

GUJARAT TECHNOLOGICAL UNIVERSITY

Computer Engineering (Software Engineering) (02)

w.e.f Jan 2015

Semester II						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	
2722301	Service Oriented Architecture	3	2#	0	4	70	30	30	0	10	10	150
2720207	Distributed Computing and Applications	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2720208	Image Processing
2720209	Data Mining and Data Warehousing
2720210	Global Information & Positioning System

Major Elective III

2720211	Software Project Management
2720212	Embedded System
2720213	Advance Operating System

Open Elective

2720214	Internet Technology
2720215	OOP with Java

Instrumentation and Control (Applied Instrumentation) (03)

w.e.f Jan 2015

Semester II						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	
2720312	Intelligent Sensors and Instrumentation	3	2#	2	5	70	30	20	10	10	10	150
2720301	Digital Control	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				24							

Major Elective II

[2720313](#) System Dynamics and Modelling

[2720314](#) Advance VLSI Design

Major Elective III

[2720315](#) Advance Signal Processing & Estimation

[2720316](#) Data Base Management System

Open Elective

[2720317](#) Programmable Logic Controller

Electronics & Communication (Communication Systems Engg) (05)

w.e.f Jan 2015

Semester II						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	
2720501	Statistical Signal Analysis	3	2#	0	4	70	30	30	0	10	10	150
2720502	Wireless and Mobile Communication	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2720503	Antenna Engg. Design
2720504	Speech Signal Processing
2720505	Adaptive Signal Processing
2720511	CMOS Circuit Design – I
Major Elective III	
2720506	Satellite Communication
2720507	Data Communication and Networking
2720508	Linear System Theory
2722710	Neuro Computing and Applications
Open Elective	
2720509	Computer Networks
2720510	Introduction to Artificial Intelligence

Electrical Engineering (07)

w.e.f Jan 2015

Semester II						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	
2720714	Modern Control Systems	3	2#	0	4	70	30	30	0	10	10	150
2720715	Electrical Machine Modeling and Analysis	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II		Group
2720716	FACTS	Power System Group
2720717	Power System Management & Optimization	Power System Group
2720709	Advanced Power Convertors	Power Electronics Group
2720704	Digital Control System	Power Electronics Group
2720718	Non-linear Control System	Automation and Control Group

Major Elective III		Group
2720719	Artificial Intelligent application to Power System	Power System Group
2720720	Power System Transients	Power System Group
2720721	Application of Power Electronics to Power System	Power Electronics Group
2720722	Industrial Electronics and Instrumentation	Power Electronics Group
2720723	Adaptive Control	Automation and Control Group
2720724	Robotics and Automation	Automation and Control Group
Open Elective		
2720725	Economics of Energy Generation & Supply	
2720726	Digital Signal Processing for Power Electronics	

Mechanical (CAD/CAM) (08)

w.e.f Jan 2015

Semester II						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	
2720802	Computer Aided Manufacturing	3	0	2#	4	70	30	20	10	10	10	150
2720801	Finite Element Methods	3	0	4#	5	70	30	20	10	10	10	150
	Major Elective - II	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective - III	3	0	2#	4	70	30	20	10	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2720813	Computer Aided Process Planning
2720814	Computer Aided Production Management
2720815	Computer Integrated Manufacturing
Major Elective III	
2720816	Design for Manufacturing and Assembly
2720817	Noise and Vibrations Analysis
2720819	Artificial Intelligence
2720820	Multibody Dynamics
2720821	Engineering Optimization
Open Elective	
2720822	CAD / CAM Systems

Mechanical (Machine Design) (09)

w.e.f Jan 2015

Semester II						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	
2720910	Advanced Mechanism Design	3	0	2#	4	70	30	20	10	10	10	150
2720801	Finite Element Methods	3	0	4#	5	70	30	20	10	10	10	150
	Major Elective - II	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective - III	3	0	2#	4	70	30	20	10	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

