓	✓	✓	✓
13.	Knowledge about different culture practices in reservoir about the productivity of different size of reservoir.		✓	✓	✓
14.	Exposure to the living processes in fishes and factors affecting these processes.		✓	✓	✓
15.	Knowledge about the importance of aquatic ecology and biodiversity.			✓	✓
16.	Knowledge about the chemical and biological processes occurring in the ocean and also be able to operate different instruments for analyzing different water quality parameters.		✓	✓	✓
17.	Learn fabrication of aquarium and mass culture of different		✓	✓	✓

	live food organisms and aquatic plants.				
18.	Understand preventive measures to reduce or slow down rate of spoilage in post-harvest. Maximum keeping quality and types of freezing method to adopt with respect to each fish species and shellfish.			✓	✓
19.	Learn to effectively select a good quality brood stock for maintaining a low inbreeding depression. They will also get an insight into modern genetical tools like transgenetics, RNAi, Cryopreseservation of gametes etc.		✓	✓	✓
20.	Understand Cell types and organs present in the immune response. Apply basic techniques for identifying antigen antibody interactions. Able to describe immunological response and how it is triggered and regulated.			✓	✓
21.	Learn to effectively manage a fisheries business firm.		✓	✓	✓
22.	Insight into the culture of different commercially important aquaculture species in coastal/marine waters.		✓	✓	✓
23.	Understand the application of basic pharmacological knowledge in the prevention and treatment of various fish diseases.			✓	✓
24.	Knowledge on feed preparation using different feed formulations.	✓	✓	✓	✓
25.	Understand steps/procedure for canning of fish and shellfish in different style. Pre-requisite procedure, importance of quality of raw materials.	✓	✓	✓	
26.	Understand different types of pathogen and their treatments.			✓	✓
27.	Understand different types of fishing craft operated along Indian subcontinent.		✓	✓	✓
28.	Transfer the modern and scientific findings of lab to the		✓	✓	✓

	farmers land thereby increasing the farmer's profitability.				
29.	Learn breeding of commercially important shellfish and setup of own hatchery. Breeding and hatchery management of important finfish and shellfish.		✓	✓	✓
30.	Understand the pharmacological actions of different categories of drugs and the application of basic pharmacological knowledge in the prevention and treatment of various fish diseases.		✓	✓	✓
31.	Understand the processes involved in absorption, distribution, metabolism and excretion of toxicants, including an understanding of the toxicokinetic behavior of toxicants in fish.		✓	✓	✓
32.	Understand different fishing gears used for catching of fishes both in inland and marine waters.		✓	✓	✓
33.	Asses the fish/ shellfish population in a given water bodies.		✓	✓	✓
34.	Knowledge about the importance of coastal areas and can plan an effective strategies to conserve it in case of any disaster.		✓	✓	✓
35.	Knowledge on different types of microbial and parasitic diseases in fish/shell fishes and their remedies.		✓	✓	✓
36.	Knowledge on National and International standards associated with fishery products. Biological, physical, chemical, sensory assessment of fish and fishery products.	✓	✓		
37.	Understand the application of marine engines for fishing operation.		✓	✓	
38.	Knowledge on technology of utilization of low valued fish for production of different value added fishery product. Indigenous and traditionally produce fish products from local and other countries and its		✓	✓	✓

	method of processing. Packaging materials for different value added fish product to maintain maximum hygiene and shelf-life.				
39.	Understand different physical, biological and chemical hazards associated with fish and fishery products. Their preventive measures and elimination. Different enumeration techniques of different hazards. Hygiene and sanitation required during different handling and processing methods.		✓	✓	✓
40.	Understand the operation of Fishing Trawlers and lifesaving equipment.		✓	✓	
41.	Understand different methods for preparation of fish by-products those are beneficial to human, Cattle, poultry. Its wide-area of application, in the field of nutrition, medicine, cosmetics, fashions, beverages, etc.			✓	✓
42.	Able to design ideal aquaculture production systems.		✓	✓	✓
43.	Domains: Organic farming, Dairy processing and development, Intensive aquaculture, Seed production using manual and molecular methods, Genetic engineering and genomics, Nutraceuticals Smartagriculture, Protected horticulture, Food processing, Agribusiness management, Commodity and material and storage, Fish Processing Technology.	✓	✓	✓	✓
44.	RFWE (Rural Fisheries Work Experience), FELP (Fisheries Experiential Learning Program)			✓	✓

29.0 B.Sc. Agriculture

29.1 PO (Program outcomes)

Sl. No.	Program outcomes
PO1	**Agronomy**: Ability to think clearly and creatively and to apply critical thinking skills when evaluating information. Learning, developing, and applying skills for the application of existing and emerging knowledge and technologies in Agronomy. Competent application of scientific principles, quantitative skills, and other problem-solving skills in Agronomy. Knowledge and application of ethical practices and recognize the relationships between science and society within a diverse society
PO2	**Plant Breeding** technicians provide technical support and services to botanists and other professionals working in agricultural and plant biology. The research methods and ways of improving plant breeding. They produce new or improved plant and crop varieties better suited to environmental conditions and commercial needs
PO3	**Soil Science& Agricultural Chemistry** studies the chemical, physical, biological, and mineralogical composition of soils as they relate to agriculture. Agricultural soil scientists develop methods that will improve the use of soil and increase the production of food and fiber crops. Emphasis continues to grow on the importance of soil sustainability
PO4	**Horticulture** demonstrates knowledge and understanding in: The breadth and depth of the profession of horticulture Basic horticultural science terminology Basic horticulture biology: taxonomy, anatomy, morphology, and physiology The characteristics of the environment and their influence on plant growth and development. Solve problems and think critically using new knowledge and technological developments in horticulture
PO5	**Plant Pathology** :The broad objective of practical class under Plant pathology department is to highlight the knowledge of plant pathogens and their interactions with plants-pests/pathogens leading to diseases .Students learn practically about the identification of major plant pathogens such as bacteria, fungi, nematodes, viruses, viroid's and other microbes that cause huge economic loss to the farmers.
PO6	Teaching by the **Entomology** department reflects the broad nature of the departmental mission, ranging from basic aspects of arthropod ecology, morphology, parasitology, physiology, systematic and toxicology to applied subjects in apiculture, agricultural, medical and veterinary pest management.
PO7	**Agricultural Extension** uses democratic methods in educating the farmers. Extension Helps in adoption of innovations. Extension helps in studying and solving the rural problems. Extension increases farm yields and improve the standard of living of farmers Extension makes good communities better and progressive. Extension contributes to national development programmes

