

Bio-Medical(03)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170004	Project - I	0	0	8	8	0	0	80	20	100	3
2170303	Medical Imaging techniques	4	2	0	6	70	30	30	20	150	3
2170308	Biomedical Image Processing	4	0	2	6	70	30	30	20	150	3
	Department Elective - I	3	0	2	5	70	30	30	20	150	3
	Department Elective - II	3	0	2	5	70	30	30	20	150	3
	Total	14	2	14	30						
Department Elective I											
2170309	Introduction to JAVA & Visual C++										
2170310	Introduction to Virtual Biomedical Instrumentation										
Department Elective II											
2170311	Biomedical Microsystems										
2170312	Medical Optics										

Bio-Technology(04)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170003	Project - I	0	0	6	6	0	0	80	20	100	4
2170401	Enzymes and Proteins	4	0	3	7	70	30	30	20	150	4
2170403	Bioprocess Plant Design	3	2	0	5	70	30	30	20	150	4
2170407	Biochemical Engineering-I	4	0	0	4	70	30	0	0	100	4
2170408	Biosafety, Patents and IPR	2	0	0	2	70	30	0	0	100	4
	Department Elective - II	4	0	2	6	70	30	30	20	150	4
	Total	17	2	11	30						

Departmental Elective II

2170409	Environmental Biotechnology
2170410	Biotechnology for Waste and Wastewater Treatment

Computer Engineering (07), Computer Science & Engineering (31)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170002	Project - I	0	0	5	5	0	0	80	20	100	7,31
2170701	Complier Design	4	0	2	6	70	30	30	20	150	7,31
2170709	Information and Network Security	4	0	2	6	70	30	30	20	150	7,31
2170710	Mobile Computing and Wireless Communication	4	0	2	6	70	30	30	20	150	7,31
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	7,31
	Total	15	0	13	28						
Departmental Elective II											
2170712	Image Processing										
2170713	Service Oriented Computing										
2170714	Distributed DBMS										
2170715	Data Mining and Business Intelligence										

Electrical & Electronics Engineering (08)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170004	Project - I	0	0	8	8	0	0	80	20	100	8
2170808	Sensor Networks & Instrumentation	3	0	2	5	70	30	30	20	150	8
2170908	Switch Gear and Protection	4	0	2	6	70	30	30	20	150	8
2171003	Digital Signal Processing	4	0	2	6	70	30	30	20	150	8
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	8
	Total	14	0	16	30						

Departmental Elective II

2170906	Advanced Power Electronics
2170910	Power Quality and Management
2170911	Energy Conservation, and Audit

Electrical Engineering (09)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170004	Project - I	0	0	8	8	0	0	80	20	100	9
2170901	Inter Connected Power System	3	0	2	5	70	30	30	20	150	9
2170908	Switch Gear and Protection	4	0	2	6	70	30	30	20	150	9
2170909	Design of AC Machines	3	0	2	5	70	30	30	20	150	9
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	9
	Total	13	0	16	29						

Departmental Elective II

2170906	Advanced Power Electronics
2170913	Industrial Instrumentation
2170914	Digital Signal Processing

Electronics Engineering (10)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	10
2171001	Microwave Engineering	4	0	2	6	70	30	30	20	150	10
2171003	Digital Signal Processing	4	0	2	6	70	30	30	20	150	10
2171004	Wireless Communication	4	0	2	6	70	30	30	20	150	10
2171005	Embedded Systems	3	0	2	5	70	30	30	20	150	10
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	10
	Total	18	0	14	32						

Departmental Elective II

2171102	Biomedical Instrumentation
2171008	Data Communication and Networking
2171011	Radar & Navigational Aids

Information Technology (16)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170002	Project - I	0	0	5	5	0	0	80	20	100	16
2170709	Information and Network Security	4	0	2	6	70	30	30	20	150	16
2170710	Mobile Computing and Wireless Communication	4	0	2	6	70	30	30	20	150	16
2170715	Data Mining and Business Intelligence	3	0	2	5	70	30	30	20	150	16
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	16
	Total	14	0	13	27						
Departmental Elective II											
2171607	Big Data Analytics										
2170713	Service Oriented Computing										
2170714	Distributed DBMS										