[2720911](#) Tribology

[2720903](#) Machine Tool Design

[2720912](#) Stress Analysis

Major Elective III

[2720816](#) Design for Manufacturing and Assembly

[2720914](#) Rotor Dynamics

[2720821](#) Engineering Optimization

[2720820](#) Multibody Dynamics

Open Elective

[2720915](#) Product Design

Mechanical (Cryogenic Engineering) (10)

w.e.f Jan 2015

Semester II						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	
2721001	Cryogenic System	3	2#	0	4	70	30	30	0	10	10	150
2721002	Cryogenic Plants and Equipments	4	0	2#	5	70	30	20	10	10	10	150

	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2721003	Advanced Air conditioning
Major Elective III	
2721007	Low Temperature Measurement and Instrumentation
Open Elective	
2721008	Energy Economics and Management

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

w.e.f Jan 2015

Semester II						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	
2721108	Experimental Techniques and Instrumentations in Automobile Engineering	3	0	2#	4	70	30	20	10	10	10	150
2721109	Fundamentals of I.C Engine and Automobile	3	0	4#	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2721106	Automobile Maintenance and Pollution Control
2721103	Modern Vehicle Design
2721110	Vehicle Dynamics
Major Elective III	
2721105	High Speed Diesel Engine
2722111	Design and Optimization of Thermal System
2721104	Automotive Chassis & Body Engineering
Open Elective	
2721008	Energy Economics and Management

Civil (Transportation Engineering) (13)

w.e.f Jan 2015

Semester II						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	
2721307	Economical Evaluation of Transportation Projects	3	2#	0	4	70	30	30	0	10	10	150
2721302	Pavement Design, Construction and Evaluation	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2721312	Airport System Planning and Design
2721303	Regional and Mass Transportation System Planning
2721313	Advances in Transportation Engineering
Major Elective III	
2721309	Transportation System Management
2721314	Decision Models in Management
2721315	Behavioral Travel Modeling
Open Elective	
2721316	Basics of Transportation Engineering
2721311	Geo spatial Techniques

Civil (Construction Engineering and Management) (14)

w.e.f Jan 2015

Semester II						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	
2721401	Advanced Civil Engineering Materials	3	2#	0	4	70	30	30	0	10	10	150
2721402	Resources Management	4	2#	0	5	70	30	30	0	10	10	150
	Major Elective - II	4	2#	0	5	70	30	30	0	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2721403	Construction Contract Management
2721404	Project Risk Analysis and mitigation techniques

Major Elective III

2721405	Value Engineering
2721409	Smart Material and Smart Structure
2721410	Ecofriendly Construction

Open Elective

2721407	Strategic Management
2721411	Energy management
2721412	Disaster Management

Chemical Engineering (Computer Aided Process Design) (16)

w.e.f Jan 2015

Semester II						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	
2721602	Chemical Process Optimization (CPO)	3	2#	0	4	70	30	30	0	10	10	150
2721609	Advanced Kinetics and Reaction Engineering (AKRE)	3	2#	0	4	70	30	30	0	10	10	150
	Major Elective - II	3	0	2#	4	70	30	20	10	10	10	150

	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
2721611	Process Plant Simulation Lab	0	0	4	2	0	0	50	30	20	0	100
	Total Credits				23							

Major Elective II	
2721601	Industrial Biotechnology (IB)
2721607	Polymer Materials & Testing (PMT)
Major Elective III	
2721604	Property Prediction for Mixtures (PPM)
2721605	Polymer Processing (PP)
Open Elective	
2721610	Cleaner Production in Chemical Industries (CPCI)

Environmental Engineering (17)

w.e.f Jan 2015

Semester II						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	
2721702	Industrial water & Wastewater Treatment	3	2#	0	4	70	30	30	0	10	10	150
2721710	Air & Noise Pollution Control	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2721711	Industrial hygiene and Safety
2721712	Environmental Monitoring
Major Elective III	
2721713	Solid and Hazardous Waste Management
2721714	Membrane Technology
Open Elective	
2721715	Climate Change

