

GUJARAT TECHNOLOGICAL UNIVERSITY

Aeronautical Engineering (01)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150101	Flight Mechanics	4	1	0	5	70	30	30	20	150	1
2150102	Fundamentals of Turbo Machines	4	1	0	5	70	30	30	20	150	1
2150103	Aircraft Structures II	3	0	2	5	70	30	30	20	150	1
2150104	Computational Fluid Dynamics II	3	0	2	5	70	30	30	20	150	1
2150107	Aerodynamics I	4	1	0	5	70	30	30	20	150	1
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	1
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	1
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	1
Total					31						

Automobile Engineering (02)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150202	Automobile Systems	4	0	2	6	70	30	30	20	150	2
2151909	Heat Transfer	3	0	2	5	70	30	30	20	150	2
2150206	Automotive manufacturing	4	0	2	6	70	30	30	20	150	2
2150207	Automobile Transmission	3	0	0	3	70	30	0	0	100	2
2150208	Automotive Electrical Systems	3	0	2	5	70	30	30	20	150	2
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	2
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	2
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	2
Total					31						

Bio-Medical(03)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150301	Biomaterials & Implants	4	0	2	6	70	30	30	20	150	3
2150305	Modelling & Simulation of Physiological systems	3	0	2	5	70	30	30	20	150	3
2150306	Microcontroller & Interfacing (Biomedical)	4	0	2	6	70	30	30	20	150	3
2150307	Digital Signal Processing	4	0	2	6	70	30	30	20	150	3
2150308	Mini Project 2/Internship/TA/RA	0	0	2	2	0	0	80	20	100	3
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	3
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	3
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	3
Total					31						

Bio-Technology(04)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150401	Advanced Molecular Biology - I	3	0	3	6	70	30	30	20	150	4
2150402	Immunology	3	0	2	5	70	30	30	20	150	4
2150403	Basics of Reaction Engineering	4	0	3	7	70	30	30	20	150	4
2150404	Principles of Process Engineering-II	3	0	3	6	70	30	30	20	150	4
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	4
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	4
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	4
Total					30						

Chemical Engineering (05)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150501	Mass Transfer Operation - I	3	0	3	6	70	30	30	20	150	5
2150502	Mechanical Operation	4	0	3	7	70	30	30	20	150	5
2150503	Chemical Engineering Thermodynamics - II	3	2	0	5	70	30	30	20	150	5
2150504	Instrumentation & Process Control	4	0	3	7	70	30	30	20	150	5
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	5
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	5
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	5
	Total				31						

Civil Engineering (06)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150601	Highway Engineering	3	0	2	5	70	30	30	20	150	6
2150602	Hydrology & Water Resources Engineering	3	1	0	4	70	30	30	20	150	6
2150603	Environmental Engineering	3	0	2	5	70	30	30	20	150	6
2150608	Structural Analysis-II	4	2	0	6	70	30	30	20	150	6
2150609	Soil Mechanics	3	0	2	5	70	30	30	20	150	6
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	6
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	6
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	6
	Total				31						

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

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150703	Analysis and Design of Algorithms	4	0	2	6	70	30	30	20	150	7
2150704	Object Oriented Programming using JAVA	4	0	2	6	70	30	30	20	150	7
2150707	Microprocessor and Interfacing	4	0	2	6	70	30	30	20	150	7
2150708	System Programming	4	0	2	6	70	30	30	20	150	7
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	7
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	7
2150003	Institute Elective - Disaster Management	3	0	0	3	70	30	0	0	100	7
Total					30						

Electrical & Electronics Engineering (08)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150903	Power Electronics – I	3	0	2	5	70	30	30	20	150	8
2150907	Microprocessor and Microcontroller Architecture & Interfacing	4	0	2	6	70	30	30	20	150	8
2150908	Electrical Power System – I	3	0	0	3	70	30	0	0	100	8
2150909	Control System Engineering	4	0	2	6	70	30	30	20	150	8
2150904	Elements of Electrical Design	2	0	2	4	70	30	30	20	150	8
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	8
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	8
2150003	Institute Elective - Disaster Management	3	0	0	3	70	30	0	0	100	8
Total					30						

