School of Applied Sciences

Academic Regulations

M.Sc.

Degree Programmes

Centurion UNIVERSITY

Shaping Lives...
Empowering Communities...

CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT

Odisha

www.cutm.ac.in

2020-21

M.Sc - Chemistry/Physics/Math/Botany/Zoology

Program Objectives:

1. To acquire the knowledge with facts and figures related to various subjects in pure sciences and allied subjects. To understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
2. To acquire the skills in handling scientific instruments, planning and performing in laboratory experiments.
3. To think creatively to propose novel ideas in explaining facts and figures or providing new solution to the problems.

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

4. To initiate research practices and develop scientific outlook not only with respect to science subjects but also in all aspects related to life.

POs; Science Masterates will be able to;

A. PSOs of Department of Chemistry:

PSO-1: Students will be able to demonstrate, solve and understand the major concepts in all branches of chemistry.

PSO-2: 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

PSO-3: Students will obtain basic knowledge in the specialized areas of chemistry and will be skilled in various quantitative and qualitative analyses. Can able to solve the problem and also think methodically, independently and draw a logical conclusion.

Mapping PSOs with POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
PSO1	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**
PSO2	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**
PSO3	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**

M.SC Chemistry

Mapping COs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO2	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO3	**H**	**H**	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**H**	**H**	**H**	**H**
CO4	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO5	**H**	**H**	**H**	**H**	**H**	**M**	**M**	**H**	**M**	**H**	**H**	**H**	**H**
CO6	**H**	**H**	**H**	**H**	**H**	**M**	**M**	**H**	**M**	**H**	**H**	**H**	**H**

Course Code	*Course Title*	*Course Type*	*Credits*	CO1	CO2	CO3	CO4	CO5	CO6	PSO1	PSO2	PSO3
CUTM1402	Advanced characterization techniques	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1405	Synthesis and application of nano composites	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1408	Synthesis routes of nanomaterials	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1409	Computational materials science	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**M**	**M**	**M**

CUTM1415	Industrial chemicals	**Practice**	**4**	**H**	**H**	**-**	**-**	**-**	**-**	**H**	**M**	**M**
CUTM1416	Pharmcognosy and phytochemistry	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
cutm1417	Polymer chemistry	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1418	Packaging	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1419	Industrial pollution and its waste management	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1420	Toxicology	**Practice**	**4**	**H**	**H**	**-**	**-**	**-**	**-**	**H**	**M**	**M**
CUTM1421	Biopolymer and hydrogel	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1422	Nano-pharmaceuticals and biomedical science	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**M**	**M**	**M**
CUTM1423	Synthetic organic chemistry	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1424	Energy storage system	**Theory**	**4**	**H**	**H**	**-**	**H**	**-**	**-**	**H**	**M**	**M**
CUTM1425	Sustainable chemistry	**Practice**	**4**	**H**	**H**	**-**	**-**	**H**	**-**	**H**	**M**	**M**
CUTM1426	Analytical techniques	**Theory**	**2**	**H**	**H**	**H**	**-**	**-**	**-**	**H**	**M**	**M**

M.Sc Physics

Course Code	*Course Title*	*Course Type*	*Credits*	CO1	CO2	CO3	CO4	CO5	CO6	PSO1	PSO2	PSO3
CUTM1399	Energy Storage Materials	Theory+ Practice	4	H	H	M	-	-	H	H	M	H
CUTM1400	Bio and Biomimetic Nanomaterials	Theory+ Project	4	H	H	M	-	-	H	H	L	H
CUTM1401	Photo – Volatic Technology and Nano-Catalysis	Theory+ Practice	4	H	H	L	-	-	H	H	L	H
CUTM1402	Advanced Characterization Techniques	Theory+ Practice	4	H	M	M	-	-	H	M	L	H
CUTM1403	Smart and Electronic Materials	Theory+ Project	4	H	H	-	-	-	H	H	L	H
CUTM1404	Corrosion and advanced coating applications	Theory+ Project	4	H	H	M	-	-	H	H	L	H
CUTM1405	Synthesis and Application of Nanocomposites	Theory+ Practice	4	H	M	M	-	-	H	H	L	H
CUTM1406	Material Behaviorof Nanostructures	Theory+ Practice	4	H	H	-	-	-	H	H	M	H
CUTM1407	Emerging Materials	Theory+ Project	4	H	M	M	-	-	H	H	L	H
CUTM1408	Synthesis Routes of Nanomaterials.	Theory+ Practice	4	H	L	M	-	-	H	H	L	H
CUTM1409	Computational Materials Science	Theory+ Practice	4	H	M	L	H	-	H	H	H	H
CUTM1410	Plasma Technology	Theory+ Project	4	H	M	M	-	-	H	H	L	H

