Gautam Buddha University

School of Engineering, Department of Electrical Engineering

Course structure of 3 Year M. Tech. Programme in Instrumentation and Control

(For Working Professionals)

(Effective from: Session 2024-25)

SEMESTER-I				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	MA406/MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4
2.	EE-531	Advance Instrumentation	3-0-0	3
3.	EE532	Robust and Adaptive Control	2-1*-0	3
		PRACTICALS/PROJECT		
4.	EE-553	Adv. Instrumentation & Control Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**
		Total Contact Hours	13	

**Tutorial will be conducted in MATLAB programming lab and final exam will also be held in MATLAB programming lab*

SEMESTER-II				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	MA406/MA507/MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4
2.	EE-533	Advance Process Control	3-0-0	3
3.	EE534	Biomedical Instrumentation	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE548	Biomedical & Virtual Instrumentation Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**
		Total Contact Hours	13	

SEMESTER-III				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE631	Digital Instrumentation	3-1-0	4
2.	EE633	Digital & Non-Linear Control	3-0-0	3
3.		Elective-I	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE667	Digital & Non-Linear Control Lab	0-0-2	1
5.	EE-597	Seminar	0-0-3	2
6.	GP	General Proficiency	-	NC
		Total	-	**13**
		Total Contact Hours	15	

SEMESTER-IV				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE-535	Optimal Control Theory	3-0-0	3
2.	EE536	Advance Transducer & Sensors	3-0-0	3
3.		Open Elective	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE598	Project	0-0-10	5
5.	GP	General Proficiency	-	NC
		Total	-	**14**
		Total Contact Hours	19	

Open Elective: Course offered from other school/within the department

SEMESTER-V				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.		Specialized Elective- I	3-0-0	3
2.		Specialized Elective-II	3-0-0	3
3.		Specialized Elective-III	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE699	Dissertation-I	6*-0-3	8
5.	GP	General Proficiency	-	NC
		Total	-	**17**
		Total Contact Hours	12	

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

SEMESTER-VI					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		PRACTICALS/PROJECT			
1.	EE698	Dissertation-II	-	22	EDP-I3
2.	GP	General Proficiency	-	NC	
`		Total	-	**22**	
		Total Contact Hours	**22**		

Grand Total Credits = 90

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

Elective-I:

1. EE537: Calibration and Testing in Instrumentation
2. EE539: Nanomaterials & Applications
3. EE541: Hydraulic and Pneumatic Control
4. EE543: Embedded System
5. EE545: Advance Digital Signal Processing
6. EE547: Industrial Instrumentation & Control
7. EE549: Advance Microprocessors and Interfacing
8. EE551: Introduction to MEMS
9. EE589: Wavelet Methods in Engineering

Specialized Elective-I

1. EE538: Mechatronics
2. EE540: Computer Aided Design of Instrumentation System
3. EE542: Intelligent Instrumentation
4. EE544: Virtual Instrumentation
5. EE546: Environmental Instrumentation & Control

Specialized Elective-II

1. EE635: Stochastic Control
2. EE637: Ultrasonic Instrumentation & Sensors
3. EE639: Digitized Automation and Control
4. EE641: Advance Sensors and Biomaterials
5. EE643: Transducer Technology
6. EE645: Data Acquisition & Signal Conditioning
7. EE647: Artificial Intelligence & Neural Networks
8. EE649: Advance Instrumentation and Process Control
9. EE651: Medical Image Processing
10. EE681: Soft Computing Techniques

Specialized Elective-III

1. EE653: Digital Image Processing
2. EE655: Parallel Process & Real Time System
3. EE657: Opto-Electronics based Instrumentation
4. EE659: Robotics
5. EE661: SCADA Based Measurements
6. EE663: Electrical Engineering Management
7. EE665: Research Techniques and Methodology

Gautam Buddha University
School of Engineering, Department of Electrical Engineering
Course structure of 3 Year M. Tech. Programme in Power Systems
(For Working Professionals)

(Effective from: Session 2024-25)

