

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
M.TECH. COMPUTER AIDED DESIGN
(FULL TIME PROGRAMME)

SEMESTER I

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EME-501	Numerical Methods & Computer Programming	5 (3-2-0)	30	20	-	50	50	100
2.	PCC	EME-503	Advance Mechanics of Solids Computer Graphics & Geometric Modelling	4 (3-1-0)	30	20	-	50	50	100
3.	PCC	EME-505	Computer Aided Design of Mechanical System	5 (3-2-0)	30	20	-	50	50	100
4.	PCC	EME-507	Numerical Methods & Computer Programming	4 (3-1-0)	30	20	-	50	50	100
Total Credits				18						

SEMESTER II

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EME-502	Optimization Methods for Engineering Design	4 (3-1-0)	30	20	-	50	50	100
2.	PCC	EME-504	Finite Element Method	4 (3-1-0)	30	20	-	50	50	100
3.	PEC	PEC-I	PEC-I	4 (3-1-0)	30	20	-	50	50	100
4.	PEC	PEC-II	PEC-II	4 (3-1-0)	30	20	-	50	50	100
Total Credits				16						

SEMESTER III

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EME-601	Product Design & Development	4 (3-1-0)	30	20	-	50	50	100
2.	PEC	PEC-III	PEC-III	4 (3-1-0)	30	20	-	50	50	100
3.	Seminar	EME-671	Seminar	2 (0-0-4)	-	50	-	50	50	100
4.	Dissertation	EME-697	Dissertation	4 (0-0-8)	-	50	-	50	50	100
Total Credits				14						

SEMESTER IV

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	Dissertation	EME-698	Dissertation	12 (0-0-24)	-	50	-	50	50	100
Total Credits				12						

Total Programme Credits : 60

EME 697 Dissertation will have Internal Evaluation while EME 698 Dissertation will have External Evaluation.

DEPARTMENT OF MECHANICAL ENGINEERING
LIST OF ELECTIVE COURSES
M.TECH. COMPUTER AIDED DESIGN
(FULL TIME PROGRAMME)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1.	EME-530	Theory of Elasticity & Plasticity	4 (3-1-0)
2.	EME-532	Computational Fluid Dynamics	4 (3-1-0)
3.	EME-534	Smart Materials & Structures	4 (3-1-0)
4.	EME-536	Industrial Design and Ergonomics	4 (3-1-0)
5.	EME-538	Rapid Prototyping & Tooling	4 (3-1-0)
6.	EME-540	Advanced Manufacturing Processes	4 (3-1-0)

Programme Elective-II

1.	EME-550	Advanced Mechanical Vibrations	4 (3-1-0)
2.	EME-552	Introduction to Robotics	4 (3-1-0)
3.	EME-554	Flexible Manufacturing System	4 (3-1-0)
4.	EME-556	Reliability & Maintenance	4 (3-1-0)
5.	EME-558	Composite Materials	4 (3-1-0)

Programme Elective-III

1.	EME-631	Computer Aided Manufacturing	4 (3-1-0)
2.	EME-633	Fracture Mechanics	4 (3-1-0)
3.	EME-635	Neural Network & Fuzzy Systems	4 (3-1-0)
4.	EME-637	Design of Thermal System	4 (3-1-0)
5.	EME-639	Advance Machine Design	4 (3-1-0)
6.	EME-641	Simulation, Modeling & Analysis	4 (3-1-0)

**SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
M.TECH. ENVIRONMENTAL SCIENCE AND ENGINEERING
(FULL TIME PROGRAMME)**

SEMESTER I

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	ECE 501	Environmental Chemistry and Microbiology	5(3-1-2)	15	20	15	50	50	100
2.	PCC	ECE 503	Environmental Quality and Natural Process	4(3-1-0)	30	20	-	50	50	100
3.	PCC	ECE 505	Air Pollution Control	5(3-1-2)	15	20	15	50	50	100
4.	PEC	PEC I	PEC I	4(3-1-0)	30	20	-	50	50	100
Total Credits				18						

SEMESTER II

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	ECE 502	Design of Wastewater Treatment	4(3-1-0)	30	20	-	50	50	100
2.	PCC	ECE 504	Solid and Hazardous Waste Management	4(3-1-0)	30	20	-	50	50	100
3.	PCC	BMA 514	Probability and Statistics for Engineers	4(3-1-0)	30	20	-	50	50	100
4.	PEC	PEC II	PEC II	4(3-1-0)	30	20	-	50	50	100
Total Credits				16						

SEMESTER III

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	ECE 601	Environmental System Analysis	4(3-1-0)	30	20	-	50	50	100
2.	PEC	PEC III	PEC III	4(3-1-0)	30	20	-	50	50	100
3.	Seminar	ECE 671	Seminar	2(0-0-2)	-	50	-	50	50	100
4.	Dissertation	ECE 697	Dissertation	4(0-0-8)	-	50	-	50	50	100
Total Credits				14						

SEMESTER IV

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	Dissertation	ECE 698	Dissertation	12(0-0-24)	-	50	-	50	50	100
Total Credits				12						

Total Programme Credits : 60

ECE 697 Dissertation will have Internal Evaluation while ECE 698 Dissertation will have External Evaluation.