PO8	**Agricultural Economics & Agricultural statistics**: Have a solid understanding of how markets operate and the effects of extensive government policies on those markets; 2. Obtain basic skills in mathematical and analytical reasoning and statistical techniques; 3. Be able to read and comprehend general articles in business and economics journals; 4. Understand firm and farm level decision rules for the efficient operation of enterprises and the institutional structure and use of agricultural marketing systems; 5. Be able to analyze changes in market and general economic conditions in a broad array of settings and be able to determine the impact on various groups affected by those changes; 6. Have knowledge in supporting areas such as accounting, plant science, and animal science in order to better develop technical knowledge specific to agriculture and agricultural business; 7. Be able to present ideas effectively in oral and written forms to those in the agricultural and related fields.
PO9	**Crop Physiology**: Distinguish key physiological processes underlying the formation of seedlings from seed embryos; 2. Identify the physiological factors that regulate growth and developmental processes of crop plants, and clearly define their roles; 3. Evaluate the different strategies used by plants to acquire and utilize resources, and formulate a logical argument of their impact on crop productivity; 4. Recognize the significance of assimilate translocation and patterns of its partitioning in determining crop yield; 5. Demonstrate clear understanding of crop-environment interaction and its implication on crop growth and yield; 6. Relate crop physiological processes with agronomic practices used in crop production systems; and 7. Integrate and apply their knowledge of crop physiology for analytical thinking and solving practical problems experienced in agricultural systems.
PO10	**Biochemistry**: Understand the biochemistry plant defense mechanism, Identify the toxic compounds in plants, Describe the kinetics and characterization of enzymes, Identify the detoxification mechanisms. Cognitive Knowledge: To provide education that leads to comprehensive understanding of the principles and practices of biotechnology. Experimental Skills: To provide broad based training in technical skills in methods of biotechnology. Critical Thinking: To empower students with the ability to think and solve problems in the field of biotechnology. Scientific Communication: To ensure students are able to effectively communicate with biotech and other interdisciplinary professionals.
PO11	**Animal Husbandry**: Develop and evaluate animal production and management systems by integrating knowledge of animal genetics, nutrition, reproduction, and other relevant disciplines and applying scientific and quantitative reasoning to solve real-world challenges.
PO12	The mission of the B.Sc. academic program in **Agricultural Engineering** is to train men and women to integrate knowledge of physical and biological sciences through application of engineering fundamentals and design to systems involved in production, processing, storage, handling, distribution, and use of food, feed, fiber, and other biomaterials, and in management of related natural resources worldwide.

29.2 PSO-Program Specific Outcomes

Sl. No.	Program Specific Outcomes

PSO1	Impart knowledge and understanding of fundamental concepts and techniques of maintaining and enhancing soil fertility, crop production, crop management, crop improvement, biodiversity and sustainability of agriculture worldwide.
PSO2	Develop the ability to know farming practices and their scope to improve in the rural areas and the environments.
PSO3	Apply knowledge of basic science through Agricultural microbiology, Plant biochemistry and Biotechnology.
PSO4	Apply knowledge of Agri-business management and finance to develop a profitable agricultural system.

29.3 CO- Course Outcomes

Topics addressing Global, national, regional and local relevance

Sl. No.	Topic	Linked to			
		Global	National	Regional	Local
1.	Understanding of present situation, problems and prospects of Indian agriculture.		✓	✓	
2.	Develops knowledge on adaptation and mitigation options to combat adverse effect of climate change		✓	✓	✓
3.	Understand the menace caused by weeds, identify weeds, quantify damage and manage in integrated manner			✓	✓
4.	Ensure targeting of inputs and outputs by adoption of precision technologies	✓	✓	✓	
5.	Understand the importance and application of nano-technology in agriculture	✓	✓		
6.	Understand the farming system approach, their requirements and the practices to obtain production sustainability	✓	✓	✓	
7.	Students have knowledge with the classification of insects and distinguished characters of different families		✓	✓	✓
8.	Students have knowledge about various stored grain and non-insect pests along with their management.		✓	✓	✓
9.	Understanding about the early development & role of different micro-organism in the development of plant disease.		✓	✓	✓
10.	Understanding the general concepts and classification of plant diseases with relation to environmental condition		✓	✓	✓

11.	Students will have knowledge to establish a commercial production unit of bio-pesticide.		✓	✓	✓
12.	The students get acquainted with the widely exploited techniques in plant molecular biology like isolation of genomic DNA, its separation, amplification as well the mapping of agronomically important traits using markers through marker assisted selection.	✓	✓		
13.	The students get acquainted with the importance of plant diversity and its conservation both insitu and *ex-situ* including invitro propagation of the myriads of plant species.		✓	✓	✓
14.	Students will have knowledge with general characteristics of chromosomes, genetic disorder and chromosomal aberrations.	✓	✓		
15.	In practical point of view students come to know the different procedures and techniques of emasculation and hybridization in some of the self & cross pollinated crops.		✓	✓	
16.	Students also acquired the concepts related to different stress (biotic and abiotic) faced by crops and their breeding methods, pre-breeding aspects through wider hybridization and also basic concepts on markers and their importance and application in crop improvement		✓	✓	✓
17.	Knowing the importance of seed production for commercialization and have a distinct idea as to how the complete seed production chain is working in India		✓	✓	

18.	Know the proper seed storage, seed certification and seed marketing ways which may further be helpful in setting up seed production units as an entrepreneurship development.	✓	✓	✓	
19.	The students are able to know about the plant genetic resources, and different breeding methods adopted for the development of varieties and hybrids.	✓	✓		
20.	Knowledge about the use of various fertilizers, plant growth regulators and irrigation management		✓	✓	✓
21.	Knowledge of different aspects related to production of Horticultural crops.		✓	✓	✓
22.	Knowledge about harvesting, field handling of produce, processing and storage.		✓	✓	
23.	Understand and synthesize the magnitude and structure of the agricultural sector.	✓	✓	✓	
24.	Analyze problems in the key areas using appropriate tools and take managerial decisions in context of microeconomic and macroeconomic developments.		✓	✓	
25.	Understand about role of different financial institutions and their working procedures, feasibility test of credit, cooperatives and their working procedures, existing and ongoing schemes related to agricultural insurance	✓	✓	✓	
26.	Assist farm managers in determining the best use of resources, given the changing needs, values and goals of the society.		✓	✓	✓

27.	Evaluate the effects of technical and institutional changes on agricultural production and resource use and to utilize economic principles and models to address private and public policy issues related to allocating natural resources and environmental amenities	✓	✓	✓	
28.	Students are exposed towards various rural development program aimed at poverty alleviation and to increase employment opportunities and their analysis		✓	✓	✓
29.	Students have knowledge about mobile based developmental initiatives of government as well as non-government sectors		✓	✓	✓

30.0 M.Sc. Agriculture (Genetics and Plant Breeding)

30.1 PO (Program outcomes)

PO1	The students gain knowledge in **genetics and plant breeding**, structure and chromosome, polyploidy and cytogenetic aspects of crop evolution, computation skills on components of variation and variances, scales, mating designs and gene effects.
PO2	The students will get an understanding on mechanisms of heterosis and its exploitation for yield improvement through conventional and biotechnological approaches.

