GUJARAT TECHNOLOGICAL UNIVERSITY

Computer Engineering (Software Engineering) (02)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710210	Numerical methods for Computer Engineering **	3	2	0	4	70	30	30	0	10	10	150
2710201	Computer Algorithm	3	2#	2	5	70	30	20	10	10	10	150
2710209	Wireless Communication	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2710213	Distributed Operating System
2710211	Information Security
2710212	Artificial Intelligence

Instrumentation and Control (Applied Instrumentation) (03)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710310	Optimization Techniques for Engineers**	3	2	0	4	70	30	30	0	10	10	150
2710311	Embedded system for Instrumentation	3	2#	2	5	70	30	20	10	10	10	150
2710312	Intelligent Systems and Control	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2710313	Advance Industrial Drives and Control
2710314	Data Structure with Object oriented programming

Electronics & Communication (Communication Systems Engg) (05)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710501	Digital Signal Processing Algorithms**	3	0	2	4	70	30	20	10	10	10	150
2710502	Information Theory & Coding	4	2#	2	6	70	30	20	10	10	10	150
2710503	Fiber Optic Communication	4	2#	2	6	70	30	20	10	10	10	150
	Major Elective - I	3	0	2	4	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**22**							

Major Elective I	
2710504	RF and Microwaves
2710505	Telecom Switching System, Networks and Network Management
2710506	Advanced Image Processing
2710507	ASIC Design

Electrical Engineering (07)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710710	Applied Linear Algebra**	3	2	0	4	70	30	30	0	10	10	150
2710711	Computer methods in power system analysis	3	2#	2	5	70	30	20	10	10	10	150
2710702	Power Electronics	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I		Group
2710707	Advanced Power System Protection and Switchgear	Power System Group
2710709	Electrical Drives	Power Electronics Group
2710712	Instrumentation	Automation and Control Group

Mechanical (CAD/CAM) (08)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2710802	Computer Aided Design	3	0	4#	5	70	30	20	10	10	10	150
2710801	Advanced Machine Design	4	2#	0	5	70	30	30	0	10	10	150
	Major Elective - I	4	0	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2710808	Advanced Metrology and Experimental Techniques
2710807	Advanced Materials Processing Techniques
2710809	Mechatronics

Mechanical (Machine Design) (09)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2710802	Computer Aided Design	3	0	4#	5	70	30	20	10	10	10	150
2710801	Advanced Machine Design	4	2#	0	5	70	30	30	0	10	10	150
	Major Elective - I	4	0	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2710907	Advanced Engineering Dynamics
2710908	Vibration and Noise
2710809	Mechatronics

Mechanical (Cryogenic Engineering) (10)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2711001	Cryogenic Fundamentals	3	2#	2	5	70	30	20	10	10	10	150
2711002	Vacuum Engineering	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711003	Advanced Refrigeration

Mechanical (I.C. Engine & Automobile Engineering) (11)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2711101	Advanced Thermodynamics & Heat Transfer	4	2#	0	5	70	30	30	0	10	10	150
2711103	Advanced Fluid Mechanics	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	4	2	0	5	70	30	30	0	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711107	Automobile Refrigeration & A/C
2711108	Combustion Engineering
2711109	Computational Fluid Dynamics
2711110	Alternate Fuels and Energy

Civil (Transportation Engineering) (13)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2711304	Numerical Methods and Statistical Analysis**	3	2	0	4	70	30	30	0	10	10	150
2711302	Traffic Engineering	3	2#	2	5	70	30	20	10	10	10	150
2711301	Urban Transportation System Planning	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711305	Environment Impact Assessment of Transportation Project
2711306	Rail Transportation System Planning and Design

Civil (Construction Engineering and Management) (14)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2711304	Numerical methods and Statistical analysis**	3	2	0	4	70	30	30	0	10	10	150
2711401	Construction project Management	4	2#	0	5	70	30	30	0	10	10	150
2711402	Construction Techniques	4	2#	0	5	70	30	30	0	10	10	150
	Major Elective - I	4	2	0	5	70	30	30	0	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711406	Construction Finance and Accounting
2711407	Quality control and Safety Management in Construction