DEPARTMENT OF CIVIL ENGINEERING
LIST OF ELECTIVE COURSES
M.TECH. ENVIRONMENTAL SCIENCE AND ENGINEERING
(FULL TIME PROGRAMME)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1.	ECE-509	Environmental Impact Assessment	4(3-1-0)
2.	ECE-511	Surface Water Quality Modeling and Control	4(3-1-0)
3.	ECE-513	Toxicology and Environmental Risk Assessment	4(3-1-0)
4.	ECE-515	Environmental Economics, Legislation and Social Impact	4(3-1-0)
5.	ECE-517	Physico-Chemical Processes in Water and Wastewater	4(3-1-0)

Programme Elective-II

1.	ECE-510	Ground Water Flow and Pollution Modeling	4(3-1-0)
2.	ECE-512	Advanced Water and Wastewater Technologies	4(3-1-0)
3.	ECE-514	Principles of Cleaner Production	4(3-1-0)
4.	ECE-516	Industrial Waste Management and Environmental Audit	4(3-1-0)
5.	ECE-518	Occupational Health and Safety	4(3-1-0)

Programme Elective-III

1.	ECE-603	Remote Sensing and GIS for Environmental Applications	4(3-1-0)
2.	ECE-605	Environmental Hydraulics	4(3-1-0)
3.	ECE-607	Application of Soft Computing Techniques	4(3-1-0)
4.	ECE-609	Transport of Water and Wastewater	4(3-1-0)
5.	ECE-611	Water Resources Management	4(3-1-0)

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
M.TECH. ELECTRONICS & COMMUNICATION ENGINEERING
(FULL TIME PROGRAMME)

SEMESTER I

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EET-501	Introduction to Signal Analysis	4 (3-1-0)	30	20	-	50	50	100
2.	PCC	EET-503	Advanced Semiconductor Devices	4 (3-1-0)	30	20	-	50	50	100
3.	PCC	BMA-507	Probability, Statistics and Queuing Model	4 (3-1-0)	30	20	-	50	50	100
4.	PEC	PEC-I	PEC-I	4 (3-1-0)	30	20	-	50	50	100
Total Credits				16						

SEMESTER II

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EET-502	Digital Communication	5 (3-2-0)	15	20	15	50	50	100
2.	PCC	EET-504	Optical Communication	5 (3-2-0)	15	20	15	50	50	100
3.	PCC	BMA-512	Discrete Mathematics	4 (3-1-0)	30	20	-	50	50	100
4.	PEC	PEC-II	PEC-II	4 (3-1-0)	30	20	-	50	50	100
Total Credits				18						

SEMESTER III

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	EET-601	Advanced Digital Signal Processing	4 (3-1-0)	30	20	-	50	50	100
2.	PEC	PEC-III	PEC-III	4 (3-1-0)	30	20	-	50	50	100
3.	Seminar	EET-695	Seminar	2 (0-0-4)	-	50	-	50	50	100
4.	Dissertation	EET-697	Dissertation	4 (0-0-8)	-	50	-	50	50	100
Total Credits				14						

SEMESTER IV

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	Dissertation	EET-698	Dissertation	12 (0-0-24)	-	50	-	50	50	100
Total Credits				12						

Total Programme Credits : 60

EET 697 Dissertation will have Internal Evaluation while EET 698 Dissertation will have External Evaluation.

