

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.E SEM-V ( ALL BRANCH) SUBJECT CODE/TEACHING/EXAMINATION SCHEME**

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 1 Aeronautical Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	1
150101	Flight Mechanics	3	1	0	4	70	30	50	150	1
150102	Fundamentals of Turbo M/cs	3	1	0	4	70	30	50	150	1
150103	Aircraft Structure-II	3	0	2	5	70	30	50	150	1
150104	Computational Fluid Dynamics-1	3	0	2	5	70	30	50	150	1
150105	Operation & Maintenance of Aircraft	3	1	0	4	70	30	50	150	1
150106	Composite Materials and Smart Structures (Institute Elective - II)	4	0	2	6	70	30	50	150	1
<b>Branch Code : 2 Automobile Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	2
150201	Automobile Engines	4	0	2	6	70	30	50	150	2
150202	Automobile Systems	4	0	2	6	70	30	50	150	2
151901	Manufacturing Processes - II	3	0	2	5	70	30	50	150	2
150203	Power Electronics & Control Engineering	4	0	2	6	70	30	50	150	2
150204	Automobile Maintenance and Repair Practice (Institute Elective - II)	2	0	4	6	70	30	50	150	2
<b>Branch Code : 3 Bio-Medical Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	3
150301	Biomaterials & Implants	4	0	2	6	70	30	50	150	3
150302	Biomedical Transducers	3	0	2	5	70	30	50	150	3
151001	Microcontroller and Interfacing	3	0	2	5	70	30	50	150	3
150303	Signal & Systems	4	0	2	6	70	30	50	150	3
150304	Modelling & Simulation of Biological Systems (Institute Elective - II)	4	0	2	6	70	30	50	150	3

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 4 Bio-Technology (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	4
150401	Advanced Molecular Biology –I	3	0	0	3	70	30	50	150	4
150402	Immunology	3	0	2	5	70	30	50	150	4
150403	Chemical Reaction Engineering	4	0	3	7	70	30	50	150	4
150404	Principles of Process Engineering-II	3	0	3	6	70	30	50	150	4
150405	The Science of Life(Institute Elective-II )	4	0	2	6	70	30	50	150	4
<b>Branch Code : 5 Chemical Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	5
150501	Mass Transfer Operation – I	3	0	3	6	70	30	50	150	5
150502	Mechanical Operation	3	0	3	6	70	30	50	150	5
150503	Chemical Engineering Thermodynamics-II	3	1	0	4	70	30	50	150	5
150504	Instrumentation & Process Control	3	0	3	6	70	30	50	150	5
150505	Fundamentals of Chemical Engineering Unit Operations (Institute Elective - II )	4	0	2	6	70	30	50	150	5
<b>Branch Code : 6 Civil Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	6
150601	Highway Engineering	3	0	2	5	70	30	50	150	6
150602	Hydrology & Water Resources Engineering	3	1	0	4	70	30	50	150	6
150603	Environmental Engineering	3	0	2	5	70	30	50	150	6
150604	Geotechnical Engineering - I	3	0	2	5	70	30	50	150	6
150605	Structural Analysis - III	2	1	0	3	70	30	50	150	6
150606	Disaster Assessment using Geospatial Techniques (Institute Elective-II )	4	0	2	6	70	30	50	150	6
<b>Branch Code : 7 Computer Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	7
150701	Advance Processors	3	0	2	5	70	30	50	150	7
150702	Computer Network	4	0	2	6	70	30	50	150	7
150703	Design and Analysis of Algorithms	4	0	2	6	70	30	50	150	7
150704	Object Oriented Programming With Java	2	0	2	4	70	30	50	150	7
150705	Seminar	0	0	1	1	0	0	100	100	7
150706	Visual Basic Application & Programming (Institute Elective - II)	4	0	2	6	70	30	50	150	7