Chemical Engineering (Computer Aided Process Design) (16)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2711608	Chemical System Modeling & Simulation (CSMS) **	3	2	0	4	70	30	30	0	10	10	150
2711601	Advanced Thermodynamics (ATH)	3	2#	0	4	70	30	30	0	10	10	150
2711603	Computerised Process Control (CPC)	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	0	4	70	30	30	0	20	0	150
2711604	Advanced Computational Techniques for Research Lab	0	0	4	2	0	0	50	30	20	0	100
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711606	Energy & Mass Integration (EMI)
2711607	Polymer Science & Synthesis of Polymers (PSSP)

Environmental Engineering (17)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2711701	Application based systems for Transport of Water & Wastewater**	3	2	0	4	70	30	30	0	10	10	150
2711702	Environmental Chemistry & Microbiology	3	2#	2	5	70	30	20	10	10	10	150
2711707	Water & wastewater Technologies	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711708	Environmental Impact Assessment
2711705	Advances in Environmental Laboratories

Environmental Management (18)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2711801	Application based systems for Air Pollution Control Management**	3	2	0	4	70	30	30	0	10	10	150
2711803	Municipal & Hazardous Solid Waste Management	3	2#	2	5	70	30	20	10	10	10	150
2711808	Water & wastewater Technologies	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711805	Ground Water Hydrology & Contamination
2711807	Industrial Hygine & Safety

Civil (Structural Engineering) (20)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2713301	Numerical Methods for Civil Engineering**	3	2	0	4	70	30	30	0	10	10	150
2712001	Matrix Methods of Structural Analysis	3	2#	2	5	70	30	20	10	10	10	150
2712008	Advanced Design of Concrete Structures	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2712009	Advanced Foundation Engineering
2712010	Advanced Solid Mechanics

Mechanical (Thermal Engineering) (21)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2711101	Advanced Thermodynamics & Heat Transfer	4	2#	0	5	70	30	30	0	10	10	150
2711103	Advanced Fluid Mechanics	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	4	2	0	5	70	30	30	0	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2712107	Thermal and Nuclear Power Plants
2712108	Hydrogen & Fuel Cell Technology
2712109	Renewable Energy Engineering
2712110	Jet Propulsion & Air-Craft Engineering

Information Technology (23)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710210	Numerical methods for Computer Engineering **	3	2	0	4	70	30	30	0	10	10	150
2710201	Computer Algorithm	3	2#	2	5	70	30	20	10	10	10	150
2710209	Wireless Communication	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2712308	Image Processing
2712309	Data Mining
2710211	Information Security

Plastic Engineering (24)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2712408	Plastics Mould&Product design simulations**	4	0	2	5	70	30	30	0	10	10	150
2712401	Plastics Materials	3	2#	0	4	70	30	20	10	10	10	150
2712402	Plastics Processing Technology	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective - I	4	2	0	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2712405	Biodegradable Plastics
2712407	Polymer Blends and alloys

Textile Engineering (25)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2712507	Statistical Techniques and Design of Experiment **	3	2	0	4	70	30	30	0	10	10	150
2712508	Theory of Yarn Structures	3	2#	2	5	70	30	20	10	10	10	150
2712502	Theory and Design of Textile Machine I	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2712509	Textured Yarn Technology
2712510	Modern Fiber Technology

Electronics & Communication (Signal Processing And VLSI Technology) (26)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710501	Digital Signal Processing Algorithms**	3	0	2	4	70	30	20	10	10	10	150
2712602	CMOS Circuit Design – I	4	2#	2	6	70	30	20	10	10	10	150
2712605	Physics of MOS Transistor	4	2#	2	6	70	30	20	10	10	10	150
	Major Elective - I	3	0	2	4	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**22**							

Major Elective I	
2712608	Digital Signal Processors :Architecture and Programming
2712606	Wavelet Transform and Applications

Electronics & Communication (Wireless Communication Systems & Networks) (27)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2712704	First Course in Optimization Techniques**	3	2	0	4	70	30	30	0	10	10	150
2712701	Wireless Communication Networks	4	**0**	2#	5	70	30	20	10	10	10	150
2712702	3G and 4G Mobile Communication	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective - I	4	**2#**	2	6	70	30	20	10	**10**	**10**	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**22**							

Major Elective I	
2710502	Information Theory & Coding
2712706	RF Circuit Design
2710503	Fiber Optic Communication

Mechanical (Production Engineering) (28)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2712801	Advance Casting Technology	3	2#	2	5	70	30	20	10	10	10	150
2712806	Advance Material Technology	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2712807	Advance Machine Tool Design
2712802	Machining Science
2712808	Reliability & Failure Analysis