DEPARTMENT OF ELECTRONICS ENGINEERING
LIST OF ELECTIVE COURSES
M.TECH. ELECTRONICS & COMMUNICATION ENGINEERING
(FULL TIME PROGRAMME)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1.	EET-531	Space Communication	4 (3-1-0)
2.	EET-533	Organic Electronics	4 (3-1-0)
3.	EET-535	RF Systems	4 (3-1-0)
4.	EET-537	Digital System Design	4 (3-1-0)
5.	EET-539	Advanced Microprocessor	4 (3-1-0)
6.	EET-541	Communication Theory	4 (3-1-0)

Programme Elective-II

1.	EET-550	Embedded Systems	4 (3-1-0)
2.	EET-552	Antenna Analysis & Synthesis	4 (3-1-0)
3.	EET-554	VLSI System Design	4 (3-1-0)
4.	EET-556	Wireless Communication	4 (3-1-0)
5.	EET-558	Information Theory & Coding	4 (3-1-0)
6.	EET-560	Architecture & Application of Digital Signal Processors	4 (3-1-0)

Programme Elective-III

1.	EET-631	Telecommunication & Switching	4 (3-1-0)
2.	EET-633	Image Processing	4 (3-1-0)
3.	EET-635	Data Communication Networks	4 (3-1-0)
4.	EET-637	Fuzzy Electronics	4 (3-1-0)
5.	EET-639	Photonic Networks	4 (3-1-0)
6.	EET-641	VLSI Implementation of Digital Processors	4 (3-1-0)
7.	EET-643	Mobile Communication	4 (3-1-0)

SEMESTER WISE COURSE STRUCTURE & EVALUATION SCHEME
M.TECH. CHEMICAL ENGINEERING
(FULL TIME PROGRAMME)

SEMESTER I

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	TCH-501	Advanced Mathematical Methods in Chemical Engg.	4 (3-1-0)	30	20	-	50	50	100
2.	PCC	TCH-503	Advanced Chemical Engineering Thermodynamics	4 (3-1-0)	30	20	-	50	50	100
3.	PCC	TCH-505	Advanced Chemical Reaction Engineering	4 (3-1-0)	30	20	-	50	50	100
4.	PEC	PEC-I	PEC-I	4 (3-1-0)	30	20	-	50	50	100
Total Credits				16						

SEMESTER II

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	TCH-502	Advanced Transport Phenomena	4 (3-1-0)	30	20	-	50	50	100
2.	PCC	TCH-504	Advanced Separation Processes	4 (3-1-0)	30	20	-	50	50	100
3.	PCC	TCH-506	Optimization of Chemical Processes	4 (3-1-0)	30	20	-	50	50	100
4.	PEC	PEC-II	PEC-II	4 (3-1-0)	30	20	-	50	50	100
Total Credits				16						

SEMESTER III

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	PCC	TCH-601	Modeling and Simulation of Chemical Processes	4 (3-1-0)	30	20	-	50	50	100
2.	PCC	TCH-603	Design & Simulation Lab	2 (0-0-6)	-	20	30	50	50	100
3.	PEC	PEC-III	PEC-III	4 (3-1-0)	30	20	-	50	50	100
4.	Seminar	TCH-671	Seminar	2 (0-0-4)	-	50	-	50	50	100
5.	Dissertation	TCH-697	Dissertation	4 (0-0-8)	-	50	-	50	50	100
Total Credits				16						

SEMESTER IV

Sr. No.	Course Type	Subject Code	Course Title	Credits (L-T-P)	Sessional Marks				ESM	Total Mark
					MSE	TA	Lab	Total		
1.	Dissertation	TCH-698	Dissertation	12 (0-0-24)	-	50	-	50	50	100
Total Credits				12						

Total Programme Credits : 60

TCH 697 Dissertation will have Internal Evaluation while TCH 698 Dissertation will have External Evaluation.

DEPARTMENT OF CHEMICAL ENGINEERING
LIST OF ELECTIVE COURSES
M.TECH. CHEMICAL ENGINEERING
(FULL TIME PROGRAMME)

Programme Elective-I

S. No.	Course Code	Course Name	Credits
1.	TCH-531	Air Pollution Monitoring and Control	4 (3-1-0)
2.	TCH-533	Safety Hazard and Risk Analysis	4 (3-1-0)
3.	TCH-535	Instrumental Methods of Analysis	4 (3-1-0)
4.	TCH-537	Advanced Petroleum Refining	4 (3-1-0)

Programme Elective-II

1.	TCH-550	Advanced Process Control	4 (3-1-0)
2.	TCH-552	Statistical Design of Experiments	4 (3-1-0)
3.	TCH-554	Design of Piping System for Chemical Plants	4 (3-1-0)
4.	TCH-556	Water Pollution Monitoring and Control	4 (3-1-0)

Programme Elective-III

1.	TCH-631	Principles of Polymer Engineering	4 (3-1-0)
2.	TCH-633	Solar Thermal Energy Storage	4 (3-1-0)
3.	TCH-635	Nano Technology	4 (3-1-0)
4.	TCH-637	Natural Gas Engineering	4 (3-1-0)