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 8 Electrical &amp; Electronics (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	8
151001	Microcontroller and Interfacing	3	0	2	5	70	30	50	150	8
151002	Engineering Electromagnetics	3	0	0	3	70	30	50	150	8
150801	Electrical Power Engineering	4	0	2	6	70	30	50	150	8
150802	Electrical Machine	4	0	2	6	70	30	50	150	8
151005	Electronics Measurements and Instrumentation Laboratory	0	0	2	2	0	0	100	100	8
151006	Applied Electronics (Institute Elective - II)	4	0	2	6	70	30	50	150	8
<b>Branch Code : 9 Electrical Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	9
150901	Electrical Machine - II	3	0	2	5	70	30	50	150	9
150902	Power System Analysis and Simulation	3	0	2	5	70	30	50	150	9
150903	Power Electronics - I	3	0	2	5	70	30	50	150	9
150904	Elements of Electrical Design	3	0	2	5	70	30	50	150	9
150905	Switchgear	2	0	0	2	70	30	50	150	9
150906	Electrical Power Utilization and Traction (Institute Elective -II)	4	0	2	6	70	30	50	150	9
<b>Branch Code : 10 Electronics Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	10
151001	Microcontroller and Interfacing	3	0	2	5	70	30	50	150	10
151002	Engineering Electromagnetics	3	0	0	3	70	30	50	150	10
151003	Integrated Circuits and Applications	4	0	2	6	70	30	50	150	10
151004	Electronic Communication	4	0	2	6	70	30	50	150	10
151005	Electronics Measurements and Instrumentation Laboratory	0	0	2	2	0	0	100	100	10
151006	Applied Electronics (Institute Elective - II)	4	0	2	6	70	30	50	150	10
<b>Branch Code : 11 Electronics &amp; Communication Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	11
151001	Microcontroller and Interfacing	3	0	2	5	70	30	50	150	11
151002	Engineering Electromagnetics	3	0	0	3	70	30	50	150	11
151003	Integrated Circuits and Applications	4	0	2	6	70	30	50	150	11
151004	Electronic Communication	4	0	2	6	70	30	50	150	11
151005	Electronics Measurements and Instrumentation Laboratory	0	0	2	2	0	0	100	100	11
151006	Applied Electronics (Institute Elective - II)	4	0	2	6	70	30	50	150	11

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 12 Electronics &amp; Telecommunication (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	12
151001	Microcontroller and Interfacing	3	0	2	5	70	30	50	150	12
151002	Engineering Electromagnetics	3	0	0	3	70	30	50	150	12
151003	Integrated Circuits and Applications	4	0	2	6	70	30	50	150	12
151004	Electronic Communication	4	0	2	6	70	30	50	150	12
151005	Electronics Measurements and Instrumentation Laboratory	0	0	2	2	0	0	100	100	12
151006	Applied Electronics (Institute Elective - II)	4	0	2	6	70	30	50	150	12
<b>Branch Code : 13 Environment Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	13
151301	Elements of Chemical Engineering	3	0	2	5	70	30	50	150	13
151302	Advanced Environmental Instrumentation	2	0	4	6	70	30	50	150	13
151303	Physico- Chemical Treatment Technologies	4	0	2	6	70	30	50	150	13
151304	Environmental Resources	3	2	0	5	70	30	50	150	13
151305	Air Pollution & Control (Institute Elective - II)	4	2	0	6	70	30	50	150	13
<b>Branch Code : 14 Food Processing &amp; Technology (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	14
151401	Design & Formulation of Foods	4	0	2	6	70	30	50	150	14
151402	Food Process Instrumentation & Control	3	0	2	5	70	30	50	150	14
151403	Food Refrigeration & Air - Conditioning	4	0	2	6	70	30	50	150	14
151404	Food Engineering Operations - I	4	0	2	6	70	30	50	150	14
151405	Food Nutrition & Health (Institute Elective - II)	4	0	2	6	70	30	50	150	14
<b>Branch Code : 15 Industrial Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	15
151501	Entrepreneurship Development & Productivity Engineering	4	0	2	6	70	30	50	150	15
151502	Advertising, Sales and Distribution Management	3	2	0	5	70	30	50	150	15
151503	Facilities Layout & Material Handling Systems	4	0	2	6	70	30	50	150	15
151901	Manufacturing Processes - II	3	0	2	5	70	30	50	150	15
151504	Marketing Management (Institute Elective - II)	4	0	2	6	70	30	50	150	15