Power Electronics (29)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2712909	Higher Engineering Mathematics**	3	2	0	4	70	30	30	0	10	10	150
2712908	Power Converters-I	3	2#	2	5	70	30	20	10	10	10	150
2712904	Control System Theory	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2712910	Discrete Time Signal Processing
2712911	Soft Computing Techniques for Intelligent Control

Chemical Engineering (30)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2713007	Numerical Methods and Statistical Analysis for Chemical Engineering **	3	2	0	4	70	30	30	0	10	10	150
2713008	Advanced Reaction Engineering	3	2#	2	5	70	30	20	10	10	10	150
2713009	Advanced transport Processes	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2713010	Advanced Equipment Design
2713004	Petroleum Refinery Engineering
2713011	Membrane Separation Processes
2713012	Modern Petrochemical Technology

Bio Medical Engineering (31)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2713107	Statistics for Biomedical Engineers **	3	2	0	4	70	30	30	0	10	10	150
2713108	Medical Instrumentation & Systems	3	2#	2	5	70	30	20	10	10	10	150
2713109	Biomedical Signal Processing	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2713102	Biosensors & BioMEMs
2713110	Advance Biomaterials
2713111	Digital System Design

Civil (Water Resources Engineering) (33)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2713301	Numerical Methods for Civil Engineering**	3	2	0	4	70	30	30	0	10	10	150
2713302	Hydrology and watershed management	3	2#	2	5	70	30	20	10	10	10	150
2713303	Advanced fluid mechanics	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2713304	Remote sensing and its application
2713305	Hydropower engineering
2713306	Water supply and drainage

Energy Engineering (39)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2713901	Energy Resources, Economics & Environment	4	2#	0	5	70	30	30	0	10	10	150
2713902	Energy Conversion Systems	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	4	2#	0	5	70	30	30	0	10	10	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2711101	Advanced Thermodynamics and Heat Transfer

Rubber Engineering (40)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2714007	Modelling & Simulation of Rubber Processing (MSRP) **	3	2	0	4	70	30	30	0	10	10	150
2714002	Mixing of Rubbers (MR)	3	2#	2	5	70	30	20	10	10	10	150
2714003	Rubber Cultivation & Rubber Lattices (RCRL)	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2714008	Rubber Bonding & its Technology (RB&T)
2714009	Rubber Processing Equipment Design (RPED)

Electronics & Communication (Signal Processing & Communication) (41)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2714105	Probability and Random Process **	3	2	0	4	70	30	30	0	10	10	150
2714106	Digital Modulation and Coding	3	2#	2	5	70	30	20	10	10	10	150
2714107	Signal Analysis and Transform	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2714104	Digital Image Processing
2714108	Communication Systems

Electronics & Communication (VLSI System Design) (42)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code		Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710501	Digital Signal Processing Algorithms**	3	0	2	4	70	30	20	10	10	10	150
2712602	CMOS Circuit Design I	4	2#	2	6	70	30	20	10	10	10	150
2712605	Physics of MOS Transistor	4	2#	2	6	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**23**							

Major Elective I	
2714202	Foundation of VLSI CAD
2714203	Embedded System Design

Civil (Geotechnical Engineering) (43)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2713301	Numerical Methods for Civil Engineering**	3	2	0	4	70	30	30	0	10	10	150
2714301	Advanced Geotechnical Engineering	3	2#	2	5	70	30	20	10	10	10	150
2714303	Theory of elasticity and plasticity	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2714306	Soil Improvement Technology
2714302	Soil Dynamics and Machine Foundations

Electronics & Communication (Wireless Communication Technology) (44)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2712704	First Course in Optimization Techniques**	3	2	0	4	70	30	30	0	10	10	150
2714401	Wireless Communication Theory	4	2#	2	6	70	30	20	10	10	10	150
2710501	Digital Signal Processing Algorithms	3	0	2#	4	70	30	20	10	10	10	150
	Major Elective - I	4	2#	2	6	70	30	20	10	10	10	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**22**							

Major Elective I	
2710502	Information Theory & Coding
2714407	Advance Wireless Communication
2714406	Telecommunication Switching and Networks