Electrical Engineering (09)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150903	Power Electronics – I	3	0	2	5	70	30	30	20	150	9
2150907	Microprocessor and Microcontroller Architecture & Interfacing	4	0	2	6	70	30	30	20	150	9
2150908	Electrical Power System – I	3	0	0	3	70	30	0	0	100	9
2150909	Control System Engineering	4	0	2	6	70	30	30	20	150	9
2150904	Elements of Electrical Design	2	0	2	4	70	30	30	20	150	9
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	9
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	9
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	9
Total					30						

Electronics Engineering (10)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2151001	Microcontroller and Interfacing (EC)	4	0	2	6	70	30	30	20	150	10
2151002	Engineering Electromagnetics	4	0	2	6	70	30	30	20	150	10
2151004	Electronic and Communication	4	0	2	6	70	30	30	20	150	10
2151007	Digital Design	4	0	2	6	70	30	30	20	150	10
2151102	Mini Project	0	0	2	2	0	0	80	20	100	10
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	10
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	10
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	10
Total					32						

Electronics & Communication Engineering (11), Electronics & Telecommunication Engineering (12)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2151001	Microcontroller and Interfacing (EC)	4	0	2	6	70	30	30	20	150	11
2151002	Engineering Electromagnetics	4	0	2	6	70	30	30	20	150	11
2151004	Electronics & Communication	4	0	2	6	70	30	30	20	150	11
2151102	Mini project	0	0	2	2	0	0	80	20	100	11
2151101	Audio Video Systems	3	0	2	5	70	30	30	20	150	11
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	11
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	11
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	11
Total					31						

Environmental Engineering (13), Environmental Science & Engineering(37)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2151302	Advanced Environmental Instrumentation	3	0	4	7	70	30	30	20	150	13
2151303	Physico - Chemical Treatment Technologies	4	0	2	6	70	30	30	20	150	13
2151306	Municipal Engineering	4	2	0	6	70	30	30	20	150	13
2151307	Municipal and industrial solid waste management	3	2	0	5	70	30	30	20	150	13
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	13
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	13
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	13
Total					30						

Food Processing & Technology (14)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2151401	Design & Formulation of Foods	3	0	2	5	70	30	30	20	150	14
2151402	Food Process Instrumentation & Control	3	0	2	5	70	30	30	20	150	14
2151404	Food Engineering Operations - I	4	0	2	6	70	30	30	20	150	14
2151406	Technology of Grains	4	0	2	6	70	30	30	20	150	14
2151407	Entrepreneurship and Food Plant Management	2	0	0	2	70	30	0	0	100	14
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	14
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	14
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	14
	Total				30						

Industrial Engineering (15)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2151501	Entrepreneurship Development & Productivity Engineering	4	0	2	6	70	30	30	20	150	15
2151502	Advertising, Sales and Distribution Management	4	2	0	6	70	30	30	20	150	15
2151505	Material Handling Systems	4	0	2	6	70	30	30	20	150	15
2151506	Design of Facilities Layout	4	0	2	6	70	30	30	20	150	15
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	15
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	15
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	15
	Total				30						

Information Technology (16)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150703	Analysis and Design of Algorithms	4	0	2	6	70	30	30	20	150	16
2150704	Object Oriented Programming using JAVA	4	0	2	6	70	30	30	20	150	16
2150708	System Programming	4	0	2	6	70	30	30	20	150	16
2151603	Computer Graphics	4	0	2	6	70	30	30	20	150	16
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	16
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	16
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	16
	Total	16	0	11	30						

Instrumentation & Control Engineering (17)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2151707	Microcontroller & Interfacing (IC)	4	0	2	6	70	30	30	20	150	17
2151704	Control System Components	4	0	2	6	70	30	30	20	150	17
2151705	Process Control Systems	4	0	2	6	70	30	30	20	150	17
2151706	Industrial Measurement II	4	0	2	6	70	30	30	20	150	17
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	17
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	17
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	17
	Total				30						

Mechanical Engineering (19)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2151902	Theory of Machines	3	0	2	5	70	30	30	20	150	19
2151903	Fluid Power Engineering	3	0	2	5	70	30	30	20	150	19
2151907	Design of Machine Elements	3	0	2	5	70	30	30	20	150	19
2151908	Control Engineering	3	0	2	5	70	30	30	20	150	19
2151909	Heat Transfer	3	0	2	5	70	30	30	20	150	19
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	19
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	19
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	19
Total					31						