Instrumentation & Control Engineering (17)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	University Exam (E)		Tutorial/Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA(M)	Viva(V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	17
2171707	Industrial Drives and Control	3	0	2	5	70	30	30	20	150	17
2171708	Digital Signal Processing	3	0	2	5	70	30	30	20	150	17
2171709	Distributed Control Systems and SCADA	3	0	2	5	70	30	30	20	150	17
2171710	Process Dynamics and Control	3	0	2	5	70	30	30	20	150	17
	Departmental Elective - II	4	0	2	6	70	30	30	20	150	17
	Total	16	0	14	30						

Departmental Elective II

2171711	Embedded System Design
2171712	Image Processing
2171713	Building Automation

Mechanical Engineering (19)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	19
2171901	Operation Research	3	2	0	5	70	30	30	20	150	19
2171903	Computer Aided Manufacturing	3	0	2	5	70	30	30	20	150	19
2171909	Machine Design	3	2	0	5	70	30	30	20	150	19
2171910	Power Plant Engineering	4	0	2	6	70	30	30	20	150	19
	Department Elective - I	3	0	2	5	70	30	30	20	150	19
	Total	16	4	10	30						

Department Elective I

2170203	Vehicle Dynamics
2171911	Advance Heat Transfer
2171912	Oil Hydraulics and Pneumatic
2171913	Metal Forming Analysis
2171914	Gas Dynamics
2171916	Applied Mechanics of Solids

Mechatronics Engineering (20)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	20
2172001	Microcontrollers and Embedded Systems	3	0	2	5	70	30	30	20	150	20
2172010	Automated Manufacturing - I	3	0	2	5	70	30	30	20	150	20
2172003	Manufacturing Technology - II	3	0	2	5	70	30	30	20	150	20
2172011	Production Optimization Techniques	3	1	0	4	70	30	30	20	150	20
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	20
	Total	15	1	12	28						

Departmental Elective II

2172007	Modern Control Systems
2172008	Finite Element Analysis of Mechatronic Systems
2172009	Soft Computing Applications

Plastic Technology (23)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	23
2172302	Plastics Mold & Die Design	3	0	2	5	70	30	30	20	150	23
2172312	Additives and Compounding of Plastics	3	0	2	5	70	30	30	20	150	23
2172307	FRP Technology and composites	3	0	2	5	70	30	30	20	150	23
2172308	Speciality Plastics & applications	3	0	2	5	70	30	30	20	150	23
	Departmental Elective - II	3	0	0	3	70	30	0	0	100	23
	Total	15	0	12	27						
Departmental Elective II											
2172310	Adhesive & sealants										
2172311	Plastic Structure property relationship										

Power Electronics (24)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	24
2172402	Industrial Drives & Control-II	4	0	2	6	70	30	30	20	150	24
2172408	Advanced Power Electronics Devices & Interface Circuits	3	0	0	3	70	30	0	0	100	24
2172409	Digital Signal Processing for Power Electronics	3	0	2	5	70	30	30	20	150	24
2172410	Power Electronics Design	4	0	2	6	70	30	30	20	150	24
	Department Elective - II	4	0	2	6	70	30	30	20	150	24
	Total	18	0	12	30						
Departmental Elective II											
2172407	Embedded Systems for Power Electronics										
2172411	Industrial Automation										
2172412	Advanced Control Systems										

Information & Communication Technology (32)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170002	Project - I	0	0	5	5	0	0	80	20	100	32
2170710	Mobile Computing and Wireless Communication	4	0	2	6	70	30	30	20	150	32
2173203	Microprocessor and Microcontroller	4	0	2	6	70	30	30	20	150	32
2173207	Satellite Communciation & Networking	4	0	2	6	70	30	30	20	150	32
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	32
	Total	15	0	13	28						
Departmental Elective II											
2173208	Distributed Computing										
2171003	Digital Signal Processing										
2173210	Digital Image Processing										