Environmental Management (18)

w.e.f Jan 2015

Semester II						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	
2721802	Treatment Process Design and Drawing	3	2#	2	5	70	30	20	10	10	10	150
2721801	Environmental Impact Assessment	3	2#	0	4	70	30	30	0	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

[2721806](#) Environmental Modeling

[2721805](#) Environmental monitoring and statistics

Major Elective III

[2721803](#) Environmental Legislation

[2721804](#) Environmental Risk Assessment and Management

Open Elective

[2721808](#) Environmental Audit and Legislation

Civil (Structural Engineering) (20)

w.e.f Jan 2015

Semester II						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	
2722001	Finite Element Method in Structural Engineering	3	2#	0	4	70	30	30	0	10	10	150
2722010	Structural Dynamics and Earthquake Engineering	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2722007	Advanced Design of Steel Structures
2722011	Prestressed Concrete
Major Elective III	
2722012	Structural Optimization
2722013	Plates and Shell
Open Elective	
2722014	Disaster management and mitigation
2722015	Advances in Concrete Technology and Sustainable Construction Practices

Mechanical (Thermal Engineering) (21)

w.e.f Jan 2015

Semester II						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	
2722105	Experimental Techniques and Instrumentations in Thermal Engineering	3	0	2#	4	70	30	20	10	10	10	150
2722106	Computational Fluid Dynamics	3	0	4#	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2722107	Advanced Internal Combustion Engine
2722108	Solar Energy Engineering
2722109	Advanced Refrigeration Engineering
Major Elective III	
2722110	Cryogenic Engineering
2722111	Design and Optimization of Thermal System
2722112	Exergy Analysis of Thermal Systems
Open Elective	
2721008	Energy Economics and Management

Information Technology (23)

w.e.f Jan 2015

Semester II						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	
2722301	Service Oriented Architecture	3	2#	0	4	70	30	30	0	10	10	150
2722311	Advance Database	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2722312	Wireless Adhoc Network
2722313	Digital Forensic
2722314	Artificial Intelligence for Information Technology

Major Elective III

2722315	IT Infrastructure Management
2720211	Software Project Management

Open Elective

2720214	Internet Technology
2722318	Database Management Systems

Plastic Technology (24)

w.e.f Jan 2015

Semester II						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	
2722405	Composite Material technology	3	2#	2	5	70	30	20	10	10	10	150
2722410	Additives and Compounding	3	2#	0	4	70	30	30	0	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

[2722411](#) Plastics Packaging Technology

[2722412](#) Biopolymers

Major Elective III

[2722413](#) Adhesive and coating

[2722414](#) Thermoplastic Elastomers

Open Elective

[2722402](#) Plastics Mould manufacturing Technology

[2722415](#) Safety , pollution control and waste management in polymer industries

Textile Engineering (25)

w.e.f Jan 2015

Semester II						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	
2722508	Theory of Fabric Structures	3	2#	0	4	70	30	30	0	10	10	150
2722509	Theory and Design of Textile Machine II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2722502	Theory of Yarn Manufacture
2722510	Nonwovens
Major Elective III	
2722511	Advanced Fabric Manufacture
2722512	Management of Textile Production
2722513	Process & Quality Control in Textile
Open Elective	
2722514	Engineering Applications of Textile

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

w.e.f Jan 2015

Semester II						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	
2722602	CMOS Circuit Design – II	4	0	2#	5	70	30	20	10	10	10	150
2722601	Advanced Digital Signal Processing and Applications	4	2#	0	5	70	30	20	10	10	10	150
	Major Elective - II	3	0	2#	4	70	30	20	10	10	10	150
	Major Elective - III	3	2#	2	5	70	30	20	10	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				24							

Major Elective II	
2722606	Algorithms for VLSI Physical Design Automation
2722609	Fundamentals of VLSI CAD
Major Elective III	
2720504	Speech Signal Processing
2722610	Advanced Image Processing
Open Elective	
2720509	Computer Networks
2720510	Introduction to Artificial Intelligence