SEMESTER-I				
S. No.	**Subject Code**	**Courses**	**L-T- P**	**Credit**
		THEORY		
1.	MA406/ MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4
2.	EE571	Power System Analysis and Control	3-0-0	3
3.	EE573	Power System Transients	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE591	Power System Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**

SEMESTER-II				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	MA406/ MA507 / MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4
2.	EE574	Power System Planning and Reliability	3-0-0	3
3.	EE576	Power System Design	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE588	Power System Simulation Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**

SEMESTER-III				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE671	Power System Dynamics & Control	3-0-0	3
2.	EE572	Advance Power System Protection	3-0-0	3
3.		Elective-I	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE697	Distribution Network Lab	0-0-2	1
5.	EE597	Seminar	0-0-3	2
6.	GP	General Proficiency	-	NC
		Total	-	**12**

SEMESTER-IV				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE575	Renewable Energy Sources	3-0-0	3
2.	EE673	HVDC and FACTS	3-1-0	4
3.		Open Elective	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE598	Project	0-0-10	5
5.	GP	General Proficiency	-	NC
		Total	**-**	**15**

Open Elective: Course offered from other school/within the department

SEMESTER-V				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.		Specialized Elective- I	3-0-0	3
2.		Specialized Elective-II	3-0-0	3
3.		Specialized Elective-III	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE699	Dissertation-I	6*-0-3	8
5.	GP	General Proficiency	-	NC
		Total	**-**	**17**

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

SEMESTER-VI				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		PRACTICALS/PROJECT		
1.	EE698	Dissertation-II	-	22
2.	GP	General Proficiency	-	NC
		Total	**-**	**22**

Grand Total Credits = 90

List of Electives for M. Tech. (Power System)

Elective-I:

1. EE579: Cyber Security in Power Systems
2. EE581: Restructured Power System
3. EE583: Power Conditioning
4. EE587: Micro-Grids Systems
5. EE593: Modelling and Planning of Energy Systems
6. EE595: Computer Methods in Power Systems
7. EE699: Distribution System Analysis & Control

Specialized Elective-I:

1. EE578: Electric Vehicle Charging Substation
2. EE580: Machine Learning and Data Analytics in Power Systems
3. EE582: Power Sector Economics and Management
4. EE584: EHVAC Transmission
5. EE586: Power System Optimization

Specialized Elective-II:

1. EE675: Computer Applications to Power System Analysis
2. EE677: Control and Operation of Active Distribution Network
3. EE679: Power Quality Analysis and Mitigation
4. EE681: Soft Computing Techniques
5. EE683: Distributed Generation and Microgrids
6. EE695: Power System Quality

Specialized Elective III:

1. EE685: SCADA and Phasor Measurement Unit
2. EE687: Optimal Control Theory and Power System Applications
3. EE689: Demand Side Management
4. EE691: Power System Optimization
5. EE693: Electric Power Distribution

Gautam Buddha University

School of Engineering, Dept. of Electrical Engineering

Course structure of 3 Year M. Tech. Programme in Power Electronics and Drives

(For Working Professionals)

(Effective from: Session 2024-25)

SEMESTER-I				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	MA406/MA507 /MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4
2.	EE501	Power Electronics Devices &Magnetics	3-0-0	3
3.	EE502	Industrial Instrumentation and Automation	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE513	Advance Power Electronic Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**
		Total Contact Hours	13	

SEMESTER-II				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	MA406/MA507 /MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4
2.	EE503	Modeling of Electrical Apparatus	3-0-0	3
3.	EE504	Electric Drive Systems	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE516	Advance Electric Drives Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**
		Total Contact Hours	13	

SEMESTER-III				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE505	DC Power Converters	3-0-0	3
2.	EE506	Digital Controllers Architecture and Interfacing	3-0-0	3
3.		Elective-I	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE623	Power Converter and SimulationLab	0-0-3	2
5.	EE597	Seminar	0-0-3	2
6.	GP	General Proficiency	-	NC
		Total	-	**13**
		Total Contact Hours	15	