30.2 PSO-Program Specific Outcomes

Sl. No.	**Program Specific Outcomes**
PSO1	The M.Sc. (Ag) **Genetics and Plant Breeding** program is designed in a way to equip the students with theoretical knowledge, research capability, analytical and quantitative problem solving skills from classical to molecular genetics and improving crops for yield, quality and stress which in turn allow the students to pursue higher studies and starts their career in teaching, research and R&D industries.

30.3 CO- Course Outcomes

<u>Topics addressing Global, national, regional and local relevance</u>

Sl. No.	Topic	Linked to			
		Global	National	Regional	Local
1.	The student are able to understand the basic concepts of molecular aspects (viz., DNA and chromosome concepts, gene structure, synthesis, regulation gene silencing, gene/DNA mutations, transposable elements and molecular aspects of gene DNA cloning, genomic and cDNA libraries, immunochemical detection and different aspects of OMICS, etc.,)(**Genetics and Plant Breeding**)	✓	✓		
2.	Students also acquire the concepts related to different Polyploidy, meiotic behavior and uses of primary trisomics and BTT hybrid seed production and transfer of individual whole chromosome(alien addition lines & alien substitution lines), cell cycle, Crossing over-mechanisms, etc. and Wider hybridization	✓	✓	✓	
3.	In practical point of view students come to know about floral biology, selfing and crossing techniques of different crops, Hybrids seed production in different crops		✓	✓	✓
4.	Students comes to know solving problems related to quantitative results, ANOVA, biplot analysis, genetic diversity analysis, association analysis, path analysis, discriminant function and principal component analysis heritability and genetic advance, concepts of selection etc.,)		✓	✓	
5.	Use of self-incompatibility in development of hybrids; Hybrid seed production system: 3-line, 2-line and 1-line system; Development of inbreds and parental lines- A, B and R lines –functional male sterility; Commercial exploitation of heterosis.	✓	✓	✓	

31.0 M.Sc. Agronomy

31.1 PO (Program outcomes)

Sl. No.	Program outcomes
PO1	On completion of this course, the students are able to understand advanced technologies of agronomy and get idea about recent trends in **Agronomy**.
PO2	The students understand maintenance of soil fertility and have practical knowledge on efficient nutrient management for sustainable crop production.
PO3	The students are able conduct research, analyze and interpret the research findings.

31.2 PSO-Program Specific Outcomes

Sl. No.	Program Specific Outcomes
PSO1	The M.Sc. (Ag) **Agronomy** program is designed in a way to equip the students with theoretical knowledge, research capability and management skills crop production including nutrient, weed, water management, cropping and farm system and precession farming which in turn allow the students to pursue higher studies and starts their career in teaching, research and R&D industries.

31.3 CO- Course Outcomes

Topics addressing Global, national, regional and local relevance

Sl. No.	Topic	Linked to			
		Global	National	Regional	Local
1.	Students learn about recent trends in agronomy like organic farming and precision agriculture. (**Agronomy**)	✓	✓	✓	
2.	Get expertise in efficient water management to ensure maximum water productivity		✓	✓	✓
3.	Get knowledge on integrated nutrient management for sustainable crop production		✓	✓	✓
4.	Learn about the yield prediction by using different models and matching the same with real-time crop productivity		✓	✓	
5.	Understand crop cycle and environmental requirements, agronomic management and economics of crop production.		✓	✓	✓

32.0 M.Sc. Agriculture (Horticulture and Vegetable Science)

32.1 PO (Program outcomes)

PO1	The students understand morphology, cytology, molecular taxonomy, physiology, growth and development of **vegetable crops**.
PO2	Students gain knowledge in principles and practices adopted for breeding of vegetable crops and practical experience in breeding of vegetables.

32.2 PSO-Program Specific Outcomes

Sl. No.	Program Specific Outcomes
PSO1	The PG program is focused to provide greater knowledge with respect to **Vegetable crops**. It educates the scholars with production technology of different seasonal vegetable crops. It also helps by providing the knowledge of growth and development of vegetable crops along with the possible breeding opportunities. It also provides a wider field of knowledge by educating the scholars with the study of under exploited vegetable crops and post-harvest management technology.

32.3 CO- Course Outcomes

Topics addressing Global, national, regional and local relevance

Sl. No.	Topic	Linked to			
		Global	National	Regional	Local
1.	Develops knowledge on Plant growth regulators in relation to vegetable production; morphogenesis and tissue culture techniques in vegetable crops. (**Horticulture**)	✓	✓	✓	
2.	Develops knowledge on botany, taxonomy, cytogenetic, genetics, breeding objectives, breeding methods, biotechnology and their use in breeding in vegetable crops-Issue of patenting, PPVFR act	✓	✓		
3.	Develops knowledge about harvesting, field handling of produce, processing and storage.		✓	✓	✓
4.	Develops knowledge on Genetic and agronomic principles & methods of seed production		✓	✓	✓

33.0 M.Sc. Agriculture (Agriculture Extension)

33.1 PO (Program outcomes)

PO1	To orient the students towards how to do effective planning and implementation of communication programs through the knowledge of **Extension education**
PO2	To orient the students towards getting skills to trace information from libraries efficiently, to apprise them of information and knowledge resources.
PO3	To orient the students towards learning Statistical Package for Social Sciences (SPSS) for choosing appropriate statistics for data analysis.

33.2 PSO-Program Specific Outcomes

Sl. No.	Program Specific Outcomes
PSO1	The PG program is focused to provide knowledge on **Agricultural Extension**, communication, various participatory methods, and educates the scholars about fundamental aspects of doing the research, developing knowledge and skills. Provide knowledge about use of ICT in field of extension, idea about market led extension, agricultural marketing. It broadens the knowledge of the scholars by emphasizing on human resources, entrepreneurship development and research ethics.