Manufacturing Engineering(34)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	34
2171901	Operation Research	3	2	0	5	70	30	30	20	150	34
2171903	Computer Aided Manufacturing	3	0	2	5	70	30	30	20	150	34
2173407	Quality & Reliability Engineering	3	2	0	5	70	30	30	20	150	34
2173408	Design of Machine Tools	3	2	0	5	70	30	30	20	150	34
	Department Elective - II	3	2	0	5	70	30	30	20	150	34
	Total	16	8	6	29						
Department Elective II											
2173409	Plastic mold & Die design										
2173410	Factory Automation										
2172506	Flexible Manufacturing System										

Environmental Science and Technology (35)

Semester VII

	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170003	Project - I	0	0	6	6	0	0	80	20	100	35
2173507	Legislation in Environmental Protection	3	0	0	3	70	30	0	0	100	35
2173508	Safety Health & Environment	3	0	0	3	70	30	0	0	100	35
2173514	Environmental Reaction Engineering	3	0	2	5	70	30	30	20	150	35
	Department Elective - I	3	0	3	6	70	30	30	20	150	35
	Department Elective - II	4	0	0	4	70	30	0	0	100	35
	Total	16	0	8	27						

\$ Practical includes engineering drawing of various process equipment given in the syllabus

Departmental Elective I

2173515	Design of Air Pollution Control System and Air Quality Modeling
2173516	Design of Soil Pollution Control System

Departmental Elective II

2173512	Water resource management
2173513	Newer waste water treatment systems

Chemical Technology (36)

Semester VII

	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170001	Project - I	0	0	4	4	0	0	80	20	100	36
2173610	Chemical Process Economics	3	0	0	3	70	30	0	0	100	36
2173611	Project & Plant Engineering	3	0	0	3	70	30	0	0	100	36
2173612	Fundamentals of Reaction Engineering	3	0	3	6	70	30	30	20	150	36
	Department Elective - VII	4	0	3	7	70	30	30	20	150	36
	Department Elective - VIII	4	0	3	7	70	30	30	20	150	36
	Total	17	0	13	30						

DEPARTMENT ELECTIVE VII

2173602	Process Technology of Drugs & Intermediates
2173603	Evaluation & Testing of Polymers & Rubber
2173604	Whitewares-I
2173613	Specialty Pigments & Recent development in Pigment Technology

DEPARTMENT ELECTIVE VIII	
2173606	Medicinal Chemistry-II & Technology of Sterile Products
2173607	Product Design Concept: Structures & Additives
2173614	Refractories-II
2173615	New Functional dyes & Recent Trends in Dyes Technology

Nano Technology (39)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2170004	Project - I	0	0	8	8	0	0	80	20	100	39
2173901	Application of CNT and Metallic Nanoparticles	4	0	0	4	70	30	0	0	100	39
2173902	Spintronics	3	0	0	3	70	30	0	0	100	39
2173903	Thin Film Technology	3	0	4	7	70	30	30	20	150	39
2173904	Photonics	3	0	0	3	70	30	0	0	100	39
	Departmental Elective - II	3	0	2	5	70	30	30	20	150	39
	Total	16	0	14	30						
Departmental Elective II											
2173905	Electrical and Optical properties of Nanomaterials										

Civil & Infrastructure Engineering (40)

Semester VII

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2174001	Irrigation and Water Resources Engineering	3	2	0	5	70	30	30	20	150	40
2174002	Construction Planning & Management	3	2	0	5	70	30	30	20	150	40
2174003	Design of Steel and Masonary Structure	3	2	0	5	70	30	30	20	150	40
	Software Learning Tool Project	0	0	4	4	0	0	80	20	100	40
	Departmental Elective – II	3	2	0	5	70	30	30	20	150	40
2170003	Project – I	0	0	6	6	0	0	80	20	100	40
	Total	12	8	10	30						

	Departmental Elective – II				
2174004	Infrastructure Policies and Regulations				
2174005	Prestressed Concrete Structures				
2174006	Advanced Transportation Engineering				
2174007	Computer Aided Structural Analysis and Design				
2174016	Planning and Design of Urban Water Infrastructure				
	Software Learning Tool Project				
2174008	Tool of Road Design				
2174009	Tool of Piping Design				
2174010	Green Building Design Studio				
2174011	Structural Analysis Tool				
2174012	Drawing Tool				
2174013	Tool of Geographical Information System (GIS)				
2174014	Building Information Modeling (BIM) Tool				
2174015	Project Planner Tool				