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 16 Information Technology (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	16
150702	Computer Network	4	0	2	6	70	30	50	150	16
150704	Object Oriented Programming With Java	2	0	2	4	70	30	50	150	16
151601	Computer Oriented Statistical Methods	4	0	2	6	70	30	50	150	16
151602	E-Commerce & E-Business	3	0	2	5	70	30	50	150	16
150705	Seminar	0	0	1	1	0	0	100	100	16
150706	Visual Basic Application & Programming (Institute Elective - II)	4	0	2	6	70	30	50	150	16
<b>Branch Code : 17 Instrumentation &amp; Control Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	17
151001	Microcontroller and Interfacing	3	0	2	5	70	30	50	150	17
151701	Industrial Measurement	3	0	0	3	70	30	50	150	17
151702	Sensors and Signal Conditioning	3	0	2	5	70	30	50	150	17
151703	Electronics in Industries	3	0	2	5	70	30	50	150	17
151704	Industrial Control Systems(Institute Elective-II)	4	0	2	6	70	30	50	150	17
151705	Practices in Measurement	0	0	4	4	0	0	100	100	17
<b>Branch Code : 18 Marine Engineering (Semester V)</b>										
150001	Management-II	2	0	0	2	70	30	50	150	18
151801	Marine Auxiliary Machines-I	3	0	2	5	70	30	50	150	18
151802	Thermodynamics-I	4	1	0	5	70	30	50	150	18
151803	Seamanship and Elementary Navigation	3	0	2	5	70	30	50	150	18
151804	Ship Construction	2	0	0	2	70	30	50	150	18
151805	Elementary design and Drawing	3	0	2	5	70	30	50	150	18
151806	Basic Marine Machinery (Institute Elective-II)	4	0	2	6	70	30	50	150	18
<b>Branch Code : 19 Mechanical Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	19
151901	Manufacturing Processes - II	3	0	2	5	70	30	50	150	19
151902	Theory of Machines	3	0	2	5	70	30	50	150	19
151903	Fluid Power Engineering	3	0	2	5	70	30	50	150	19
151904	Power Plant Engineering	3	0	0	3	70	30	50	150	19
151905	Machine Design-I	4	0	2	6	70	30	50	150	19
151906	Conventional Power Engineering (Institute Elective - II)	4	0	2	6	70	30	50	150	19

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 20 Mechatronics Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	20
152001	Electro Mechanical Energy Conversion	3	0	2	5	70	30	50	150	20
152002	Manufacturing Technology - I	4	0	2	6	70	30	50	150	20
152003	Fluid Mechanics & Machines	4	0	2	6	70	30	50	150	20
152004	Object Oriented Programming in c++	3	0	2	5	70	30	50	150	20
152005	Quantitative Techniques in Management (Institute Elective - II)	4	2	0	6	70	30	50	150	20
<b>Branch Code : 21 Metallurgy Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	21
152101	Iron Making	4	0	2	6	70	30	50	150	21
152102	Non - Ferrous Extractive Metallurgy	4	0	0	4	70	30	50	150	21
152103	Foundry Technology	4	0	2	6	70	30	50	150	21
152104	Fuels, Furnaces and Refractory	4	2	0	6	70	30	50	150	21
152105	Industrial Corrosion & its Prevention (Instituional Elective - II)	4	0	2	6	70	30	50	150	21
<b>Branch Code : 22 Mining Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	22
152201	Mining Machinery II	2	0	2	4	70	30	50	150	22
152202	Surface Mine Production	2	0	2	4	70	30	50	150	22
152203	Rock Mechanics	3	0	2	5	70	30	50	150	22
152204	Advance Mine Surveying	2	0	4	6	70	30	50	150	22
152205	Underground Coal Mining	3	0	0	3	70	30	50	150	22
152206	Fuel Technology (Institute Elective –II )	4	0	2	6	70	30	50	150	22
<b>Branch Code : 23 Plastic Technology (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	23
152301	Injection Moulding Technologies	3	0	3	6	70	30	50	150	23
152302	Physics Of Plastics	3	0	3	6	70	30	50	150	23
152303	Plastics Recycling & Waste Treatment	3	0	3	6	70	30	50	150	23
152304	Plastic Proccesing & Machinary ( Institute Elective-II)	4	0	2	6	70	30	50	150	23
152305	Seminar - I	0	0	4	4	0	0	100	100	23

