

GUJARAT TECHNOLOGICAL UNIVERSITY

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	UNIVERSITY EXAMINATION (MARKS)		MID SEM. TEST MARKS	INTERNAL ASSESSMENT MARKS	TOTAL MARKS	Branch Code
		Theory	Tutorial	Practical		THEORY	PRACTICAL /VIVA				
Branch Code : 1 M.E. Computer Science & Engineering (Semester I)											
710101	Service Oriented Architecture	4	0	2	5	60	10	20	10	100	1
710102	Quantum Computing & Algorithm Analysis	4	0	2	5	60	10	20	10	100	1
710103	Distributed Operating System	3	0	2	4	60	10	20	10	100	1
710001	Communication and Research Skills	2	2	0	3	60	0	20	20	100	1
710204	Computer Graphics (Int.Elective)	3	0	2	4	60	10	20	10	100	1
710205	Internet Technology (Int.Elective)	3	0	2	4	60	10	20	10	100	1
710104	Information Security (Elective)	3	2	0	4	60	10	20	10	100	1
710105	Real Time Computing (Elective)	3	2	0	4	60	10	20	10	100	1
710106	Information Theory & Coding (Elective)	3	2	0	4	60	10	20	10	100	1
Branch Code : 2 M.E. Computer Engineering (Semester I)											
710201	Computer Algorithm	4	0	2	5	60	10	20	10	100	2
710202	Advanced Computer Graphics	4	0	2	5	60	10	20	10	100	2
710203	Information Theory and Coding	3	2	0	4	60	10	20	10	100	2
710001	Communication and Research Skills	2	2	0	3	60	0	20	20	100	2
710204	Computer Graphics (Int.Elective)	3	0	2	4	60	10	20	10	100	2
710205	Internet Technology(Int.Elective)	3	0	2	4	60	10	20	10	100	2
710206	Wireless Computer Networks (Elective)	3	0	2	4	60	10	20	10	100	2
710207	Parallel Computing (Elective)	3	0	2	4	60	10	20	10	100	2
710208	Advanced Data Sturcture (Elective)	3	0	2	4	60	10	20	10	100	2
Branch Code : 3 M.E. Instrumentation and Control (Applied Instrumentation) (Semester I)											
710301	Control Engineering	4	0	0	4	60	0	20	20	100	3
710302	Advance Microcontroller	4	0	2	5	60	10	20	10	100	3
710303	PID Controller	3	0	0	3	60	0	20	20	100	3
710001	Communication and Research Skill	2	2	0	3	60	0	20	20	100	3
710304	CAD for Control Systems	0	0	2	1	0	80	0	20	100	3
710305	Programmable Logic Controller (Int.Elective)	3	0	2	4	60	10	20	10	100	3
710306	Mechatronics (Int.Elective)	3	0	2	4	60	10	20	10	100	3
710307	Switch Mode Power Supply (Elective)	4	0	2	5	60	10	20	10	100	3
710308	Artificial Intelligence (Elective)	4	0	2	5	60	10	20	10	100	3
710309	Industrial Data Communication (Elective)	4	0	2	5	60	10	20	10	100	3

