

GAUTAM BUDDHA UNIVERSITY

GAUTAM BUDH NAGAR-201310

SCHOOL OF ENGINEERING

REVISED COURSE STRUCTURE

(Five Years Integrated Dual Degree Programme (Electrical Engineering))

Batch 2011-16 onwards

5th Board of Studies Meeting (June 01, 2012)



DEPARTMENT OF ELECTRICAL ENGINEERING

School of Engineering

Gautam Buddha University

Gautam Budh Nagar-201310

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	EE102	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	ME102	Workshop Practices	0-0-3	2
10	CS181	Computer Programming Lab-I	0-0-3	2
11	EE104	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	EC101	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	EC1813	Basic Electronics Lab	0-0-2	1
11	CE103	Engineering Graphics	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	Network Theory	3-1-0	4
4	EE205	Electrical Measurement and Measuring Instruments	3-1-0	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	Network Theory Lab	0-0-2	1
8	EE211	Electrical Machine Lab - I	0-0-3	2
9	EE215	Electrical Measurement and Measuring Instrumentation Lab	0-0-2	1
10	GP201	General Proficiency	-	1
		Total	17-4-7	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	Measurement and Instrumentation	2-0-0	2
3	EE204	Electronic Devices & Circuits (EDC)	3-0-0	3
4	EE226	Signal & Systems	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>		
8	EE214	Electrical Machine - II	0-0-3	2
9	EE216	Measurements and Instrumentation Lab	0-0-2	1
7	EE218	EDC Lab (Lab in ICT)	0-0-3	2
10	GP202	General Proficiency	-	1
		Total	17-3-8	26
		Total Contact Hour	28	

SEMESTER – V (Session 2011-16 onward)				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	EE301	Transmission & Distribution of Electric Power	3-1-0	4
2	EE303	Electromagnetic Field Theory	2-1-0	3
3	EE305	Control System-I	3-1-0	4
4	EE307	Digital Electronics	3-0-0	3
5	EE309	Power Electronics	3-0-0	3
6	ME311	Principles of Technology Management	2-0-0	2
		<u>PRACTICALS</u>		
7	EE313	Control System Lab	0-0-3	2
8	EE319	Digital Electronics Lab (Lab in ICT)	0-0-3	2
9	EE317	MATLAB Programming Lab (CAD Lab)	0-0-3	2
10	GP301	General Proficiency		1
		Total	16-3-9	26
		Total Contact Hours	28	

SEMESTER – V (Session 2010-15 batch only)				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	EE301	Transmission & Distribution of Electric Power	3-0-0	3
2	EE323/EE226	Signal & Systems	3-1-0	4
3	EE305	Control System-I	3-1-0	4
4	EE321	Electrical Measurement & Measuring Instruments	3-0-0	3
5	EE309	Power Electronics	3-0-0	3
6	ME311	Principles of Technology Management	2-0-0	2
		<u>PRACTICALS</u>		
7	EE313	Control System Lab	0-0-3	2
8	EE331	Electrical Measurement & Measuring Lab	0-0-3	2
9	EE333	Circuit Analysis 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	EE302	Electric Drives	3-1-0	4
2	EE304	Switch Gear & Protection	3-1-0	4
3	EE306	Communication Systems	2-1-0	3
4	EE308	Control System-II	3-0-0	3
5	EE310	Micro Processor & Micro Controller	3-0-0	3
6	ME312	Entrepreneurship & Innovation	2-0-0	2
		<u>PRACTICALS</u>		
7	EE312	Switch Gear & Protection Lab	0-0-3	2
8	EE314	Power Electronics & Drives Lab	0-0-3	2
9	EE316	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	2-0-0	2
2	EE401	Digital Signal Processing	2-1-0	3
3	EE403	Power System Analysis	3-1-0	4
4	EE405	Energy Audit and Management	3-0-0	3
5		Elective – I	3-0-0	3
6		Elective – II	2-1-0	3
		<u>PRACTICALS</u>		
7	EE441	Power System Lab	0-0-3	2
8	EE443	Advance Power Electronics Lab	0-0-3	2
9	EE445	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	EE402	High Voltage Engineering	3-0-0	3
2	EE404	Power System Planning & Reliability	3-1-0	4
3	EE406	Process Modelling and Control	3-0-0	3
4	ME540/ME406	Modeling and Simulation	3-1-0	4
5		Specialisation Elective-I	2-1-0	3
6		Specialisation Elective- II	3-0-0	3
		<u>PRACTICALS</u>		
7	EE432	Minor Project	0-0-3	2
8	EE434	Seminar	0-0-3	2
9	GP402	General Proficiency		1
		Total	17-3-6	25
		Total Contact Hours	26	