CUTM1411	Essentials of Nanomaterials	Theory+ Practice	4	H	M	M	-	-	H	H	L	H
CUTM1412	Advanced Quantum Physics	Theory+ Project	4	H	H	-	H	-	H	H	H	H
CUTM1413	Physics of Solidstate and semiconductors	Theory+ Practice	4	H	M	-	-	-	H	H	M	H
CUTM1414	Lasers Technology	Theory+ Practice+ Project	4	H	M	-	-	-	H	H	L	H

M.SC Mathematics

Mapping COs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO2	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO3	**H**	**H**	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**H**	**H**	**H**	**H**
CO4	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO5	**H**	**H**	**H**	**H**	**H**	**M**	**M**	**H**	**M**	**H**	**H**	**H**	**H**
CO6	**H**	**H**	**H**	**H**	**H**	**M**	**M**	**H**	**M**	**H**	**H**	**H**	**H**

Course Code	*Course Title*	*Course Type*	*Credits*	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6	PSO 1	PSO 2	PSO 3
CUTM1525	Heat and Mass Transfer	Theory+ Practice +Project	4	**H**	**M**	**M**	**M**	**L**	**H**	**M**	**H**	**H**
CUTM1526	Numerical Methods for CFD	Theory+ Practice +Project	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**H**	**M**
CUTM1527	Fluid Dynamics	Theory+ Practice	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**H**	**M**
CUTM1528	Geometry and Grid Generation	Practice +Project	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**M**	**M**
CUTM1529	Applications of CFD using Computational Tool-Simulia	Practice +Project	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**M**	**M**
CUTM1530	Advanced differential equations	Theory+ Practice +Project	4	**H**	**M**	**M**	**M**	**M**	**L**	**M**	**L**	**M**

CUTM1531	Graph Theory	Theory+ Practice	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**M**	**M**
CUTM1532	Optimization techniques	Theory+ Practice	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**M**	**M**
CUTM1533	Advanced Statistical Methods	Theory+ Practice +Project	4	**L**	**M**	**M**	**L**	**L**	**L**	**M**	**H**	**M**
CUTM1534	Applied Number Theory	Theory+ Practice	4	**M**	**M**	**M**	**M**	**L**	**L**	**M**	**H**	**M**
CUTM1535	Advanced complex analysis	Theory +Project	4	**M**	**M**	**H**	**H**	**L**	**M**	**H**	**M**	**M**
CUTM1536	Topology	Theory +Project	4	**H**	**M**	**M**	**H**	**L**	**L**	**M**	**M**	**M**
CUTM1537	Differential Geometry and Tensor Calculus	Theory +Project	4	**H**	**M**	**M**	**L**	**L**	**M**	**M**	**H**	**M**
CUTM1538	Advanced Algebra	Theory +Project	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**M**	**M**
CUTM1018	Data Analysis and Visualisation using Python	Practice +Project	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**M**	**M**
CUTM1019	Machine Learning using Python	Theory+ Practice +Project	4	**H**	**M**	**M**	**M**	**L**	**L**	**M**	**M**	**M**