33.3 CO- Course Outcomes

Topics addressing Global, national, regional and local relevance

Sl. No.	Topic	Linked to			
		Global	National	Regional	Local
1.	Students gains knowledge about various institutions, their organizational structure and functions.(**Agriculture Extension**)	✓	✓	✓	
2.	To orient the students towards agricultural innovations spread among the farmers in the society by getting into the insights of diffusion concept and adoption process.		✓	✓	✓
3.	Students know about information sources and develop strategy for market intelligence and the marketing infrastructure, multilevel marketing and linkages for market led extension	✓	✓	✓	
4.	Students know the use of IPR as a tool for wealth and value creation in a knowledge-based economy.	✓	✓	✓	
5.	Develops knowledge on the basic principles of field experimentation, field layout and setting of experiment		✓	✓	✓
6.	To analyze the data obtained from the field experiment and interpretation of results		✓	✓	✓

34.B. Sc. Optometry

34.1PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

34.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	To employ quality eye and vision care through comprehensive and appropriate examination, measurement, assessment, diagnosis, treatment and management of eye and vision conditions.
PSO2	To understand the pathogenesis of disease and the implications for ocular health and function and be knowledgeable in ocular and laboratory testing used in the assessment of systemic, visual and ocular function.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

34.3Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Diabetic Neuropathy				✓
2.	Colour Blindness in School Children		✓		
3.	Vitamin Deficiency Related Vision Problems				✓
4.	NABH accreditation for Vision Centre		✓		
5.	Mission VISION 2020	✓	✓	✓	✓
6.	National Blindness Programme		✓	✓	✓
7.	Effects of Blue light	✓	✓	✓	✓
8.	Refractive error in Industrial People				✓
9.	Refraction skill development for college students				
10.	Myopia in Geriatric Population			✓	
11.	Vision camp in rural community				✓
12.	Malnourishment and Blindness				✓

35. B. Sc. Medical Radiation Technology

PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

35.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	To understand how to prepare patients for radiology studies, dealing with allergies, contrast reactions, MRI safety, radiation exposure and safety issues in Radiology Clinical practice and to understand the Clinical and Technical aspects of Radiology.
PSO2	To have basic understanding of special imaging studies such as CT, Ultrasound, MRI, Fluoroscopy, Nuclear Medicine, interventional radiology and to be able to interpret major findings on Chest X-Ray.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1	Radiation Hazards			✓	✓

2	Radiation Protection			✓	✓
3	Contrast Media Preparation			✓	✓
4	Dental X Ray	✓	✓	✓	✓
5	Patient Preparation for MRI			✓	✓
6	Ultrasonic observation in case of GIT		✓	✓	✓
7	Installation of Radio Imaging Center			✓	✓
8	Patient Preparation for USG			✓	✓
9	Radiological Finding in COPD		✓	✓	✓
10	Radiological findings in Rheumatoid Arthritis		✓	✓	✓
11	Patient Preparation for CT		✓	✓	✓
12	Radiological Finding in Fractures			✓	✓
13	Ultrasonic observation in case of endometriosis		✓	✓	✓
14	Radiological Finding in case of Tuberculosis	✓	✓	✓	✓
15	Mammography		✓	✓	✓
16	Patient Preparation for X ray		✓	✓	✓
17	Setting up DARK ROOM		✓	✓	✓

36.B. Sc. Medical Laboratory Technology

36.1 PO (Programme Outcomes)

Sl .No.	**Programme Outcomes**
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility

PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

36.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	To provide quality, accurate and timely laboratory results in a cost-effective manner. Comply with all legal, regulatory, and ethical requirements associated with the practice and employability in medical laboratory science
PSO2	To establish a diagnostic laboratory and validate laboratory results with accuracy and precision, to improve the skill and provide accurate and meaningful results that reflect current standards in healthcare.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

36.3 Topics addressing Global, National, Regional and Local relevance

Sl. No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1.	Cardiac Disorders and lipid profile			✓	✓
2.	Nosocominal infection disorders			✓	✓
3.	Infection Control Policy			✓	✓
4.	Micro bacterium Tuberculosis and DOT center		✓	✓	✓
5.	General Consideration on Specimen Collection		✓	✓	✓
6.	Allergy and Peripheral Smear Study			✓	✓

7.	Chain Laboratory System			✓	✓
8.	Common disorders related to Blood Transfusion		✓	✓	✓
9.	Quality management in diagnostic division		✓	✓	✓
10.	First Aid in Clinical Laboratory	✓		✓	✓
11.	AMC for Diagnostic Division	✓		✓	✓
12.	Peripheral smear study in case of Oncology	✓		✓	✓

37. B. Sc. Clinical Microbiology

37.1 PO (Programme Outcomes)

Sl .No.	**Programme Outcomes**
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

37.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	To employ treatment strategies including specimen handling, processing and the appropriate use of antimicrobial agents and common mechanisms of antimicrobial action and resistance.
PSO2	To monitor the Quality Control and Quality Assurance in Microbiology and Pathology Labs. To establish labs and to evaluate methods used in identifying infectious agents in the clinical microbiology lab.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

37.3 Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Sterilization of Equipment for the diagnostic division	✓	✓	✓	✓
2.	Infection Control Policy	✓	✓	✓	
3.	Communicable Diseases and its laboratory investigation	✓	✓	✓	
4.	Bio- Medical Waste Management	✓	✓	✓	
5.	National Accreditation of Board of Laboratory		✓	✓	
6.	Malaria eradication Programme		✓	✓	
7.	Nutritional Deficiency Disorders		✓	✓	✓
8.	Leprosy Eradication Programme	✓	✓	✓	
9.	*Mycobacterium tuberculosis* and DOT center		✓	✓	✓
10.	Quality control in diagnostic division		✓	✓	✓
11.	Nosocominal infection disorders	✓	✓	✓	✓
12.	Organization of Blood donation camp		✓	✓	✓
13.	Malaria in Rural			✓	✓

38.B. Sc. Emergency Medicine Technology

38.1PO (Programme Outcomes)

Sl .No.	Programme Outcomes

PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

38.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Establish case-specific differential diagnoses for each patient you encounter. Demonstrate knowledge of the indications, contraindications, necessary equipment, and technique for a variety of commonly performed procedures.
PSO2	Demonstrate the capacity to interact with patients, families, and coworkers in a timely, professional, and effective manner. Communicate respectfully and culturally appropriate with patients and their families.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

38.3Topics addressing Global, National, Regional and Local relevance

Sl. No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1	First Aid in Emergency	✓	✓	✓	✓

2	Bed sore management	✓	✓	✓	✓
3	Diet Chart for Post operative patient	✓	✓	✓	✓
4	ICU setup		✓	✓	✓
5	ORAL care			✓	✓
6	BMW Management		✓	✓	✓
7	CSSD SOP			✓	✓
8	Pharmacy service in Emergency Department	✓	✓	✓	✓
9	OT setup for surgery	✓	✓	✓	✓
10	CPR in case of accident	✓	✓	✓	✓
11	Emergency service in COVID 19	✓	✓	✓	✓
12	108 Ambulance Service	✓	✓	✓	✓
13	First Aid in case of snake bite	✓	✓	✓	✓
14	EMT Department OPD management	✓	✓	✓	✓
15	Mobilization of patient within the hospital.	✓	✓	✓	✓
16	Universal precautions for BMW	✓	✓	✓	✓
17	Oral care of an Unconscious patient	✓	✓	✓	✓
18	Role in Drug Administration	✓	✓	✓	✓
19	Measuring vital signs	✓	✓	✓	✓

20	Anger Management	✓	✓	✓	✓

39.B. Sc. Operation Theatre Technology

39.1 PO (Programme Outcomes)

Sl .No.	**Programme Outcomes**
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