Power Electronics & Electrical Drives (45)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710710	Applied Linear Algebra**	3	2	0	4	70	30	30	0	10	10	150
2714501	Power Electronics-I	4	0	2#	5	70	30	20	10	10	10	150
2714502	Solid State DC Drives	4	2#	2	6	70	30	20	10	10	10	150
	Major Elective - I	3	2	0	4	70	30	30	0	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2714504	Modeling and Analysis of Electrical Machines
2714505	Power Conditioning

Mechanical (Industrial Engineering) (46)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2714601	Statistics for Engineers	3	2#	2	5	70	30	20	10	10	10	150
2714602	Work System Design and Human Factors Engineering	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2714607	Advance Production and Operations Management
2714604	Project Management and Practices
2714608	Value Engineering and Analysis

Mechatronics (47)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2714701	Concepts in Mechatronics Engineering	4	0	2#	5	70	30	20	10	10	10	150
2714703	Sensor Technology	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	4	0	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2714702	Advance Control Systems

Civil (Town & Country Planning) (48)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2711304	Numerical Methods & Statistical Analysis**	3	2	0	4	70	30	30	0	10	10	150
2714801	Planning History & Theory	3	2#	2	5	70	30	20	10	10	10	150
2714802	Urban Housing	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2714803	Infrastructure and Transportation Planning
2714807	Urban Land Management
2714809	Project Planning and Appraisal

Mechanical (Advance Manufacturing System) (50)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710002	Computational Method for Mechanical Engineering**	3	2	0	4	70	30	30	0	10	10	150
2715002	CAD CAM Systems	3	2#	2	5	70	30	20	10	10	10	150
2715005	Production and Operations Management	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2715006	Computer Integrated Manufacturing Systems
2715003	Advance Manufacturing Processes

Electronics & Communication (Embedded System) (54)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2712704	First Course in Optimization Techniques**	3	0	2	4	70	30	20	10	10	10	150
2715401	ARM Processor Architecture and System Design	3	2#	2	5	70	30	20	10	10	10	150
2715402	Real Time Operating System Fundamentals	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2715403	Electronic System Design
2715410	Advanced Digital Circuit Design

Computer Engineering (Systems and Network Security) (56)

w.e.f. July 2014

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2710210	Numerical methods for Computer Engineering **	3	2	0	4	70	30	20	10	10	10	150
2715601	Cryptography and Network Security	3	2#	2	5	70	30	20	10	10	10	150
2710209	Wireless Communication	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - I	3	2	2	5	70	30	20	10	20	0	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2710213	Distributed Operating System
2712309	Data Mining
2710201	Computer Algorithm

Packaging Technology (58)

w.e.f. July 2017

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
715801	Numerical Methods and Design of Experiments**	3	2	0	4	70	30	20	10	10	10	150
715802	Packaging Materials	3	2#	2	5	70	30	20	10	10	10	150
715803	Packaging Principles and Processes	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective I	3	2#	2	5	70	30	20	10	20	0	150
2710001	Research Skill	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
715804	Materials Management
715805	Printing Technology for Packaging
715806	Robotics and Automated Packaging

Computer Engineering (Cyber Security) (59)

w.e.f. July 2017

Semester I						Theory Marks		Tutorial/ Practical Marks				Total Marks
Subject Code	Subject Name	Theory	Tutorial/ Presentation	Practical	Credits	ESE(E)	PA (M)	ESE(V)		PA(I)		
								ESE	OEP	PA	RP	
2715901	Mathematical Foundation for Cyber Security**	3	2	0	4	70	30	20	10	10	10	150
2715902	Operating System and Host Security	4	0	2#	5	70	30	20	10	10	10	150
2715903	Introduction to Cryptography	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective I	4	0	2#	5	70	30	20	10	10	10	150
2710001	Research Skills	1	2	0	2	0	0	80	0	20	0	100
	Total Credits				**21**							

Major Elective I	
2715904	Cyber Forensic and Incident Response
2715905	Cyber Crimes , Ethics and Laws
2715906	Cyber Security: Administration and Management

RP: Review Presentation
OEP: Open Ended Problems

The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I & Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) of the students in the beginning of the semester i.e. within 10 days. The same list will be uploaded on GTU website within the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 research papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks to institutes only after uploading of the best 3 presentations of the students. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website.

** Every Student should be allocated a chapter each and find Engineering applications for that chapter. He/ She should prepare a write up including graphics/pictures/video to illustrate the application. These should be submitted online to GTU. The write up should give proper references along with a certificate that it was not plagiarized material. GTU will put it on the web for all to use.