Branch Code : 7 M.E. Electrical Engineering (Semester I)											
710701	Power System Modelling & Simulation	3	0	0	3	60	0	20	20	100	7
710702	Advanced Power Electronics	3	0	0	3	60	0	20	20	100	7
710703	Modern Control System	3	0	0	3	60	0	20	20	100	7
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	7
710704	Simulation Laboratory	0	0	4	2		80		20	100	7
710705	Core Laboratory I	0	0	4	2		80		20	100	7
710706	Energy Management (Elective)	3	0	2	4	60	10	20	10	100	7
710707	Modern Power System Protection (Power Group) (Elective)	4	0	2	5	60	10	20	10	100	7
710708	Nonlinear control systems (Control Group) (Elective)	4	0	2	5	60	10	20	10	100	7
710709	Electrical Drives (Power Electronics Group) (Elective)	4	0	2	5	60	10	20	10	100	7
710710	Advanced Micro. Architecture (Micro Group) (Elective)	4	0	2	5	60	10	20	10	100	7
Branch Code : 8 M.E. Mechanical (CAD/CAM) (Semester I)											
710801	Advanced Machine Design	4	0	0	4	60	0	20	20	100	8
710802	Computer Aided Machine Design	4	0	0	4	60	0	20	20	100	8
710803	Computer Aided Production Management	4	0	0	4	60	0	20	20	100	8
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	8
710804	CAD & Solid Modeling Lab	0	0	4	2	0	80	0	20	100	8
710805	CAPM & Programming Lab	0	0	2	1	0	80	0	20	100	8
710806	Mechanical Engineering for Mechatronics (Elective)	3	0	2	4	60	10	20	10	100	8
710807	Advanced Materials and Processes (Elective)	3	0	0	3	60	0	20	20	100	8
710808	Material Science and Materials (Elective)	3	0	0	3	60	0	20	20	100	8
Branch Code : 9 M.E. Mechanical (Machine Design) (Semester I)											
710901	Theory of Elasticity	4	0	0	4	60	0	20	20	100	9
710902	Dynamics of Machinery	4	0	2	5	60	10	20	10	100	9
710903	Engineering Optimization	3	2	0	4	60	10	20	10	100	9
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	9
710904	Optimization Techniques (Int. Elective)	3	2	0	4	60	10	20	10	100	9
710905	Tribology (Elective)	4	0	2	5	60	10	20	10	100	9
710906	Robust Design (Elective)	4	0	2	5	60	10	20	10	100	9

Branch Code : 13 M.E. Civil (Transportation Engineering) (Semester I)											
711301	Urban Transportation Systems Planning	4	2	0	5	60	10	20	10	100	13
711302	Traffic Engineering -1	4	0	2	5	60	10	20	10	100	13
711303	Highway Materials and Construction	4	0	2	5	60	10	20	10	100	13
710001	Communication and Research Skills	2	2	0	3	60	0	20	20	100	13
711304	Basics of Transportation Engineering (Elective)	3	2	0	4	60	10	20	10	100	13
711305	Statistics and Optimization Techniques (Elective)	3	0	0	3	60	0	20	20	100	13
711306	Decision Models in Management (Elective)	3	0	0	3	60	0	20	20	100	13
711307	Public Transportation Planning (Elective)	3	0	0	3	60	0	20	20	100	13
711308	Highway Geometric Design (Elective)	3	0	0	3	60	0	20	20	100	13
Branch Code : 14 M.E. Construction Engineering & Management (Semester I)											
711401	Construction Management	3	2	0	4	60	10	20	10	100	14
711402	Construction Techniques	3	2	0	4	60	10	20	10	100	14
711403	Statistical and Numerical Analysis	3	2	0	4	60	10	20	10	100	14
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	14
711404	Disaster management (Elective)	3	2	0	4	60	10	20	10	100	14
711405	Energy management (Elective)	3	2	0	4	60	10	20	10	100	14
711406	Construction Finance & Accounting (Elective)	4	2	0	5	60	10	20	10	100	14
711407	TQM in Construction (Elective)	4	2	0	5	60	10	20	10	100	14
Branch Code : 15 M.E. Civil (CASAD) (Semester I)											
711501	Matrix Analysis of Framed Structures	4	0	0	4	60	0	20	20	100	15
711502	Structural Dynamics and Earthquake Engineering	4	0	0	4	60	0	20	20	100	15
711503	Advanced Solid Mechanics	4	0	0	4	60	0	20	20	100	15
710001	Communication and Research Skills	2	2	0	3	60	0	20	20	100	15
711504	CASAD LAB-I	0	0	2	1	0	80	0	20	100	15
711505	Cement & Concrete Lab	0	0	2	1	0	80	0	20	100	15
711506	Basics of Reinforced Concrete and Masonry Construction (Elective)	3	0	2	4	60	10	20	10	100	15
711507	Numerical Methods (Elective)	3	2	0	4	60	10	20	10	100	15
711508	Prestressed Concrete (Elective)	3	2	0	4	60	10	20	10	100	15
711509	Fracture Mechanics (Elective)	3	2	0	4	60	10	20	10	100	15