39.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Prepare the operating room, load and label required medications, and gather and assemble surgical equipment for common surgical procedures based on their complexity and duration. Recognize patients' anxiousness during the peri-operative period and provide necessary assistance in shifting, inducing anesthesia, and positioning them for surgical procedures.
PSO2	Help in the implementation, setup, commissioning, maintenance, and management of operation theatres, emergency departments, intensive

	care units, cardiac catheterization labs, and emergency response services.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

39.3Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1	Diet Chart for Post operative patient	✓	✓	✓	✓
2	BMW Management		✓	✓	✓
3	Pharmacy service in Emergency Department	✓	✓	✓	✓
4	OT setup for surgery	✓	✓	✓	✓
5	Pre-Operative precaution	✓	✓	✓	✓
6	Cleaning and Sterilization for OT room	✓	✓	✓	✓
7	Pathological investigation for pre-OT	✓	✓	✓	✓
8	Autoclaving of Surgical equipment	✓	✓	✓	✓
9	ICU setup	✓	✓	✓	✓
10	Bed sore management	✓	✓	✓	✓

40.B. Sc. Anesthesia Technology

40.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.

PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

40.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Aid the anesthesia practitioner with patients of all types, ages, and physical states for a variety of surgical and medical procedures while incorporating technical and critical thinking and clinical reasoning. As an anesthetic technologist, demonstrate current and emerging standards of care.
PSO2	Providing culturally competent care, paying attention to the unique demands of distinct multicultural and complicated client populations. Participate in initiatives that strengthen the role of anesthesia technologists and positively affect health-care policy decisions. Personal and professional demonstration of honesty and integrity.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

40.3Topics addressing Global, National, Regional and Local relevance

Sl. No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1	Medical Record documentation	✓	✓	✓	✓
2	Branches of Medicine	✓	✓	✓	✓
3	Sterilization of surgical items	✓	✓	✓	✓

4	Geriatric Patient Care	✓	✓	✓	✓
5	Patient Hygiene Management	✓	✓	✓	✓
6	Pathological investigation pre–OT Condition	✓	✓	✓	✓
7	Anesthesia Drug preparation	✓	✓	✓	✓
8	Post operative care	✓	✓	✓	✓
9	ICU setup	✓	✓	✓	✓
10	ORAL care	✓	✓	✓	✓
11	ICU Management	✓	✓	✓	✓
12	Anesthesia Drug preparation	✓	✓	✓	✓
13	Pre-Operative precaution	✓	✓	✓	✓
14	Geriatric Care	✓	✓	✓	✓
15	Thyroid and Anesthesia	✓	✓	✓	✓
16	Autoclaving of Surgical equipment	✓	✓	✓	✓
17	Cleaning and Sterilization for OT room	✓	✓	✓	✓
18	Pathological investigation for pre-OT	✓	✓	✓	✓
19	First Aid in Emergency	✓	✓	✓	✓
20	BMW Management	✓	✓	✓	✓

41.Bachelor of Physiotherapy

41.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning

41.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	The objective of this course is to outline the cognitive, emotional, and psychomotor abilities that are necessary for examining, diagnosing, planning, and documenting physiotherapy treatment. It is expected to enhance the ability to assess patients for impairments and functional limitations and then perform routine physiotherapeutic procedures based on the findings.
PSO2	To operate and maintain physiotherapy equipment used in patient treatment, as well as to design and carry out physiotherapy treatment (both electrotherapy and exercise therapy) and procedures. To educate patients about different physiotherapeutic techniques.
PSO3	Graduates will be able to qualify various entrance exam/competitive examinations.

41.3Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Case study- Displaced Child	✓	✓	✓	✓
2.	Case study - Displaced Older Persons	✓	✓	✓	✓
3.	Clubfoot content development Project	✓	✓	✓	✓
4.	Current and Emerging Roles in Physiotherapy Practice	✓	✓	✓	✓
5.	Complications with Peripheral Nerve Injury	✓	✓	✓	✓
6.	Challenges in Delivering Rehabilitation in Disasters and Conflicts	✓	✓	✓	✓
7.	Case Study - Lower Limb Peripheral	✓	✓	✓	✓
8.	Case Study - Fractures in Disasters and Conflict	✓	✓	✓	✓
9.	Case Study - Electrical Burn in Disasters and Conflict	✓	✓	✓	✓
10.	COVID 19- Content Creation Project	✓	✓	✓	✓

42.M. Sc. Medical Laboratory Technology

42.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning
PO13	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields

42.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	The Programme enables the student to be employed in diagnosis and prevention of diseases through the use of clinical laboratory tests by helping doctors to detect, diagnose and treat diseases.
PSO2	Students will be able to analyze body fluids, tissues, and perform blood typing, microorganism screening, chemical analyses, cell counts of human body etc. Allows them to determine the presence, extent or

	absence of disease and provide data needed to evaluate the effectiveness of treatment.
PSO3	Post graduates will be able to qualify various entrance exam/competitive examinations.

42.3 Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1.	Clinical establishment act policies			✓	✓
2.	Setting up a Diagnostic Center in Rural Area			✓	✓
3.	Parasitic infection In Rural Area and their laboratory Investigation			✓	✓
4.	Bio- Medical Waste Management Policy in Hospital		✓	✓	✓
5.	Common infectious disorder and their laboratory investigation		✓	✓	✓
6.	National Health Programme		✓	✓	✓
7.	Laboratory Investigation in Endocrine Disorder			✓	✓
8.	Collection Preservation and Processing of Pathological samples			✓	✓
9.	Quality control in diagnostic division			✓	✓
10.	Jaundice in case of Sickle cell anemia			✓	✓

11.	Basic Observation of Central Sterile Service Department in Corporate Hospital			✓	✓
12.	Drug abuse related laboratory investigation			✓	✓

43. M. Sc. Applied and Clinical Microbiology

43.3 PO (Programme Outcomes)

Sl .No.	**Programme Outcomes**
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.

PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning
PO13	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields

43.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	To recognize and diagnose diseases from clinical presentation and to assess treatment strategies including specimen handling, processing and the appropriate use of antimicrobial agents and common mechanisms of antimicrobial action and resistance.
PSO2	To monitor the Quality Control and Quality Assurance in Microbiology and Pathology Labs. To evaluate methods for identifying diseases caused by common infectious agents.
PSO3	Post graduates will be able to qualify various entrance exam/competitive examinations.