M.Sc Botany

Mapping COs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO2	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**
CO3	**M**	**H**	**H**	**M**	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**H**	**H**
CO4	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**
CO5	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**H**	**H**
CO6	**M**	**M**	**H**	**M**	**H**	**M**	**H**	**L**	**M**	**H**	**H**	**H**	**H**

Course Code	Course Title	Course Type	Credits	CO1	CO2	CO3	CO4	CO5	CO6	PSO1	PSO2	PSO3
CUTM 1436	Microbiology	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**L**	**L**	**H**	**H**	**H**	**M**
CUTM 1431	Systematics and Diversity Of Plants	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**M**
CUTM 1437	Cell and Molecular Biology	***Theory+ Practice+ Project***	04	**H**	**M**	**H**	**M**	**L**	**M**	**H**	**H**	**L**
CUTM 1434	Advances In Plant Ecology	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**M**
CUTM 1440	Plant Breeding and Genetics	***Theory+ Practice+ Project***	04	**H**	**M**	**M**	**L**	**M**	**L**	**H**	**H**	**L**
CUTM 1428	Plant Physiology and Metabolism	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**H**
CUTM 1438	Bioanalytical Techniques	***Theory+ Practice+ Project***	04	**H**	**M**	**M**	**H**	**L**	**L**	**H**	**M**	**H**
CUTM 1430	Developmental Biology and Phytotomy	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**M**	**M**	**M**	**H**	**H**	**L**
CUTM 1439	Plant Biotechnology	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**M**
CUTM 1433	Biochemistry and Enzyme Technology	***Theory+ Practice+ Project***	04	**H**	**H**	**L**	**L**	**L**	**M**	**H**	**H**	**L**
CUTM 1441	Plant Genomics	***Theory+ Practice+ Project***	04	**H**	**H**	**M**	**H**	**M**	**M**	**H**	**H**	**M**
CUTM 1435	Computational Biology	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**M**
CUTM 1416	Pharmcognosy and phytochemistry	***Theory+ Practice+***	04	**H**	**H**	**H**	**M**	**M**	**M**	**H**	**H**	**M**

		Project										
CUTM 1427	Herbal Cosmetic Technology	***Theory+ Practice+ Project***	04	**H**	**H**	**H**	**M**	**H**	**M**	**H**	**M**	**M**
CUTM 1429	Good Manufacturing Practices-Herbal Industry	***Theory+ Practice+ Project***	04	**H**	**M**	**M**	**M**	**H**	**L**	**M**	**L**	**L**
CUTM 1432	Advanced Separation Technologies and Downstream Processing	***Theory+ Practice+ Project***	04	**H**	**H**	**M**	**L**	**L**	**L**	**H**	**M**	**L**

M.Sc Zoology

Mapping COs with POs

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PO13**
CO1	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**
CO2	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**
CO3	**M**	**H**	**H**	**M**	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**H**	**H**
CO4	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**
CO5	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**H**	**H**
CO6	**M**	**M**	**H**	**M**	**H**	**M**	**H**	**L**	**M**	**H**	**H**	**H**	**H**

Course Code	***Course Title***	***Course Type***	***Credits***	**CO 1**	**CO 2**	**CO 3**	**CO 4**	**CO 5**	**CO 6**	**PSO 1**	**PSO 2**	**PSO 3**
CUTM 1442	Advanced Aquaculture	Theory	4	**H**	**H**	**M**	**L**	**H**	**H**	**H**	**H**	**H**
CUTM 1452	Animal Biotechnology	Theory	4	**H**	**H**	**H**	**L**	**M**	**H**	**H**	**H**	**H**
CUTM 1453	Animal Breeding	Theory	4	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**H**	**H**
CUTM 1447	Coastal Aquaculture	Theory	4	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**H**	**H**
CUTM 1443	Water and Soil quality management in aquaculture	Theory	4	**H**	**H**	**H**	**M**	**M**	**M**	**H**	**H**	**H**
CUTM 1446	Anatomy and Biology and Shellfish	Theory	4	**H**	**H**	**M**	**L**	**M**	**H**	**H**	**H**	**H**
CUTM 1448	Fish processing and value addition	Theory	4	**H**	**H**	**M**	**L**	**H**	**H**	**H**	**H**	**H**
CUTM1 444	Fish and Shellfish nutrition	Theory	4	**H**	**H**	**H**	**M**	**M**	**H**	**H**	**H**	**H**