SEMESTER-IV				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE601	Special Electromechanical Devices	3-0-0	3
2.	EE603	HVDC & Custom Power Device	3-0-0	3
3.		Open Elective	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE598	Project	0-0-10	5
5.	GP	General Proficiency	-	NC
		Total	-	**14**
		Total Contact Hours	19	

Open Elective: Course offered from other school/within the department

SEMESTER-V				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.		Specialized Elective- I	3-0-0	3
2.		Specialized Elective-II	3-0-0	3
3.		Specialized Elective-III	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE699	Dissertation-I	6*-0-3	8
5.	GP	General Proficiency	-	NC
		Total	-	**17**
		Total Contact Hours	18	

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

SEMESTER-VI				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		PRACTICALS/PROJECT		
1.	EE698	Dissertation-II	-	22
2.	GP	General Proficiency	-	NC
		Total	-	**22**
		Total Contact Hours	22	

Grand Total Credits = 90

List of Electives for M. Tech. (Power Electronics and Drives)

Elective-I:

1. EE507: Advance AI and Soft Computing Techniques
2. EE509: Drive Systems and Optimization Techniques
3. EE511: Nonlinear Control System
4. EE589: Wavelet Methods in Engineering
5. EE543: Embedded System
6. EE665: Research Techniques and Methodology

Specialized Elective-I

1. EE508: AC Power Converters
2. EE510: HVAC Transmission and Technology
3. EE512: Custom Power Devices and Technology
4. EE514: Control and Estimation of Electric Drive

Specialized Elective-II

1. EE605: Power Quality
2. EE607: Energy Storage System and Charging Control
3. EE609: Applications of Converters for Renewable Energy Systems
4. EE611: Smart Grid

Specialized Elective III

1. EE613: Supervisory Control and Distribution Automation
2. EE615: Distribution Generation System and Design
3. EE617: Digital Signal Processing and its Applications
4. EE619: Robotics and Vehicular Power Electronics
5. EE621: Computer Aided Design of Electrical Apparatus

Department of Electrical Engineering
School of Engineering, Gautam Buddha University
Course structure of 3 Year M. Tech. Programme in Instrumentation and Signal Processing
(For Working Professionals)

(Effective from: Session 2024-25)

SEMESTER-I				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE765/ EE751	Optimization Techniques in Engineering/Modelling & Simulation	3-1-0	4
2.	EE753	Advanced Industrial and ElectronicInstrumentation	3-0-0	3
3.	EE755	Digital Signal and Image Processing	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE-553	Adv. Instrumentation and Signal Processing Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**
		Total Contact Hours	13	

SEMESTER-II				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE765 EE751	Optimization Techniques inEngineering/ Modelling & Simulation	3-1-0	4
2.	EE757	Bioelectric Signals and Processing	3-0-0	3
3.	EE534	Biomedical Instrumentation	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE548	Biomedical & Virtual Instrumentation Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**
		Total Contact Hours	13	

SEMESTER-III				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE752	Smart Sensors and MEMS	3-0-0	3
2.	EE773	Advances in Signal and Image Processing	3-0-0	3
3.		Elective-I	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE777	Advance Signal Processing Lab	0-0-2	1
5.	EE-597	Seminar	0-0-3	2
6.	GP	General Proficiency	-	NC
		Total	-	**12**
		Total Contact Hours	14	

SEMESTER-IV				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE771	Telemetry and SCADA	3-1-0	4
2.	EE754	Medical Image and Signal Analysis	3-0-0	3
3.		Open Elective	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE598	Project	0-0-10	5
5.	GP	General Proficiency	-	NC
		Total	-	**15**
		Total Contact Hours	19	

Open Elective: Course offered from other School/with in the Department

SEMESTER-V				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.		Specialized Elective- I	3-0-0	3
2.		Specialized Elective-II	3-0-0	3
3.		Specialized Elective-III	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE699	Dissertation-I	6*-0-3	8
5.	GP	General Proficiency	-	NC
		Total	-	**17**
		Total Contact Hours	18	

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

SEMESTER-VI				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		PRACTICALS/PROJECT		
1.	EE698	Dissertation-II	-	22
2.	GP	General Proficiency	-	NC
		Total	-	**22**
		Total Contact Hours	22	