43.3Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1.	DOTS strategy		✓	✓	
2.	Epidemiological Disorder Study in Local Community	✓	✓	✓	✓
3.	Hygienic study of Municipal Food Center		✓	✓	✓
4.	Bio- Medical Waste Management Policy in Hospital	✓	✓	✓	✓
5.	Clinical establishment act policies	✓	✓	✓	✓
6.	Diabetic signs and symptoms with laboratory investigation	✓	✓	✓	✓
7.	Collection Preservation and Processing of Pathological samples	✓	✓	✓	✓
8.	Water Borne Pathogens in Municipal Water		✓	✓	✓
9.	Stress Disorder	✓	✓	✓	
10.	Hepatitis B and Liver cancer	✓	✓	✓	✓
11.	Thyroid and obesity	✓	✓	✓	
12.	Hypertension and Lipid Profile		✓	✓	✓

13.	Clinical Study of Leukemia		✓	✓	✓

44. M. Sc. Optometry

44.1PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	Apply knowledge of basic science and allied health science.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation
PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex healthcare problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of allied healthcare in a global, economic, environmental, and societal context
PO9	Manage contemporary healthcare projects and their financial implications.
PO10	Use the techniques, skills, and modern healthcare instruments and tools necessary for allied health profession.
PO11	Analyze, screen and ensure quality in healthcare delivery.
PO12	Engage in life-long learning
PO13	Demonstrate a knowledge and understanding of contemporary technologies, their applications and limitations, contemporary research in the broader context of relevant fields

44.2 PSO (Programme Specific Outcomes)

Sl.No.	Programme Specific Outcomes
PSO1	To instill community optometry knowledge, sensitivity, and clinical exposure. They are the primary health-care providers for eye illnesses and refractive problems diagnosis and treatment.
PSO2	They can work in the private, semi-governmental, and governmental sectors as an Optician, Optometrist, Refractionist, and Ophthalmic Technician in rural and urban environments.
PSO3	Post graduates will be able to qualify various entrance exam/competitive examinations.

Topics addressing Global, National, Regional and Local relevance

Sl. No.	Topics	Linked to			
		Global	National	Regional	Local
1.	LASER treatment in ocular pathologies			✓	✓
2.	LASIK: Cure to millions	✓	✓	✓	✓
3.	Mission VISION 2020	✓	✓	✓	✓
4.	National Blindness Programme		✓	✓	✓
5.	Smart Contact Lens for new generation		✓	✓	✓
6.	Digital Curse on eyes during pandemic	✓	✓	✓	✓
7.	Toxoplasmosis and Vision Issues				✓
8.	School-going uncorrected refractive errors			✓	✓

45. BA-MC

45.1 PO (Programme Outcomes)

Sl .No.	Programme Outcomes
PO1	**Knowledge:** demonstrate acquired knowledge in the field of journalism and understand the role of press in a democratic set up
PO2	**Problem Solving and Decision Making:** Capable to take decisions and solve organizational issues

PO3	**Professional :** engage the professional skills in the field of advertising, public relations, corporate communication, digital communication, media management.
PO4	**Effective Communication using ICT:** effectively engage in communication using modern technologies to share thoughts and ideas
PO5	**Critical/ Reflective thinking:** able to think critically in professional life and become creative/innovative
PO6	**Leadership and Team Work:** able to lead with appropriate vision and work in a team
PO7	**Entrepreneur:** demonstrate the skills of on an entrepreneur to start a venture
PO8	**Learning and Research**: develop a sense of inquiry and investigation life long
PO9	**Ethics:** Follow high ethical standard and appreciate the value system of different cultures

45.2 PSO (Programme Specific Outcomes)

Sl.No.	**Programme Specific Outcomes**
PSO1	Graduate will be able to develop knowledge and skills which can be applied in the jobs of media houses
PSO2	Graduate will be able to pursue higher studies and carry out research in the field of mass communication
PSO3	Graduate will be able to become an entrepreneur with sound technical knowledge in the field.

45.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1.	To understand the process of communication and its effects on society	✓	✓	✓	✓
2.	To gain holistic knowledge about journalism	✓	✓	✓	✓
3.	Knowledge of research techniques to carry out research in the field social science and mass communication	✓	✓	✓	✓
4.	Understanding of the print media systems, its impacts on society and the methods and techniques of the	✓	✓	✓	✓

	content production along with the limitations of the medium				
5.	Knowledge of Cinematic Narrative by keeping art and aesthetic value of Performance in Hindi Cinema		✓	✓	✓
6.	Developing skills in graphic designing and visualization of contents by using modern technologies	✓	✓	✓	✓
7.	Understanding of the electronic media its impacts on society and the methods and techniques of the content production	✓	✓	✓	✓
8	Use communication as a tool for development and social change		✓	✓	✓
9	Development of skills of students in handling camera and modern tools for editing the contents	✓	✓	✓	✓
10	Expose the students the intricacies of reporting and anchoring in digital platform		✓	✓	✓
11	Understanding of the relationship between globalization and media	✓	✓	✓	✓
12	Provide in-depth knowledge of the	✓	✓	✓	✓

	documentary filmmaking with beginner and intermediate levels				
13	provide in-depth knowledge of the communication perceptive of the plastic arts by socio-cultural, religious and historical understanding of the background of the plastic arts in the medieval and modern India		✓	✓	✓
14	Understand marketing communication and execution process	✓	✓	✓	✓
15	To develop Digital News, E-Book, E-Commerce content, Blog and Web Site etc	✓	✓	✓	✓
16	Understanding of Modelling, Texturing, Rigging, Animation, Lighting, Rendering and projects work flow in Maya	✓	✓	✓	✓
17	Basic understanding of modern social media communication, its management and influences on society	✓	✓	✓	✓
18	To enhance the creative and innovative way of writing and speaking skills of the learner to	✓	✓	✓	✓

	become a radio jockey				

46. MA-MC

46.1 PO (Programme Outcomes)

POs	Outcomes
PO1	**Knowledge:** demonstrate acquired knowledge in the field of journalism and appreciate the role of press in a democratic set up
PO2	**Problem Solving and Decision Making:** able to apply the knowledge and skills in solving real life problems faced by the society
PO3	**Professional** engage the professional skills in the field of advertising, public relations, corporate communication, digital communication, media management.
PO4	**Effective Communication using ICT:** effectively engage in communication using modern technologies to share thoughts and ideas
PO5	**Critical/ Reflective thinking:** able to think critically in professional life and become creative/innovative
PO6	**Leadership and Team Work:** able to lead with appropriate vision and work in a team
PO7	**Entrepreneur:** demonstrate the skills of on an entrepreneur to start a venture
PO8	**Learning and Research**: develop a sense of inquiry and investigation life long
PO9	**Ethics:** Follow high ethical standard and appreciate the value system of different cultures

46.2 PSO (Programme Specific Outcomes)

Sl. No.	Programme Specific Outcomes
PSO1	Develop industry ready professionals with sound technical skills and mass communication knowledge
PSO2	To pursue higher studies and carry out research in the field of social science and mass communication
PSO3	Graduate will be able to become an entrepreneur with sound technical knowledge in the field.
PSO4	Hold high degree of human values and professional ethics