CUTM1450	Animal Physiology and Biochemistry	Theory	4	H	H	H	M	L	H	H	H	H
CUTM 1451	Immunology & Cancer biology	Theory	4	H	H	H	M	M	H	H	H	H
CUTM1438	Bioanalytical Techniques	Theory	4	H	H	H	M	M	H	H	H	H
CUTM1445	Fish and Shellfish Health Management	Theory	4	H	H	H	M	H	H	H	H	H
CUTM 1437	Cell & Molecular biology	Theory	4	H	H	M	L	M	H	H	H	H
CUTM 1449	Ornamental Aquaculture	Theory	4	H	H	M	M	H	H	H	H	H
CUTM 1454	Genetics and Epigenetics	Theory	4	H	H	H	M	M	H	H	H	H
CUTM 1436	Microbiology	Theory	4	H	H	H	L	M	H	H	H	H

B. PSOs of Department of Physics:

PSO-1: Learn the concepts and advanced theory of Classical Mechanics, Solid State Physics, Quantum Mechanics, Relativity, Nuclear and Particle Physics, Electronics etc.

PSO-2: Analyze the applications of mathematics to the problems in physics & develop suitable mathematical method for such application & for formulation of physical theories.

PSO-3: 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.

Mapping PSOs with POs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
PSO1	H	H	M	M	L	M	L	H	H	L	M	M	M
PSO2	H	H	M	H	H	M	M	M	M	M	M	H	M
PSO3	H	H	M	M	M	M	L	M	M	M	M	M	M

C. PSOs of Department of Mathematics:

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.

Mapping PSOs with POs (Scale of High, Medium and Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
PSO1	H	H	H	H	H	H	H	H	H	H	H	H	H

PSO2	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**L**
PSO3	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**H**	**M**	**H**	**H**	**H**	**L**

D. PSOs of Department of Botany:

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.

Mapping PSOs with POs (Scale of High, Medium and Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
PSO1	**H**	**H**	**M**	**M**	**L**	**M**	**L**	**H**	**H**	**L**	**M**	**M**	**M**
PSO2	**H**	**H**	**M**	**H**	**H**	**M**	**M**	**M**	**M**	**M**	**M**	**H**	**M**
PSO3	**H**	**H**	**M**	**M**	**M**	**M**	**L**	**M**	**M**	**M**	**M**	**M**	**M**

E. PSOs of Department of Zoology:

PSO1: Jobs

PSO2: Higher studies

PSO3: Research

Mapping PSOs with POs (Scale of High, Medium and Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
PSO1	**H**	**H**	**M**	**M**	**L**	**M**	**L**	**H**	**H**	**L**	**M**	**M**	**M**
PSO2	**H**	**H**	**M**	**H**	**H**	**M**	**M**	**M**	**M**	**M**	**M**	**H**	**M**
PSO3	**H**	**H**	**M**	**M**	**M**	**M**	**L**	**M**	**M**	**M**	**M**	**M**	**M**

COs of Master of Science programmes:

COs	**Skills**
CO1	Knowledge
CO2	Observe, Classify, Quantify, Interpret and Communicate
CO3	Investigation and Judgements
CO4	Problem Solving
CO5	Leadership & Entrepreneurship
CO6	Product/Publication/Patent

Designing the Program Curriculum:

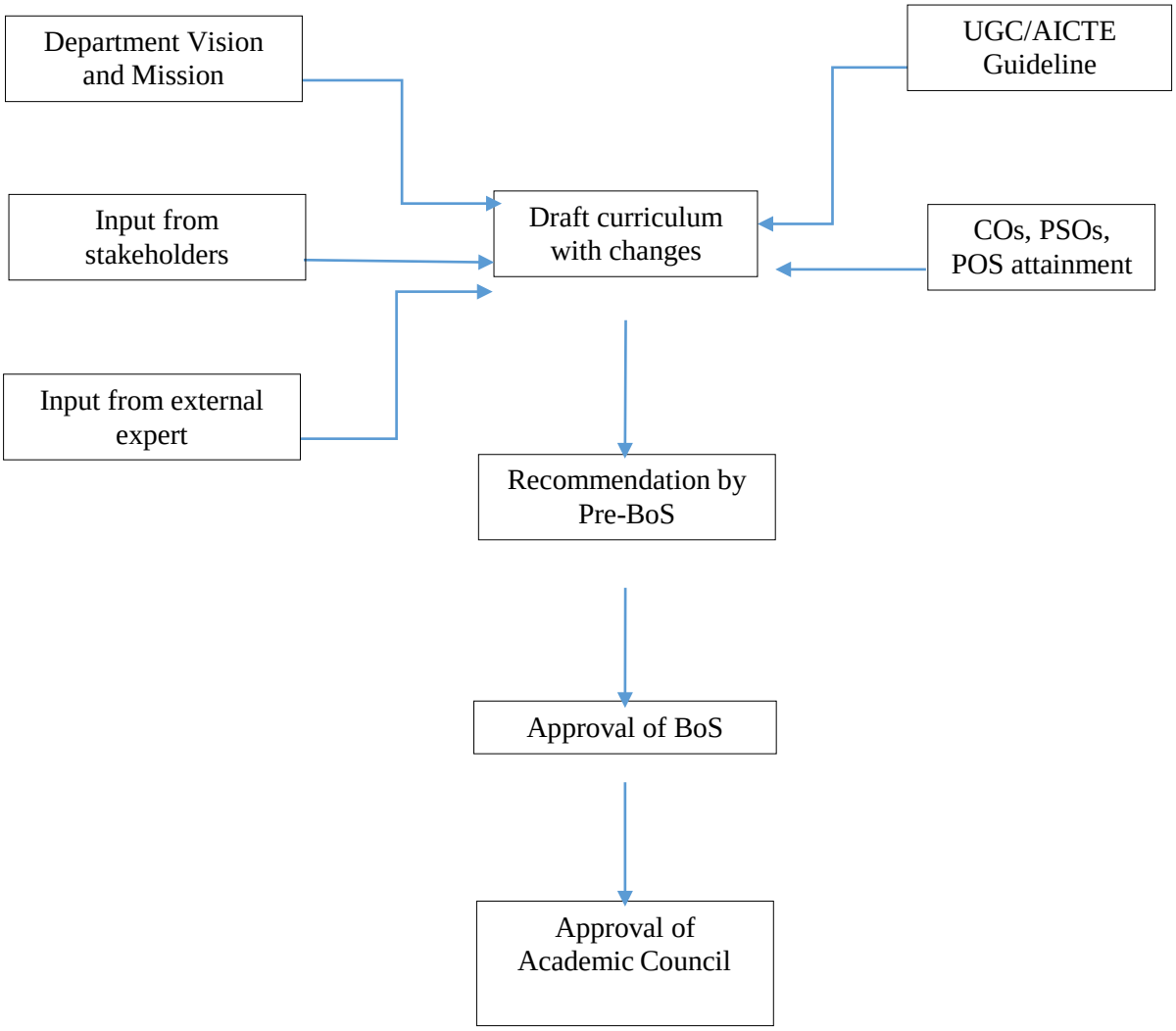
Step-1: Fcaulty Council prepares draft curriculum / curricular changes based on the following:

- Department Vision and Mission
- Program Educational Objectives
- Conclusions drawn from analysis of attainment of COs, PSOs, POs
- Input from Industry Professionals/Practitioners/Recruiters, Alumni, Students
- Guidelines of statutory bodies, such as, AICTE / UGC