Branch Code : 16 M.E. Chemical Engineering (Computer Aided Process Design) (Semester I)											
711601	Advanced Thermodynamics	4	0	0	4	60	0	20	20	100	16
711602	Advanced Kinetics & Reaction Engineering	4	0	0	4	60	0	20	20	100	16
711603	Computerized Process Control	3	0	2	4	60	10	20	10	100	16
710001	Communication & Research Skills	2	2	0	3	60		20	20	100	16
711604	Advanced Computational Techniques for Research	0	0	4	2		80		20	100	16
711605	Cleaner Production in Chemical Industries (Elective)	3	2	0	4	60	10	20	10	100	16
711606	Energy and Mass Integration (CAD Group) (Elective)	4	0	0	4	60	0	20	20	100	16
711607	Polymer Science & Synthesis of Polymers (Polymer Group) (Elective)	4	0	0	4	60	0	20	20	100	16
Branch Code : 17 M.E. Environmental Engineering (Semester I)											
711701	Principles of Water Treatment	4	0	2	5	60	10	20	10	100	17
711702	Environmental Chemistry	4	0	2	5	60	10	20	10	100	17
711703	Environmental Microbiology	3	0	2	4	60	10	20	10	100	17
710001	Communication & Research Skills	2	2	0	3	60		20	20	100	17
711704	Environmental Impact Assessment for Engineering Projects (Elective)	3	0	2	4	60	10	20	10	100	17
711705	Advances in Environmental Laboratories (Elective)	3	0	2	4	60	10	20	10	100	17
711706	Environmental Sanitation (Elective)	3	0	2	4	60	10	20	10	100	17
Branch Code : 18 M.E. Environmental Management (Semester I)											
711801	Air Pollution Control and Management	4	0	2	5	60	10	20	10	100	18
711802	Industrial Wastewater Management	4	0	2	5	60	10	20	10	100	18
711803	Municipal and Hazardous Solid Waste Management	4	0	0	4	60	0	20	20	100	18
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	18
711804	Environmental Impact Assessment (Elective)	3	2	0	4	60	10	20	10	100	18
711805	Ground water Hydrology & contamination (Elective)	3	2	0	4	60	10	20	10	100	18
711806	Water and waste water Treatment Technologies (Elective)	3	2	0	4	60	10	20	10	100	18

Branch Code : 19 M.E. Transportation System Engineering (Semester I)											
711901	Modeling, Analysis & Simulation	3	0	2	4	60	10	20	10	100	19
711902	Traffic Engineering & Field Studies	4	0	2	5	60	10	20	10	100	19
711903	Highway Materials & Testing	3	0	2	4	60	10	20	10	100	19
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	19
711904	Transportation and Environments (Elective)	3	0	2	4	60	10	20	10	100	19
711905	Applied Statistics (Elective)	3	0	2	4	60	10	20	10	100	19
711906	Airport Planning and Design (Elective)	4	2	0	5	60	10	20	10	100	19
711907	Highway Geometric Design (Elective)	4	2	0	5	60	10	20	10	100	19
711908	Pavement System Management (Elective)	4	2	0	5	60	10	20	10	100	19
Branch Code : 20 M.E. (Civil) Structural Engineering (Semester I)											
712001	Advanced Structural Analysis	4	0	0	4	60	0	20	20	100	20
712002	Structural Dynamics	4	0	0	4	60	0	20	20	100	20
712003	Theory Of Elasticity & Stability	4	0	0	4	60	0	20	20	100	20
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	20
712004	Computer Lab for Analysis	0	0	4	2	0	80	0	20	100	20
712005	Basic Concepts Of Structural Behaviour	3	2	0	4	60	10	20	10	100	20
712006	Numerical Methods	3	2	0	4	60	10	20	10	100	20
712007	Prestressed Concrete	3	2	0	4	60	10	20	10	100	20
Branch Code : 21 M.E. Mechanical (Thermal Engineering) (Semester I)											
712101	Applied Thermodynamics & HeatTransfer	4	0	0	4	60	0	20	20	100	21
712102	Advanced Refrigeration	4	0	2	5	60	10	20	10	100	21
712103	Fluid Mechanics & Gas Dynamics	4	0	2	5	60	10	20	10	100	21
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	21
712104	Combustion Engineering (Major Elective 1)	3	2	0	4	60	10	20	10	100	21
712105	Cryogenic Heat Exchangers(Major Elective 1)	3	2	0	4	60	10	20	10	100	21
712106	Modeling Simulation & Computer Application (Int.Elective)	3	2	0	4	60	10	20	10	100	21

