

5 Year Dual Degree Programme (Electrical Engineering)

SEMESTER-I				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	CY101/PH102	Engineering Chemistry/Engineering Physics	3-1-0	4
2	MA101	Mathematics - I	3-1-0	4
3	CE101	Engineering Mechanics	2-1-0	3
4	CS101	Computer Programming - I	2-0-0	2
5	EC101/EE102	Basic Electronics/Electrical Technology	2-0-0	2
6	HU101	English Proficiency	2-0-0	2
7	SS101	Human Values & Buddhist Ethics	2-0-0	2
		<u>PRACTICALS</u>		
8	CY103/PH104	Engineering Chemistry / Engineering Physics Lab	0-0-2	1
9	CE103	Engineering Graphics	0-0-3	2
10	CS103	Computer Programming Lab-I	0-0-3	2
11	EC103/EE104	Basic Electronics Lab/ Electrical Technology Lab	0-0-2	1
12	GP101	General Proficiency	-	1
		Total	16-3-10	26
		Total Contact Hours	29	

SEMESTER - II				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	PH102/CY101	Engineering Physics/ Engineering Chemistry	3-1-0	4
2	MA102	Mathematics - II	3-1-0	4
3	CE102	Concepts of Built Environment	2-1-0	3
4	CS102	Computer Programming - II	2-0-0	2
5	EE102/EC101	Electrical Technology/ Basic Electronics	2-0-0	2
6	HU102	Professional Communication	2-0-0	2
7	SS102	History of Science & Technology	2-0-0	2
		<u>PRACTICALS</u>		
8	PH104/CY103	Engineering Chemistry / Engineering Physics Lab	0-0-2	1
9	CE104	Built Environment Lab	0-0-3	2
10	EE104/EC103	Electrical Technology Lab/ Basic Electronics Lab	0-0-2	1
11	ME102	Workshop Practices	0-0-3	2
12	GP102	General Proficiency	-	1
		Total	16-3-10	26
		Total Contact Hours	29	

SEMESTER-III				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	MA201	Quantitative Techniques	3-1-0	4
2	EE201	Electrical Engineering Materials	2-0-0	2
3	EE203	Circuit Analysis	3-1-0	4
4	EE205	Electronic Devices & Circuits (EDC)	3-0-0	3
5	EE207	Electrical Machine-I	3-1-0	4
6	CS205	Data Structure and Algorithm	3-0-0	3
		<u>PRACTICALS</u>		
7	EE209	Circuit Analysis Lab	0-0-3	2
8	EE211	Electrical Machine Lab - I	0-0-3	2
9	EE213	EDC Lab (Lab in ICT)	0-0-2	1
10	GP201	General Proficiency	-	1
		Total	17-3-8	26
		Total Contact Hour	28	

SEMESTER - IV				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	MA202	Numerical Methods of Analysis	3-1-0	4
2	EE202	Measurements and Instrumentation	2-0-0	2
3	EE204	Digital Electronics	3-0-0	3
4	EE206	Electromagnetic Field Theory	3-1-0	4
5	EE208	Generation of Electric Power	3-0-0	3
6	EE210	Electrical Machine -II	3-1-0	4
		<u>PRACTICALS</u>		
7	EE212	Digital Electronics Lab (Lab in ICT)	0-0-3	2
8	EE214	Electrical Machine - II	0-0-3	2
9	EE216	Measurements and Instrumentation Lab	0-0-2	1
10	GP202	General Proficiency	-	1
		Total	17-3-8	26
		Total Contact Hour	28	

SEMESTER - V				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	ME311	Principles of Technology Management	2-0-0	2
2	EE301	Power System-I	3-1-0	4
3	EE303	Circuit Synthesis	3-0-0	3
4	EE305	Control Theory	3-1-0	4
5	EE307	Advance Measurement and Instrumentation	3-0-0	3
6	EE309	Transmission & Distribution of Electric Power	3-0-0	3
		<u>PRACTICALS</u>		
7	EE313	Control Theory Lab	0-0-3	2
8	EE315	Advance Measurement and Instrumentation Lab	0-0-3	2
9	EE317	MATLAB Programming Lab (CAD Lab)	0-0-3	2
10	GP301	General Proficiency		1
		Total	17-2-9	26
		Total Contact Hours	28	