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

w.e.f Jan 2015

Semester II						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	
2722711	Wireless Adhoc and Sensor Networks	4	0	2#	5	70	30	20	10	10	10	150
2722706	Wireless Signal Propagation & Fading	4	0	2#	5	70	30	30	0	10	10	150
	Major Elective - II	3	2#	2	5	70	30	30	0	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				24							

Major Elective II

2720504	Speech Signal Processing
2722709	Advanced Digital Communication
2722703	Radio Network Planning and Optimization

Major Elective III

2720506	Satellite communication
2722710	Neuro Computing and Applications

Open Elective

2720509	Computer Networks
2720510	Introduction to Artificial Intelligence

Mechanical (Production Engineering) (28)

w.e.f Jan 2015

Semester II						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	
2722802	Advance Welding Technology	3	2#	0	4	70	30	30	0	10	10	150
2722801	Mechanics of Metal Forming	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2722806	Sheet Metal Process
2722807	Tool & Die Design
2722808	Product Automation and CNC Technology
Major Elective III	
2722809	Metrology & Computer Aided Inspection
2722810	Production & Operation Management
2722811	Product Life Cycle Management
Open Elective	
2721008	Energy Economics and Management

Power Electronics (29)

w.e.f Jan 2015

Semester II						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	
2722910	Power Converters-II	3	2#	2	5	70	30	20	10	10	10	150
2722911	Industrial Drives	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	0	4	70	30	30	0	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2722906	Embedded Systems
2722907	Special Electrical Machines
Major Elective III	
2722912	Optimization Theory
2722913	Electrical Energy Conservation & Management
2722908	Application of Power Electronics in Renewable Energy System
Open Elective	
2722914	Industrial Electronics & Control

Chemical Engineering (30)

w.e.f Jan 2015

Semester II						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	
2723008	Advanced Chemical Engineering Thermodynamics	3	2#	0	4	70	30	30	0	10	10	150
2723009	Advanced Process Control	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2723010	Advanced Process Optimization
2723001	Advanced Mass Transfer
2723011	Process Modelling & Simulation
	Major Elective III
2723012	Advanced Process Synthesis
2723013	Process Safety Management
2723014	Process Auxiliaries and Utilities
2723015	Fluidization Engineering
2723016	Storage & Handling of materials
	Open Elective
2723007	Energy Technology

Bio Medical Engineering (31)

w.e.f Jan 2015

Semester II						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	
2723110	Embedded Systems for Biomedical Applications	3	2#	2	5	70	30	20	10	10	10	150
2723103	Biomedical Image Processing	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150

	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				24							

Major Elective II	
2723101	Virtual Biomedical Instrumentation
2723108	Artificial Organs & Rehabilitation Engineering
2723111	Medical Optics
Major Elective III	
2723112	Hospital Administration & Management
Open Elective	
2723113	Introduction to Biomedical Engineering

Civil (Water Resources Engineering) (33)

w.e.f Jan 2015

Semester II						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	
2723301	Ground water management	3	2#	0	4	70	30	30	0	10	10	150
2723302	Hydro system Engineering	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2723303	Water resources planning
2723304	Fluvial hydraulics
Major Elective III	
2723305	Water use management
2723306	Hydrological modeling
Open Elective	
2723307	Infrastructure engineering and management
2723308	Rehabilitation and Retrofitting of Buildings

Energy Engineering (39)

w.e.f Jan 2015

Semester II						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	
2723911	Wind and Small Hydro Energy System	3	2#	0	4	70	30	30	0	10	10	150
2722108	Solar Energy Engineering	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