Branch Code : 22 M.E. Digital Communication (Semester I)											
710401	Statistical Signal Analysis	3	2	0	4	60	10	20	10	100	22
710402	Information Theory and Coding	4	0	2	5	60	10	20	10	100	22
710403	ASIC Design	4	0	2	5	60	10	20	10	100	22
710001	Communication & Research Skills	2	2	0	3	60	0	20	20	100	22
710404	Image Processing (Elective)	3	0	2	4	60	10	20	10	100	22
710405	Fiber Optic Communication (Elective)	3	0	2	4	60	10	20	10	100	22
710406	Speech Processing (Elective)	3	0	2	4	60	10	20	10	100	22
710407	Biomedical Signal Processing (Elective)	3	0	2	4	60	10	20	10	100	22
710408	Computer Vision (Elective)	3	0	2	4	60	10	20	10	100	22
710409	Embedded System Design (Elective)	3	0	2	4	60	10	20	10	100	22
710410	Introduction to Artificial Intelligence (Elective)	3	0	2	4	60	10	20	10	100	22
710411	RF and Microwave Engineering (Elective)	3	0	2	4	60	10	20	10	100	22
710412	Digital VLSI Design (Elective)	3	0	2	4	60	10	20	10	100	22
710413	RF Microelectronics (Elective)	3	0	2	4	60	10	20	10	100	22
710414	Optimization Techniques (Elective)	3	2	0	4	60	10	20	10	100	22
710415	Applied Linear Algebra in Engineering (Elective)	3	2	0	4	60	10	20	10	100	22
710416	Adaptive signal Processing (Elective)	3	2	0	4	60	10	20	10	100	22
710417	Microelectronics chip fabrication (Elective)	3	2	0	4	60	10	20	10	100	22
710418	Satellite communication (Elective)	3	2	0	4	60	10	20	10	100	22
710419	Antenna Engineering and Design (Elective)	3	0	2	4	60	10	20	10	100	22
710420	Peripheral System Design & Interfacing (Elective)	3	0	2	4	60	10	20	10	100	22
710421	Computer Aided Design for VLSI (Elective)	3	0	2	4	60	10	20	10	100	22
710422	Digital Signal Processing and Applications (Elective)	3	0	2	4	60	10	20	10	100	22
710423	Neuro Computing and Applications (Elective)	3	2	0	4	60	10	20	10	100	22
710424	Machine Learning (Elective)	3	2	0	4	60	10	20	10	100	22
710425	Robotics and Intelligent Systems (Elective)	3	2	0	4	60	10	20	10	100	22
710426	Linear System Theory (Elective)	3	2	0	4	60	10	20	10	100	22
710427	Soft Computing Technique and its Application in Engineering (Elective)	3	0	2	4	60	10	20	10	100	22
710428	Recent topics in Modern Communication Engineering (Elective)	3	2	0	4	60	10	20	10	100	22
710601	Wireless and Mobile Communication (Elective)	3	2	0	4	60	10	20	10	100	22
712201	Detection And Estimation Theory (Elective)	3	2	0	4	60	10	20	10	100	22
712202	Digital Telephony & Switching Networks(Elective)	3	2	0	4	60	10	20	10	100	22