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	EE601/EE501	Power System Dynamics	3-0-0	3
2	EE603/EE503	Distribution System Analysis & Control	2-1-0	3
3	EE605/EE505	HVDC and FACTS	3-1-0	4
4		Specialization Elective- III	3-1-0	3
5		Specialization Elective-IV	2-1-0	3
		PROJECTS		
6	EE502	Research Project (Preliminary)**	1**-0-4	3
7	EE506	Power System Modelling & Simulation Lab	0-0-2	2
8	GP501	General Proficiency		1
		Total	14-4-6	22
		Total Contact Hours	24	

*** 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	EE504	Research Project		21
2	GP502	General Proficiency	-	1
		Total		22

Grand Total Credits of Dual Degree = 261

SEMESTER – IX (Instrumentation & Control)				
Sr. No.	Subject Code	Courses	L-T-P	Credits
		<u>THEORY</u>		
1	EE541	PC/Micro-controller based Instrumentation	3-1-0	4
2	EE543	Non Linear Control System	3-0-0	3
3	EE545	Environment Monitoring Instrumentation	3-1-0	4
4		Specialization Elective- III	2-1-0	3
5		Specialization Elective - IV	2-1-0	3
		<u>PROJECTS</u>		
6	EE508	Process Control Lab /Seminar-II	0-0-2	1
7	EE502	Research Project (Preliminary)	1**-0-4	3
8	GP501	General Proficiency		1
		Total	14-4-6	22
		Total Contact Hours	24	

*** 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	EE504	Research Project		21
2	GP502	General Proficiency	-	1
		Total		22

Grand Total Credits of Dual Degree = 261

List of Electives for B.Tech

Elective-I & II

1. EE407: Utilization of Electric Power & SCADA Systems
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
12. EE431: Soft Computing Techniques
13. EE433: Power Conditioning
14. EE435: Renewable & Non-Conventional Energy Sources
15. EE437: Project Engineering & Management
16. EE439: Operation Research

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: Reliability Centered Maintenance
4. EE414: Advanced Power System Protection
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: Non Linear Control System
10. EE426: Hydraulic and Pneumatic Instrumentation
11. EE428: Advanced Control Theory

Specialization Elective –III

1. EE507: Power Converters & Applications
2. EE509: Probabilistic Risk Assessment
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: Parallel & Distributed Computing
4. EE527: Load and Energy Management
5. EE529: Digital Controllers in Power Electronics Applications
6. EE531: Power Quality

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: Reliability Centered Maintenance
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: Digital Control
10. EE426: Hydraulic and Pneumatic Instrumentation
11. EE428: Advanced Control Theory

Specialization Elective -III

1. EE551: Parallel Process & Real Time Systems
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
7. EE561: Optimal Control System

Specialization Elective -IV

1. EE571: Applied System Theory
2. EE573: Microprocessor Based System Design
3. EE575: Adaptive Control Systems
4. EE577: Digital Signal Processors
5. EE579: Digital Speech and Image Processing
6. EE591: Biomedical Instrumentation
7. EE593: Optimal Control Theory