SEMESTER - VI				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	ME312	Entrepreneurship & Innovation	2-0-0	2
2	EE302	Power Electronics & Drives	3-1-0	4
3	EE304	Power System -II	3-1-0	4
4	EE306	Communication Systems	2-1-0	3
5	EE308	Energy Auditing and Load Management	3-0-0	3
6	EE310	Micro Processor & Micro Controller	3-0-0	3
		<u>PRACTICALS</u>		
7	EE314	Power System Lab	0-0-3	2
8	EE316	Power Electronics & Drives Lab	0-0-3	2
9	EC310	Micro processor & Micro Controller Lab	0-0-3	2
10	GP302	General Proficiency		1
		Total	16-3-9	26
		Total Contact Hours	28	

SEMESTER - VII				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	SS401	Social Aspects of Engineering	2-1-0	3
2	EE401	Utilization of Electric Power	2-1-0	3
3	EE403	Switch Gear & Protection	3-0-0	3
4	EE405	Energy Management & SCADA Systems	3-0-0	3
5		Elective - I	3-0-0	3
6		Elective - II	2-1-0	3
		<u>PRACTICALS</u>		
7	EE431	Switch Gear & Protection Lab	0-0-3	2
8	EE433	Advance Power Electronics Lab	0-0-3	2
9	EE435	Seminar on Industrial Training	0-0-3	2
10	GP401	General Proficiency	-	1
		Total	15-3-9	25
		Total Contact Hours	27	

SEMESTER – VIII				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	MA402	Simulation and Modeling	3-1-0	4
2	EE402	High Voltage Engineering	3-0-0	3
3	EE404	Power System Planning & Reliability	3-0-0	3
4	EE406	Process Modelling and Control	3-0-0	3
5		Specialisation Elective-I	2-1-0	3
6		Specialisation Elective- II	3-0-0	3
		<u>PRACTICALS</u>		
7		Special Problem -I	0-0-3	2
8		Seminar	0-0-3	3
9	GP402	General Proficiency		1
		Total	16-3-6	25
		Total Contact Hours	25	

SUMMER SEMESTER (AFTER VIII SEMESTER)				
Sr. No.	Subject Code	Courses	L-T-P	Credits
1.		Summer Project	0-0-20	10
		Total	0-0-20	10
		Total Contact Hours	20	

SEMESTER – IX (Power System)				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		THEORY		
1		Open Elective - I	2-0-0	2
2	EE501	Power System Dynamics & Stability	3-1-0	4
3	EE503	High Voltage DC Transmission	3-0-0	3
4	EE505	Flexible AC Transmission Systems	3-1-0	4
5		Specialization Elective- III	2-1-0	3
6		Specialization Elective - IV	2-1-0	3
		<u>PROJECTS</u>		
7		Power System Modelling & Simulation Lab	0-0-3	2
8		Research Project (Preliminary)	1**-0-4	3
9	GP501	General Proficiency		1
		Total	16-4-7	25
		Total Contact Hours	27	

*** This will not be a usual lecture session, but this is one to one interaction of each student with the concerned faculty member*

SEMESTER – X				
Sr. No.	Subject Code	Courses	L-T-P	Credits
1		Research Project		24
2	GP502	General Proficiency	-	1
		Total		25