Mechatronics Engineering (20)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152001	Electro Mechanical Energy Conversion	4	0	2	6	70	30	30	20	150	20
2152003	Fluid Mechanics & Machines	4	0	2	6	70	30	30	20	150	20
2152006	Basics of Micro Computer Systems	4	0	2	6	70	30	30	20	150	20
2152007	Manufacturing Technology - I	4	0	2	6	70	30	30	20	150	20
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	20
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	20
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	20
Total					30						

Metallurgy Engineering (21)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152106	Physical Metallurgy	4	0	2	6	70	30	30	20	150	21
2152104	Fuels, Furnaces, Refractories and Pyrometry	4	0	2	6	70	30	30	20	150	21
2152107	Extraction of Non Ferrous Metals	4	0	0	4	70	30	0	0	100	21
2152108	Steel Making	4	1	0	5	70	30	30	20	150	21
2152109	Advanced Materials	4	0	0	4	70	30	0	0	100	21
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	21
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	21
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	21
Total					31						

Mining Engineering (22)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152201	Mining Machinery - II	4	0	2	6	70	30	30	20	150	22
2152204	Rock Mechanics	4	0	2	6	70	30	30	20	150	22
2152205	Advance Mine Surveying	4	0	4	8	70	30	30	20	150	22
2152206	Underground coal Mining	4	0	2	6	70	30	30	20	150	22
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	22
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	22
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	22
Total					32						

Plastic Technology (23)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152301	Injection Molding Technologies	3	0	3	6	70	30	30	20	150	23
2152303	Plastics Recycling & Waste Treatment	3	0	2	5	70	30	30	20	150	23
2152305	Seminar-1	0	0	4	4	0	0	80	20	100	23
2152306	Chemistry of Plastic Materials	3	0	2	5	70	30	30	20	150	23
2152307	Plastic Extrusion Technology	3	0	2	5	70	30	30	20	150	23
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	23
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	23
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	23
	Total				31						

Power Electronics (24)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150909	Control System Engineering	4	0	2	6	70	30	30	20	150	24
2152409	Microcontroller for Power Electronics	4	0	2	6	70	30	30	20	150	24
2152406	Power Electronics Practice-I	0	0	2	2	0	0	80	20	100	24
2152407	Power Electronic Circuits-I	4	0	2	6	70	30	30	20	150	24
2152408	Industrial Instrumentation	3	0	2	5	70	30	30	20	150	24
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	24
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	24
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	24
	Total				31						

Production (25)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152506	Foundry Technology	4	0	2	6	70	30	30	20	150	25
2152507	Tool Engineering	4	0	2	6	70	30	30	20	150	25
2152508	Design of Machine Elements	4	2	0	6	70	30	30	20	150	25
2152509	Machine Dynamics	4	2	0	6	70	30	30	20	150	25
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	25
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	25
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	25
Total					30						

Rubber technology (26)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Tutorial/ Practical Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152601	Vulcanisation	3	0	3	6	70	30	30	20	150	26
2152603	Textile & Metal Reinforcement of Elastomers	3	0	3	6	70	30	30	20	150	26
2152604	Rheology of Rubber	3	0	3	6	70	30	30	20	150	26
2152606	Latex Processing & its application	3	0	4	7	70	30	30	20	150	26
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	26
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	26
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	26
Total					31						

Textile Processing (28)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152802	Technology of Dyeing -I	3	0	3	6	70	30	30	20	150	28
2152803	Analytical Textile Chemistry -I	3	0	3	6	70	30	30	20	150	28
2152806	Chemistry & Applications of Textile Auxiliaries	4	0	0	4	70	30	0	0	100	28
2152807	Processing & Applications of Non conventional Fibres	3	0	0	3	70	30	0	0	100	28
2152808	Scouring & Bleaching - II	3	0	3	6	70	30	30	20	150	28
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	28
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	28
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	28
	Total				31						

Textile Technology (29)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152901	Yarn Manufacturing-III	3	0	2	5	70	30	30	20	150	29
2152908	Weaving Technology-II	4	0	2	6	70	30	30	20	150	29
2152903	Fabric Structure-I	4	0	2	6	70	30	30	20	150	29
2152906	Physical Testing-I	3	0	2	5	70	30	30	20	150	29
2152907	Man Made Fibre Technology	3	0	0	3	70	30	0	0	100	29
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	29
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	29
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	29
	Total				31						