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 24 Power Electronics (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	24
152401	Power Electronics Devices & Components	4	0	0	4	70	30	50	150	24
152402	Electrical Measurements & Electronics Instruments	3	0	2	5	70	30	50	150	24
152403	Applied Power Electronics	4	0	0	4	70	30	50	150	24
152404	Electro Mechanical Energy conversion - II	3	0	2	5	70	30	50	150	24
152405	Power Electronics Applications (Institute Elective - II)	4	0	2	6	70	30	50	150	24
152406	Power Electronics Practice - I	0	0	4	4	0	0	100	100	24
<b>Branch Code : 25 Production Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	25
152501	Casting Technology	3	0	2	5	70	30	50	150	25
152502	Tool Design	3	2	0	5	70	30	50	150	25
152503	Design of M/c Elements - I	4	2	0	6	70	30	50	150	25
152504	Dynamics of Machines & Production Engineering Drawing	4	2	0	6	70	30	50	150	25
152505	Project Management (Institute Elective - II)	4	0	2	6	70	30	50	150	25
<b>Branch Code : 26 Rubber Technology (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	26
152601	Vulcanisation	3	0	2	5	70	30	50	150	26
152602	Latex Technology	3	0	3	6	70	30	50	150	26
152603	Textile & Metal Reinforcement of Elastomers	3	0	3	6	70	30	50	150	26
152604	Rheology of Rubber	3	0	2	5	70	30	50	150	26
152605	Rubbers: Manufacturing & its Applications (Institute Elective-II)	4	0	2	6	70	30	50	150	26
<b>Branch Code : 28 Textile Production (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	28
152801	Chemistry of Intermediates & Dyes	4	0	0	4	70	30	50	150	28
152802	Technology of Dyeing - I	3	0	3	6	70	30	50	150	28
152803	Analytical Textile Chemistry - I	3	0	3	6	70	30	50	150	28
152804	Chemical and Physical Analysis of Textiles	4	0	2	6	70	30	50	150	28
152805	Production & Applications of Colorants & Auxiliaries (Institute Elective - II)	4	0	2	6	70	30	50	150	28

Subject Code	Subject Name	Teaching Scheme(Hours)			Credits	Examination Marks			Total Marks	Branch Code
		Theory	Tutorial	Practical		University Exam (Theory) (E)	Mid Sem. Exam (Theory) (M)	Practical (I)		
<b>Branch Code : 29 Textile Technology (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	29
152901	Yarn Manufacturing - III	4	0	2	6	70	30	50	150	29
152902	Weaving - III	4	0	2	6	70	30	50	150	29
152903	Fabric Structure - I	4	0	2	6	70	30	50	150	29
152904	Modern Yarn Production	4	0	0	4	70	30	50	150	29
152905	Textile Manufacturing Processes(Institute Elective - II)	4	0	2	6	70	30	50	150	29
<b>Branch Code : 31 Computer Science &amp; Engineering (Semester V)</b>										
150001	Management - II	2	0	0	2	70	30	50	150	31
150701	Advance Processors	3	0	2	5	70	30	50	150	31
150702	Computer Network	4	0	2	6	70	30	50	150	31
150703	Design and Analysis of Algorithms	4	0	2	6	70	30	50	150	31
150704	Object Oriented Programming With Java	2	0	2	4	70	30	50	150	31
150705	Seminar	0	0	1	1	0	0	100	100	31
150706	Visual Basic Application & Programming (Institute Elective - II)	4	0	2	6	70	30	50	150	31