46.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	Topics	Linked to			
		Global	National	Regional	Local

1.	Understanding of the basic techniques of social science research and it's applications	✓	✓	✓	✓
2.	Understanding of the electronic and print media systems, its impacts on society and the methods and techniques of the content production	✓	✓	✓	✓
3.	Understand how communication plays a crucial role in the society and how the society and media influence each other	✓	✓	✓	✓
4.	Developing a better understanding about cultural phenomena across different societies and their influences on the entire communication system	✓	✓	✓	✓
5.	To develop skills in new media and understand its uses for advertising, Marketing, social networking and using social media for different purposes	✓	✓	✓	✓
6.	To develop skills in TV/Radio/ Digital media platforms	✓	✓	✓	✓
7	Understanding of film as an art, its production process and its different dimensions	✓	✓	✓	✓
8	Develop skills in tools and techniques	✓	✓	✓	✓

	of Advertising and Public Relation and their use in a corporate organization				
9	learn to make practical use of research methodology to produce a thesis	✓	✓	✓	✓
10	Develop the skills of an animator	✓	✓	✓	✓
11	Develop the skills of a Radio Jockey	✓	✓	✓	✓
12	Develop the skills of a Television Anchor	✓	✓	✓	✓
13	Develop the skills of a Fashion Photographer	✓	✓	✓	✓
14	Develop the skills of a camera operator	✓	✓	✓	✓
15	Develop the skills of a video editor	✓	✓	✓	✓
16	Develop the skills of a web content Developer	✓	✓	✓	✓
17	Learn the process of sound editing and production	✓	✓	✓	✓
18	Proficient in graphic design using different adobe group softwares	✓	✓	✓	✓

47. B.Pharm

47.1 PO (Programme Outcomes)

Sl No.	**Programme Outcomes**
PO1	Apply knowledge of basic science and pharmacy.
PO2	Design and conduct experiments, as well as to carry out problem analysis data interpretation

PO3	Design and develop process to meet desired needs within realistic constraints.
PO4	Function effectively as a leader and member of multidisciplinary teams.
PO5	Isolate, identify, synthesize, formulate and solve complex pharmaceutical problems.
PO6	Understanding of professional and ethical responsibility
PO7	Communicate effectively
PO8	Understand the impact of pharmaceutical solutions in a global, economic, environmental, and societal context
PO9	Manage contemporary pharmaceutical projects and their financial implications.
PO10	Use the techniques, skills, and modern pharmaceutical instruments and tools necessary for pharmacy profession.
PO11	Analyze, screen and ensure quality of drugs/pharmaceuticals.
PO12	Engage in life-long learning

47.2 PSO (Program Specific Outcomes)

Sl No.	**Program Specific Outcomes**
PSO1	Perform research on various medical aspects and implement the Pharmaceutical knowledge in formulating the best suitable dosage form to provide high quality medicines to the society.
PSO2	Render the services to the public by providing patient centric effective treatments to curb the therapeutic issues with the required medicines and explain the effects of the drugs by analyzing the scientific literature for improving their health and well-being.
PSO3	Graduates will able to qualify GPAT, NIPER and other competitive examinations and Explore opportunities in different government and non-government organizations as drug analyst, academician, research scientist and drug inspector.

47.3 Topic addressing Global, National, Regional and Local relevance

Sl No	**Topic**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1	Get the information of various sources of impurities in medicinal agent	✓	✓	✓	✓
2	Handling of prescription and errors in prescription	✓	✓	✓	✓
3	Principles of chemical kinetics and to use them for stability testing and determination of expire date of formulation	✓	✓		✓
4	To perform the qualitative and quantitative analysis of drug using various analytical instruments	✓	✓		✓

5	Application of basic pharmacological knowledge in the prevention and treatment of various diseases	✓	✓		✓
6	Use of plasma drug concentration-time data to calculate the pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination	✓	✓		✓
7	Get To know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents	✓	✓		✓
8	Able to know the various statistical techniques such as factorial design, Regression and ANNOVA to solve pharmaceutical statistical problems	✓	✓		✓

48. M.Pharm (Pharmaceutics)

48.1 PO (Programme Outcomes)

Sl No.	Programme Outcomes
PO1	**Applied Pharmacy Knowledge**: Possess knowledge of the core and fundamental principles associated with modern pharmaceutical technologies, biopharmaceutics, drug regulatory affairs, formulation and evaluation of novel drug delivery systems.
PO2	**Research and Development**: Utilize skills for the development of novel drug delivery approaches for diverse type of active pharmaceutical ingredients. Demonstrate an understanding of the computer-aided processes required to conduct pharmaceutical research.
PO3	**Problem analysis**: Develop ability for in depth analytical and critical thinking in order to identify, formulate and solve the issues related to pharmaceutical development, manufacturing and regulatory processes.
PO4	**Modern tool usage:** Select modern formulation optimization technologies with application of statistical hypothesis testing during development and evaluation of nanoformulation. Use *in silico* approaches for biopharmaceutical studies.
PO5	**Communication:** Make effective documentation, report writing and presentations as per the needs of pharmaceutical industry and academia.
PO6	**Professional identity:** Demonstrate typical professional, legal manners, conforming to all the guidelines of regulatory bodies. Contribute to the training of pharmacy students and the growth and success of pharmacy profession.
PO7	**Leadership skills:** Demonstrate the ability to implement plans and organize tasks within deadlines in the areas of research and manufacturing. Able to apply skills related to management of resources.
PO8	**Planning abilities:** Develop and apply skills for planning and executing activities related to formulation development, manufacturing and regulatory filings.
PO9	**Pharmaceutical ethics:** Apply ethical principles while making decisions and take accountability for the outcomes related to the decisions.
PO10	**Environmental sustainability (SDG):** Address the issues of environmental pollution, industrial waste, and utilization of huge amount of water by applying skills to improve production processes and to ensure environmental sustainability.

PO11	**Life-long learning:** Ability to involve in independent and continuous learning process as per the need and technological advancements. Use of feedback from other professionals and identification of learning requirements for life-long learning improvement. Understand the role of conferences, seminars and workshops for knowledge progression.

48.2 PSO (Program Specific Outcomes)

Sl No.	Program Specific Outcomes
PSO1	Work in different divisions of pharmaceutical industry like manufacturing, quality control, quality assurance, analytical research, formulation research and regulatory affairs.
PSO2	Become an entrepreneur in the areas of formulation research and development, pharmaceutical manufacturing, pharmaceutical consultancy services, drug sales and distribution.
PSO3	Explore opportunities in different government and non-government organizations as drug analyst, academician, research scientist and drug inspector.