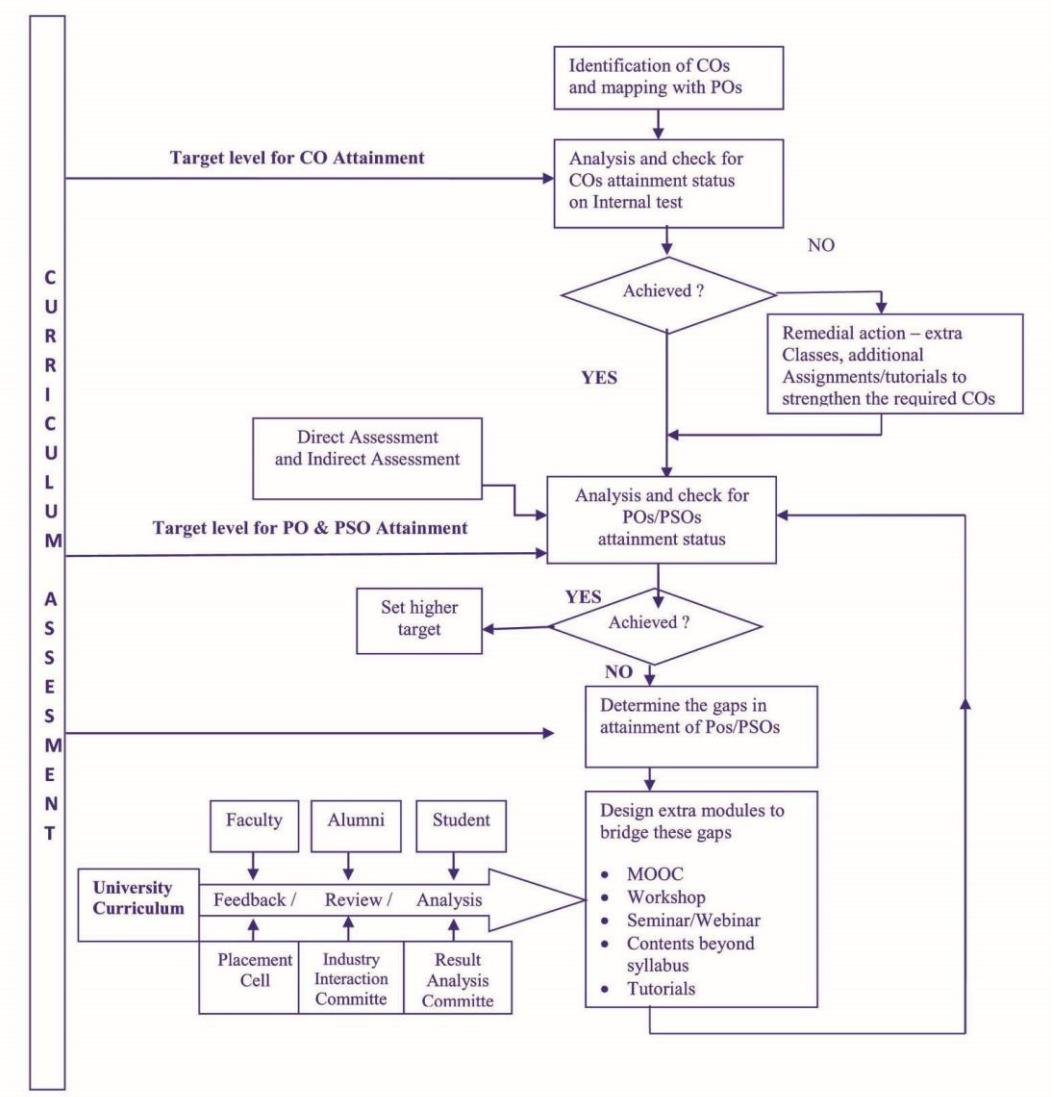
Step-2: Conduct pre-Board of Studies (pre-BoS) meeting to discuss the draft curriculum and recommend necessary changes.

Step-3: Conduct Board of Studies (BoS) meeting to finalize the curriculum and syllabi.