Information & Communication Technology (32)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2150708	System Programming	4	0	2	6	70	30	30	20	150	32
2150703	Analysis and Design of Algorithms	4	0	2	6	70	30	30	20	150	32
2150704	Object Oriented Programming using JAVA	4	0	2	6	70	30	30	20	150	32
2153202	Software Engineering	4	0	2	6	70	30	30	20	150	32
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	32
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	32
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	32
Total					30						

Manufacturing Engineering(34)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2152506	Foundry Technology	4	0	2	6	70	30	30	20	150	34
2152507	Tool Engineering	4	0	2	6	70	30	30	20	150	34
2152508	Design of Machine Elements	4	2	0	6	70	30	30	20	150	34
2153406	Mechatronics	4	0	2	6	70	30	30	20	150	34
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	34
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	34
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	34
Total					30						

Environmental Science and Technology (35)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2153504	Air Pollution Control	3	0	2	5	70	30	30	20	150	35
2153507	Elements of Fluid Flow	3	1	2	6	70	30	30	20	150	35
2153502	Introduction to Heat Transfer	3	1	2	6	70	30	30	20	150	35
2153508	Environmental Management-I	3	0	2	5	70	30	30	20	150	35
2153509	Liquid Effluent Treatment-I	3	0	2	5	70	30	30	20	150	35
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	35
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	35
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	35
Total					33						

Chemical Technology (36)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2153611	Green Chemistry for Technologists	3	0	0	3	70	30	0	0	100	36
2153612	Basics of Fluid Flow	3	0	2	5	70	30	30	20	150	36
2153613	Basics of Heat Transfer	3	0	2	5	70	30	30	20	150	36
	Department Elective-III	3	0	2	5	70	30	30	20	150	36
	Department Elective-IV	3	0	3	6	70	30	30	20	150	36
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	36
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	36
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	36
Total					30						

Department Elective- III

Code	Name of the subject
2153601	Pharmaceutical Chemistry
2153602	Polymer & Rubber materials - I

2153614	Glass science & Technology
2153604	Technology of Intermediate & Colorants

Department Elective- IV

Code	Name of the subject
2153605	Microbiology & Formulation Technology of Liquids & Topicals
2153606	Polymer & Rubber Material-II
2153615	Processing of Glass & Ceramics
2153608	Chemistry of Intermediates & Colorants-III

Nano Technology (39)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2153901	Fabrication of Nano- devices	3	0	2	5	70	30	30	20	150	39
2153902	Nano Ceramic and Applications	4	0	0	4	70	30	0	0	100	39
2153903	Application of Nanotechnology	4	0	0	4	70	30	0	0	100	39
2153904	Elements of Nanoscience and Technology-II	4	0	2	6	70	30	30	20	150	39
2153905	Nanotechnology and Environment	3	0	2	5	70	30	30	20	150	39
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	39
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	39
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	39
	Total				30						

Civil and Infrastructure (40)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2154001	Advanced Structural Analysis	3	2	0	5	70	30	30	20	150	40
2154002	Fluid Mechanics and Hydraulics	3	0	2	5	70	30	30	20	150	40
2154003	Geotechnical Engineering - I	3	0	2	5	70	30	30	20	150	40
2154004	Railway & Bridge Engineering	3	2	0	5	70	30	30	20	150	40
2154005	Industry Internship-1	0	0	2	2	0	0	80	20	100	40

2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	40
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	40
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	40
Total					31						

Robotics and Automation (41)

Semester V

Subject code	Subject name	Teaching Scheme (Hours)			Credits	Theory Marks		Marks		Total Marks	Branch Code
		Theory	Tutorial	Practical		ESE(E)	PA (M)	Viva (V)	PA(I)		
2154101	Sensor and Instrumentation	4	1	0	5	70	30	30	20	150	41
2154102	Principles of Robotics	3	0	2	5	70	30	30	20	150	41
2154103	CNC Machine and Metrology	3	0	2	5	70	30	30	20	150	41
2154104	Design of Machine Elements and Transmission System	3	1	0	4	70	30	30	20	150	41
2150001	Design Engineering - II A	0	0	3	3	0	0	80	20	100	39
2150002	Institute Elective - Cyber Security	0	1	2	3	0	0	80	20	100	39
2150003	Institute Elective - Diaster Management	3	0	0	3	70	30	0	0	100	39
Total					28						