48.3 Topic addressing Global, National, Regional and Local relevance

Sl No	Topic	Linked to			
		Global	National	Regional	Local
1	To deals with various advanced analytical instrumental techniques and different skills for identification, characterization and quantification of drugs. Instruments dealt are NMR, Mass spectrometer, IR, HPLC, GC etc	✓	✓	✓	✓
2	To deals with the specific skills to be employed for controlled drug delivery systems & novel oral and Parenteral controlled drug delivery systems	✓	✓		

3	To impart advanced knowledge and skills required to learn various aspects and concepts at pharmaceutical industries to generate better employability.	✓	✓		
4	To impart advanced knowledge and skills required to learn the concept of generic drug and their development, various regulatory filings in different countries, different phases of clinical trials and submitting regulatory documents: filing process of IND, NDA and ANDA	✓	✓		
5	To impart knowledge on the area of advances in Novel drug delivery systems	✓	✓		✓
6	To impart knowledge and skills necessary for dose calculations, dose adjustments and to apply biopharmaceutics theories in practical problem solving.	✓	✓	✓	✓
7	To get knowledge and skills necessary for computer Applications in pharmaceutical research and development who want to understand the application of computers across the entire drug research and development process	✓	✓		✓
8	To impart knowledge and skills necessary for the fundamental need for cosmetic and cosmeceutical products.	✓	✓		✓

49. M.Pharm (Industrial Pharmacy)

49.1 PO (Programme Outcomes)

Sl No.	Programme Outcomes
PO1	**Applied Pharmacy Knowledge**: Possess knowledge of the core and fundamental principles associated with modern pharmaceutical technologies, biopharmaceutics, drug regulatory affairs, formulation and evaluation of novel drug delivery systems.
PO2	**Research and Development**: Utilize skills for the development of novel drug delivery approaches for diverse type of active pharmaceutical ingredients. Demonstrate an understanding of the computer-aided processes required to conduct pharmaceutical research.
PO3	**Problem analysis**: Develop ability for in depth analytical and critical thinking in order to identify, formulate and solve the issues related to pharmaceutical development, manufacturing and regulatory processes.
PO4	**Modern tool usage:** Select modern formulation optimization technologies with application of statistical hypothesis testing during development and evaluation of nanoformulation. Use *in silico* approaches for biopharmaceutical studies.
PO5	**Communication:** Make effective documentation, report writing and presentations as per the needs of pharmaceutical industry and academia.
PO6	**Professional identity:** Demonstrate typical professional, legal manners, conforming to all the guidelines of regulatory bodies. Contribute to the training of pharmacy students and the growth and success of pharmacy profession.
PO7	**Leadership skills:** Demonstrate the ability to implement plans and organize tasks within deadlines in the areas of research and manufacturing. Able to apply skills related to management of resources.
PO8	**Planning abilities:** Develop and apply skills for planning and executing activities related to formulation development, manufacturing and regulatory filings.
PO9	**Pharmaceutical ethics:** Apply ethical principles while making decisions and take accountability for the outcomes related to the decisions.
PO10	**Environmental sustainability (SDG):** Address the issues of environmental pollution, industrial waste, and utilization of huge amount of water by applying skills to improve production processes and to ensure environmental sustainability.
PO11	**Life-long learning:** Ability to involve in independent and continuous learning process as per the need and technological advancements. Use of feedback from other professionals and identification of learning requirements for life-long learning improvement. Understand the role of conferences, seminars and workshops for knowledge progression.

49.2 PSO (Program Specific Outcomes)

Sl No.	Program Specific Outcomes
PSO1	Work in different divisions of pharmaceutical industry like manufacturing, quality control, quality assurance, analytical research, formulation research and regulatory affairs.
PSO2	Become an entrepreneur in the areas of formulation research and development, pharmaceutical manufacturing, pharmaceutical consultancy services, drug sales and distribution.

PSO3	Explore opportunities in collaboration with various pharmaceutical companies and variety of health care professionals to ensure clinical drug trials as per regulatory guidelines for the testing of drugs.

49.3 Topic addressing Global, National, Regional and Local relevance

Sl No	Topic	Linked to			
		Global	**National**	**Regional**	**Local**
1	To deals with various skilled advanced analytical instrumental techniques for identification, characterization and quantification of drugs. Instruments dealt are NMR, Mass spectrometer, IR, HPLC, GC etc.	✓	✓	✓	✓
2	To produce Pharma professionals of high competence who can serve the Industry and current need of the society.	✓	✓		✓
3	To impart skilled knowledge and skills necessary to train the students in the area of novel drug delivery systems.	✓	✓		
4	To impart skilled knowledge and skills necessary to train the students to be on par with the routine of Industrial activities in drug regulatory affairs	✓	✓		✓
5	To impart knowledge and skills necessary for dose calculations, dose adjustments and to apply Biopharmaceutics theories in practical problem solving	✓	✓		
6	To impart knowledge and skills necessary to train the students to be on scale up, technology transfer process and industrial safety issues	✓	✓	✓	✓
7	To develop skills for designing and development of new formulation approaches as per need of the society	✓	✓		✓
8	To inculcate entrepreneurship and leadership abilities in upcoming pharmacy professionals	✓	✓		✓

50. M. Sc Geoinformatics

50.1 Programme Outcome(POs)

POs	Program Outcomes

PO1	Scientific knowledge: Apply the knowledge of basic science fundamentals to the solution of complex scientific problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyse complex scientific problems reaching substantiated conclusions using principles of Physic, Chemistry, Mathematics, Zoology, Botany, Geo-Informatics, and Applied Sciences.
PO3	Design/development of solutions: Design solutions for complex scientific problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern chemical IT tools including prediction and modelling to complex chemical activities with an understanding of the limitations.
PO6	Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO7	Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO8	Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO11	Project management and finance: Demonstrate scientific knowledge with the understanding of the management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
PO12	Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context research, scientific and technological change.
PO13	Demonstrate the ability to succeed in national and international competitive events in the relevant fields

50.2 PSOs of Department of Geoinformatics:

Sl No.	**Program Specific Outcomes**
PSO1	Explain basic physical principles of remote sensing, Geographical Information System, GNSS, coding using Python and ML and relevant theories

PSO2	Understand Geospatial and earth observation technology to generate, integrate, analyse and visualize spatial data as well as principles of databases and data models.
PSO3	Know the appropriate use of geospatial data for different applications. Apply research skills to formulate and carry out independent research in the general field of geo informatics.

50.3 Topics addressing Global, National, Regional and Local relevance

Sl.No.	**Topics**	**Linked to**			
		Global	**National**	**Regional**	**Local**
1.	Gain knowledge about fundamental of remote sensing, GIS and GPS	✓	✓		
2.	Gain knowledge about satellite data processing using python, ML and softwares.	✓	✓	✓	
3.	Sketch, explain and design the plan using surveying instruments.	✓	✓	✓	
4.	Understand the satellite communication system and navigation system. Also understand the architecture of mobile communication system which will enable them for further study in this growing area.	✓	✓	✓	