Grand Total Credits of Dual Degree = 266

SEMESTER – IX (Instrumentation & Control)				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1		Open Elective - I	2-0-0	2
2	EE541	PC/Micro-controller based Instrumentation	3-1-0	4
3	EE543	Parallel Process & Real Time Systems	3-0-0	3
4	EE545	Environment Monitoring Instrumentation	3-1-0	4
5		Specialization Elective- III	2-1-0	3
6		Specialization Elective - IV	2-1-0	3
		<u>PROJECTS</u>		
7		Process Control Lab /Seminar-II	0-0-3	2
8		Research Project (Preliminary)	1**-0-4	3
9	GP501	General Proficiency		1
		Total	16-4-7	25
		Total Contact Hours	27	

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SEMESTER – X				
Sr. No.	Subject Code	Courses	L-T-P	Credits
1		Research Project	0-0-48	24
2	GP502	General Proficiency	-	1
		Total	0-0-48	25
		Total Contact Hours	48	

Grand Total Credits of Dual Degree = 266

List of Electives for B.Tech

Elective-I & II

1. EE407: Reliability Analysis & Prediction
2. EE409: Introduction to MEMS
3. EE411: Embedded System
4. EE413: Failure Data Organization and Analysis
5. EE415: Restructured Power System
6. EE417: VHSIC Hardware Description Language
7. EE419: VLSI Design
8. EE421: Transient over voltages in Power Systems
9. EE423: Transducers in Instrumentation
10. EE425: Ultrasonic, Laser and Fiber Optic Based Instrumentation
11. EE427: Microelectronics Technology

List of Electives for M. Tech (Power System)

Specialization Elective-I & II

1. EE408: Optimal Power System Operation
2. EE410: Computer Aided Design of Electrical Machines
3. EE412: Power Conditioning
4. EE414: Linear Integrated Circuits
5. EE416: Advanced Distribution System
6. EE418: Organization & Finance in Power Sector
7. EE420: Calibration and Testing of Electrical Equipments
8. EE422: Instrumentation in Power System
9. EE424: Adaptive Control Systems
10. EE426: Hydraulic and Pneumatic Instrumentation

Specialization Elective –III

1. EE507: Power Converters & Applications
2. EE509: Intelligent Techniques & Applications
3. EE511: Computer Applications to Power System Analysis
4. EE513: High Voltage Engineering & Test Techniques
5. EE515: Robotic Technology
6. EE517: Data Mining and Pattern Recognition

Specialization Elective -IV

1. EE521: Operation and Control of Power Systems
2. EE523: Power Quality Monitoring and Conditioning
3. EE525: Advanced Power System Protection
4. EE527: Parallel & Distributed Computing
5. EE529: Load and Energy Management
6. EE531: Digital Controllers in Power Electronics Applications

Open Elective - I

1. EE581: Probabilistic Risk Assessment
2. EE583: Reliability Centered Maintenance
3. EE585: Renewable & Non-Conventional Energy Sources

List of Electives for M. Tech (Instrumentation & Control)

Specialization Elective-I & II

1. EE408: Optimal Power System Operation
2. EE410: Computer Aided Design of Electrical Machines
3. EE412: Power Conditioning
4. EE414: Linear Integrated Circuits
5. EE416: Advanced Distribution System
6. EE418: Organization & Finance in Power Sector
7. EE420: Calibration and Testing of Electrical Equipments
8. EE422: Instrumentation in Power System
9. EE424: Adaptive Control Systems
10. EE426: Hydraulic and Pneumatic Instrumentation

Specialization Elective -III

1. EE551: Non Linear Control System
2. EE553: Remote Sensing
3. EE555: Digital Signal & Image Processing
4. EE557: Virtual Instrumentation and its Engineering Applications
5. EE515: Robotic Technology
6. EE559: Nuclear Instrumentation

Specialization Elective -IV

1. EE561: Artificial Intelligence Control Techniques
2. EE563: Microprocessor Based System Design
3. EE565: Design of Intelligent Controllers
4. EE567: Digital Signal Processors
5. EE569: Digital Speech and Image Processing
6. EE571: Biomedical Instrumentation

Open Elective - I

1. EE581: Probabilistic Risk Assessment
2. EE583: Reliability Centered Maintenance
3. EE585: Renewable & Non-Conventional Energy Sources