[2723913](#) Alternative Fuels for Transportation

[2723914](#) Instrumentation in Energy Systems

Major Elective III

[2723915](#) Energy Audit and Management

[2723916](#) Energy Efficiency in Buildings

[2723917](#) Waste Management and Energy Generation Technology

Open Elective

[2721008](#) Energy Economics and Management

Rubber Technology (40)

w.e.f Jan 2015

Semester II						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	
2724003	Optimization in Rubber Industries (OPTRI)	3	2#	0	4	70	30	30	0	10	10	150
2724002	Rubber Blends (RB)	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2724006	Speciality Elastomers & its Technology (SET)
2724005	Thermal & Thermal Analysis of Rubber & Rubbery Materials (TAR&RM)
Major Elective III	
2724008	Physics of Rubber Elasticity (PHRE)
2724004	Nano Rubber Composites (NRC)
Open Elective	
2724009	Cleaner Production in Rubber Industries

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

w.e.f Jan 2015

Semester II						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	
2724110	Advances in Wireless Communication	3	2#	2	5	70	30	20	10	10	10	150
2724111	Statistical Signal Processing	3	2#	0	4	70	30	30	0	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2720504	Speech Signal Processing
2724114	Sensor Signal Processing
2724115	Adhoc and Wireless Sensor Network
Major Elective III	
2724107	Biomedical Signal Processing
2724112	Digital Video Processing
Open Elective	
2720509	Computer Networks
2720510	Introduction to Artificial Intelligence

Electronics & Communication (VLSI System Design) (42)

w.e.f Jan 2015

Semester II						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	
2722602	CMOS Circuit Design II	4	0	2#	5	70	30	20	10	10	10	150
2724202	Testing and Verification of VLSI Design	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				24							

Major Elective II

[2724209](#) VLSI Signal Processing

[2724203](#) RF CMOS IC Design

Major Elective III

[2724204](#) HDL based Design with Programmable Logic

[2724207](#) Hardware Software Co-Design

Open Elective

[2720509](#) Computer Network

[2720510](#) Introduction to Artificial Intelligence

Civil (Geotechnical Engineering) (43)

w.e.f Jan 2015

Semester II						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	
2724302	Analysis and Design of Foundation Systems	3	2#	0	4	70	30	30	0	10	10	150
2724301	Finite Element methods in Geotechnical Engineering	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2724309	Soil Structure Interaction
2724310	Software Applications in Geotechnical Engineering
Major Elective III	
2724303	Geosynthetics and Reinforced earth
2724311	Off-Shore Structures
Open Elective	
2724307	Elementary Machine Foundations

Electronics & Communication (Wireless Communication Technology) (44)

w.e.f Jan 2015

Semester II						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	
2724403	Adhoc Networks	4	0	2#	5	70	30	20	10	10	10	150
2724404	RF and Microwave Engineering	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	0	2#	4	70	30	20	10	10	10	150
	Major Elective - III	3	2#	2	5	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				24							

Major Elective II	
2724405	Smart Antennas for Wireless Communication System
2724411	Digital Image Processing
2724407	VLSI in Wireless Communication System
Major Elective III	
2724408	Recent trends in Modern Wireless Communication Engineering
2724409	Optical Networks and Photonic Switching
2722703	Radio Network Planning and Optimization
Open Elective	
2720510	Introduction to Artificial Intelligence

2724406	Sensor Technology
2724410	Embedded System and its applications

Power Electronics & Electrical Drives (45)

w.e.f Jan 2015

Semester II						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	
2724502	Power Electronics-II	3	2#	0	4	70	30	30	0	10	10	150
2724501	Solid State AC Drives	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2724504	Advance Electrical Machines
2724506	Intelligent Control

Major Elective III

2724503	Enhanced Power Quality AC/DC Converters
2724509	Application of Power Electronics in Renewable Energy Conversion

Open Elective

2724510	Energy Efficient Electrical Systems
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Mechanical (Industrial Engineering) (46)

w.e.f Jan 2015

Semester II						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	
2724603	Quality Engineering and Six sigma Fundamentals	3	2#	0	4	70	30	30	0	10	10	150
2724601	Facility Planning and Design	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150

	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2724608	Reliability Engineering and Tero Technology
2724605	Operations Planning and Control Techniques
Major Elective III	
2724609	Engineering Economics and Financial Management
2724604	Marketing Management
Open Elective	
2724610	Production Management Systems