Step-4: Submit the final curriculum for approval to Academic Council.



Flow chart for design/ revision of Program Curriculum and Syllabi



Process of measuring Programme outcome and design of curriculum

1. Examination Policy:

The section on Examination Policy gives specific guidelines, rules of the Examination and expected Examination Code of Conduct.

1.1 Eligibility for Examinations:

The eligibility criteria for appearing in the examinations of CUTM are as follows:

- A student has to maintain overall 75% attendance to be able to write all papers at end-semester examinations in a semester. The attendance is considered from the date of commencement of classes as per academic calendar of the university and is calculated based on the total number of working days available in a semester.
- The schedule of classes shall be notified through a time table before the beginning of the classes in the Semester. Attendance record will be compiled at the time of each class test and the students with poor attendance will be informed through notification. The guardian may be informed through a letter/SMS. Letters will be issued to the student and the guardian before he/she is debarred for appearing at University examination due to shortage of attendance. Examination Section shall be informed about the list of eligible/ineligible students for the Examination. Dean will monitor students' attendance.
- Concessions: A student who has been absent for short periods on health ground or due to participation in cultural, sports and other academic/official assignments in the interest of students, with prior written permission of the Dean/Head of the Department shall be permitted a concession of 10% in attendance (i.e. will be eligible for appearing in examination with a minimum of 65% attendance).
- A student will be allowed to appear in the Semester Examination in those theory subjects where his/her attendance is not less than 75% in case he/she does not have 75% overall attendance.
- A candidate shall be allowed in a Semester Examination only after he/she is issued an Admit Card for the relevant examination by the University through the Examination Section of the College.

- Students who have been found to indulge in malpractice during examination will be awarded 'M' grade in that subject. The University will take appropriate disciplinary action, as per rule.
- A student who is absent in any subject(s) for which he/she has registered will be awarded 'S' grade. He/she is permitted to appear in those Subjects in subsequent semester examinations after compensating for the course work missed and obtaining due permission from the respective College and University.
- A student may register to appear in a semester examination which she/he has not passed, with appropriate fee.

1.2 Evaluation System:

The University has a continuous evaluation system for each type of Subjects (Theory, Practice, Project, Theory & Practice, Theory & Project, Practice & Project, Theory, Practice & Project). For this purpose the university holds the following examinations.

- End Semester Examinations at the end of the Odd and Even Semester course work
- Examination on Demand (EOD) to be notified from time to time. In general, there will be one EOD in each semester, in addition to a special EOD towards the end of Academic Year.

1.2.1. The Assessment breakup of Internal and External are as follows:

S. No.	*Course Type*	*Total Marks for Assessment*	*Internal Evaluation*			*External Evaluation*		
			Theory	*Practice*	*Project*	*Theory*	*Practice*	*Project*
1	*Theory*	*100*	*40*	*-*	*-*	*60*	*-*	*-*
2	*Practice*	*100*	*-*	*50*	*-*	*-*	*50*	*-*
3	*Project*	*100*	*-*	*-*	*50*	*-*	*-*	*50*
4	*Theory + Practice*	*100*	*20*	*30*	*-*	*30*	*20*	*-*
5	*Theory + Project*	*100*	*20*	*-*	*25*	*30*	*-*	*25*
6	*Theory + Practice + Project*	*300**	*40*	*50*	*50*	*60*	*50*	*50*
7	*Practice + Project*	*200*	*-*	*50*	*50*	*-*	*50*	*50*

Details of Theory + Practice + Project (300*)

	Theory		*Practice*		*Project*	
	Internal	*External*	*Internal*	*External*	*Internal*	*External*
Marks for basic Assessment	*40*	*60*	***50***	*50*	***50***	*50*
Total for basic Assessment	*100*		*100*		*100*	

% to be considered for Award of Grade	***40***	***30***	***30***

- All Internal marks will be recorded in ERP and uploaded to EMS. All external marks to be sent to QA cell in a sealed cover as per the direction of QA.
- Grading pattern to be followed as specified in the Subject Depository.
- Pass marks for Theory, Practice and Project will be as follows:

Theory	Practice	Project
40%	50%	50%

Student has to get pass percentage in individual components

- In case, a student gets" **F"** grade in theory course, he/ she will only appear for External component as the internal marks are locked. But, in case of combination courses, the student will have to appear for all the external components (theory + practice + project), even if the student has cleared in some/ failed in some of the components.
- Registration of a paper having pre-requisite condition indicates that, a student will only be allowed to register provided he/she has cleared the pre-requisite paper at the time of registration.
- A student may apply for rechecking and photocopy as per the norms.
- A student can appeal against the rechecking result(s) with a fee of Rs 5000/- per paper. The fee will be refunded to the student in case the revised result (marks) is 10% or more than the earlier rechecked marks.

1.2.2. Examination & Evaluation Systems for Back Papers:

1. Back paper (Theory)
    a. Option 1: Students can re-register back paper subject during a semester (if it is offered in that semester), attend all class appear internal examination and end semester examination by paying requisite registration fee per subject. The previous internal/external marks will be invalid. The student will be evaluated and grades will be awarded as per the marks scored in the current session.
    b. Option 2: Student can appear EOD for external component only. This external mark along with previous internal marks scored by student will be considered for final grade. No scope for change in internal marks.

2. Back Paper (Lab/Practice/Workshop)
    a. Option 1: Student can re-register back paper during a semester (if it is offered in that semester) by paying requisite registration fee per subject. The previous internal/external marks will be invalid. The student will be evaluated and grades will be awarded as per the marks scored in the current session.

    b. Option 2: Student can re-register for summer course, conduct all Lab experiments and appear internal & external examination by paying requisite registration fee per subject. The previous internal/external marks will be invalid. The student will be evaluated and grades will be awarded as per the marks scored in the current session. Student has to pay exam fee as applicable.

3. Back Paper (T+P+P/T+P/P+P/Project)
    a. Option 1: Student can re-register during a semester (if it is offered in that semester) by paying requisite registration fee per subject. Student has to attend required theory class, conduct all Lab experiments/ does project, appear internal examination and end semester examination. The previous internal/external marks will be invalid. The student will be evaluated and grades will be awarded as per the marks scored in the current session.

    b. Option 2: Student can appear EOD for external components for Theory/Practice/Project only to clear back paper. The previous internal marks will be considered for final grade. No scope for change in internal marks.

1.2.3. <u>Assessments of Projects, Internships & Seminars (In Domains & CBCS All)</u>

a. Projects:

There will be Process and Output of the Project. Process will be dealt and marks will be given by Internal Faculty/ Guide. Output will be evaluated by External Examiner (External Examiner + Faculty committee of the Dept.). Internal Evaluation is 50% and External Evaluation is 50%.

Process will include Literature review, design/ techniques to be decided, Experiment/ testing/ simulation, Attendance, Observations/ viva.
Output will include Report, Product, Presentation etc.

Note: *The project report can be of a new project/product development or working with continuing project/production. Students need to prepare a report based on the followings; new product development (if any): Product details, product feature, product design /drawing,scope, commercial production process, costing of product, use of product, equipment's used for production, safety and security measures, raw materials required, inventory management systems and quality standards & practice etc.*

In case of operation & maintenance project student has to prepare report on O&M Role and Responsibilities, operation sequence and procedures, production control procedures, Input /Output procedures, Diagnostics and problem handling procedure, Maintenance procedures, Inventory Management, safety, testing,

maintenance contracts, operation maintenance records,etc.

b. Seminars:

I. Report – 40% weightage
II. Presentation --- 30% weightage
III. Attendance & Participation in seminar talks given by other students for the course --- 30% weightage.

3. General

3.1 The academic regulations should be read as a whole for the purpose of interpretation.

3.2 In case of doubt or ambiguity in the interpretation of the above regulations, the decision of the Vice-Chancellor is final.

3.3 The University may change or amend the academic regulations at any time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the University.

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