Mechatronics (47)

w.e.f Jan 2015

Semester II						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	
2724701	Advance Oil Hydraulic and Pneumatic systems	3	0	2#	4	70	30	20	10	10	10	150
2724702	Advance Microcontrollers and Logic Controllers	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	0	2#	4	70	30	20	10	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2724703	Fundamentals of Micro Mechatronics Systems
2724704	Diagnostic Maintenance and Monitoring
2724710	Finite Elemental Methods
Major Elective III	
2724711	Advance Machine Vision and Applications
2724707	Mechatronics Signal Processing
2724705	Total Quality Management
Open Elective	
2724712	Optimization Theory and Practice

Civil (Town & Country Planning) (48)

w.e.f Jan 2015

Semester II						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	
2724802	Regional Planning	3	2#	0	4	70	30	30	0	10	10	150
2724801	Urban Planning Techniques & Practice	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2724803	Geospatial Techniques and Planning
2724804	Planning for Disaster Management
2724805	Regional & Mass Transportation System Planning

Major Elective III

2724807	Tourism Planning and System Management
2724812	Urban Governance & Development Management

Open Elective

2724813	Housing for Special Area
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Mechanical (Advance Manufacturing System) (50)

w.e.f Jan 2015

Semester II						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	
2725010	Simulation Modeling of Manufacturing system	3	2#	0	4	70	30	30	0	10	10	150
2725001	Robotics and Artificial Intelligence	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	0	2#	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2725003	Product Development and Innovation
2724608	Reliability Engineering and Tero Technology
Major Elective III	
2724705	Total Quality Management
2725005	Logistic and Supply Chain Management
2720816	Design for Manufacturing and Assembly
Open Elective	
2721008	Energy Economics and Management

Electronics & Communication (Embedded System) (54)

w.e.f Jan 2015

Semester II						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	
2725404	Mixed Signal Controllers	3	0	2#	4	70	30	20	10	10	10	150
2725405	Embedded and Linux Programming	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective - III	3	0	2#	4	70	30	20	10	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2725406	Embedded and VLSI Signal Processing
2725407	Programmable Logic Controllers and Applications
Major Elective III	
2725402	Digital Signal Processors :Architecture and Programming
2725408	Biomedical Instrumentation and Signal Processing
Open Elective	
2720509	Computer Networks
2720510	Introduction to Artificial Intelligence

ME Computer Engineering (Systems & Network Security)(56)

w.e.f Jan 2015

Semester II						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	
2725601	Ethical Hacking	3	2#	0	4	70	30	30	0	10	10	150
2725602	Cyber Security	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective-II	3	2#	2	5	70	30	20	10	10	10	150
	Major Elective-III	3	2#	0	4	70	30	30	0	10	10	150
	Open Elective	3	2#	2	5	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II

2725603	Cloud Computing
2725604	Cluster and Grid Computing
2725605	Distributed Computing

Major Elective III

2725606	IT Systems and Management
2720211	Software Project Management
2725607	Reverse Software Engineering

Open Elective

2720214	Internet Technology
2722318	Database Management Sytem

ME Computer Engineering (Cyber Security)(59)

w.e.f Jan 2018

Semester II						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	
2725901	Defense Programming in Python	3	0	2#	4	70	30	20	10	10	10	150
2725902	Internetworking and Security	4	0	2#	5	70	30	20	10	10	10	150
2725903	Ethical Hacking	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective-II	4	0	2#	5	70	30	20	10	10	10	150
	Major Elective-III	3	0	2#	4	70	30	20	10	10	10	150
	Total Credits				23							

Major Elective II	
2725904	Web and Database Security
2725905	Risk Assessment and Security Audit
2725906	Cryptoanalysis: Fundamentals and Applications
Major Elective III	
2725907	Data Center Management
2725908	Malware Analysis
2725909	Cryptography: Protocols and Standards

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.