Grand Total Credits = 90

List of Electives for M. Tech. (Instrumentation and Signal Processing)

Elective-I

1. EE759: Analog Signal Processing
2. EE761: Advanced Sensing Techniques
3. EE763: Real-Time Signal Processing
4. EE547: Industrial Instrumentation & Control
5. EE589: Wavelet Methods in Engineering
6. EE767: Machine Learning for Signal Processing

Specialized Elective-I

1. EE758: Ultrasonic and Laser Instrumentation
2. EE760: Wireless Sensors and Networks
3. EE762: Computational Methods and Algorithms in Signal Processing
4. EE764: Data Communication Systems
5. EE766: Distributed Signal Processing in Sensor Networks
6. EE768: Adaptive Systems and Signal Processing
7. EE770: Intelligent and Virtual Instrumentation

Specialized Elective-II

1. EE631 Digital Instrumentation
2. EE779: Microprocessor Based Medical Instruments
3. EE637: Ultrasonic Instrumentation & Sensors
4. EE641: Advance Sensors and Biomaterials
5. EE645: Data Acquisition & Signal Conditioning
6. EE651: Medical Image Processing
7. EE681: Soft Computing Techniques
8. EE841: IoT and Industrial IoT

Specialized Elective-III

1. EE775: Machine Learning
2. EE797: Advanced Digital System Design
3. EE781: Advanced Computer Controlled Systems
4. EE783: VLSI for Tele-Communication
5. EE653: Digital Image Processing
6. EE661: PLC and SCADA Based Measurements
7. EE665: Research Techniques and Methodology

Department of Electrical Engineering
School of Engineering, Gautam Buddha University, Gr. Noida (U.P.)

Course structure of 3 Year M. Tech. Programme in Renewable Energy Systems (For Working Professionals)

(Effective from: Session 2024-25)

SEMESTER-I				
S. No.	**Subject Code**	**Courses**	**L-T- P**	**Credit**
		THEORY		
1.	MA406/ MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4
2.	EE575	Renewable Energy Sources	3-0-0	3
3.	EE571	Power System Analysis and Control	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE591	Power System Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**

SEMESTER-II				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE702	Solar Energy Systems	3-0-0	3
2.	EE704	Wind Energy Systems	3-0-0	3
3.	EE572	Advance Power System Protection	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE588	Power System Simulation Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**11**

SEMESTER-III				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE577	Electrical Power Generation System	3-0-0	3
2.	EE683	Distributed Generation and Micro-grids	3-0-0	3
3.		Elective-I	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE723	Renewable Energy Systems Lab	0-0-3	2
5.	EE597	Seminar	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total	-	**13**

SEMESTER-IV				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE701	Distributed Energy Integration	3-0-0	3
2.	EE706	Energy Audit and Management	3-0-0	3
3.		Open Elective	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE598	Project	0-0-10	6
5.	GP	General Proficiency	-	NC
		Total	-	**15**

Open Elective: Course offered from other School/with in the Department

SEMESTER-V				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.		Specialized Elective- I	3-0-0	3
2.		Specialized Elective-II	3-0-0	3
3.		Specialized Elective-III	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE699	Dissertation-I	6*-0-3	8
5.	GP	General Proficiency	-	NC
		Total	-	**17**

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

SEMESTER-VI				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		PRACTICALS/PROJECT		
1.	EE698	Dissertation-II	-	22
2.	GP	General Proficiency	-	NC
		Total	-	**22**

Grand Total Credits = 90

List of Electives for M. Tech. (Renewable Energy Sources)

Elective-I:

1. EE695: Distribution System Analysis and Control
2. EE709: Energy Policy & Planning
3. EE711: Industrial Waste Management and Recycling
4. EE713: Electric Vehicle
5. EE715: Pollution Control in Power Plants
6. EE717: AI Techniques in Power Systems
7. EE719: Industrial and Commercial Applications of Renewable Energy Sources

Specialized Elective-I:

1. EE708: Energy Storage Technology
2. EE710: Hydrogen Energy and Fuel cell
3. EE712: Solid Waste Management
4. EE714: Integrated Energy Systems
5. EE574: Power System Planning and Reliability

Specialized Elective-II and III:

1. EE725: Energy Efficient Materials
2. EE727: SCADA and PMU
3. EE729: Hybrid System of Conventional Energies
4. EE731: Rural Electrification & its Management
5. EE733: Smart Energy Management System
6. EE735: Power Substation Engineering
7. EE737: Electric Power Vehicle
8. EE739: Economics and Financing of Renewable Energy Systems
9. EE741: Special Topics in Power Systems
10. EE743: Sustainable Energy Sources

Gautam Buddha University, Gr. Noida (U.P.)
School of Engineering, Department of Electrical Engineering

Course structure of 3 Year M. Tech. Programme Power Systems & Energy Management (For Working Professionals)

(Effective from: Session 2024-25)

SEMESTER-I				
S. No.	**Subject Code**	**Courses**	**L-T- P**	**Credit**
		THEORY		
1.	EEM101*	Automation System*	3-1-0	4
2.	EE 681	Soft Computing Techniques	3-0-0	3
3.	EE571	Power System Analysis and Control	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE591	Power System Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**
		Total Contact Hours	13	

*MA406/MA507/MA402:Operation Research Optimization Techniques/Modelling & Simulation

SEMESTER-II				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EEM203	Communication Protocols	3-1-0	4
2.	EEM105	Power System Modelling	3-0-0	3
3.	EEM103	Instrumentation Systems	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE588	Power System Simulation Lab	0-0-3	2
5.	GP	General Proficiency	-	
		Total		**12**
		Total Contact Hours	13	

SEMESTER-III				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EEM201	Transmission and Distribution Automation	3-0-0	3
2.	EE 503	Power System Restructuring and Deregulation	3-0-0	3
3.		Elective-I	3-0-0	3
		PRACTICALS/PROJECT		
4.	EEM591	SCADA Lab	0-0-2	1
5.	EE597	Seminar	0-0-3	2
	GP	General Proficiency		
		Total	-	**12**
		Total Contact Hours	13	

SEMESTER-IV				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EEM301	Energy Management Systems	3-1-0	4
2.	EE 503	Power System Restructuring and Deregulation	3-0-0	3
3.		Open Elective	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE598	Project	0-0-10	5
5.	GP	General Proficiency		
		Total	-	**15**
		Total Contact Hours	20	

Open Elective: Course offered from other School/with-in the department

SEMESTER-V				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.		Specialized Elective- I	3-0-0	3
2.		Specialized Elective-II	3-0-0	3
3.		Specialized Elective-III	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE699	Dissertation-I	6*-0-3	8
5.	GP	General Proficiency	-	
		Total	-	**17**

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

SEMESTER-VI				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		PRACTICALS/PROJECT		
1.	EE698	Dissertation-II	-	22
2.	GP	General Proficiency	-	
		Total	-	**22**
		Total Contact Hours	22	

Grand Total Credits = 90

List of Electives for M. Tech. (Power Systems & Energy Management)

Elective I:

1. EE 685 SCADA and Phaser Measurement Unit
2. Electric Power Project Evaluation and Pricing
3. Modelling and Planning of Energy Systems
4. Computer Methods in Power Systems
5. Power System Quality
6. Smart Grid
7. Grid Instrumentation and Communication Systems
8. EE575 Renewable and Non Conventional Energy Sources

Specialized Elective- I:

1. EE 504 Smart Energy Systems
2. EE 503 Power System Restructuring and Deregulation
3. EE 501 Power Generation Systems
4. EE572 Advance Power System Protection

Specialized Elective-II:

1. Machine Learning and Data Analytics in Power Systems
2. Artificial Intelligence Techniques to Power Systems
3. Cyber Security in Power Systems
4. Electric Vehicle Charging Substation
5. Micro-Grids Systems
6. Energy Policy, Governance and Regulations
7. EE671 Power System Dynamics and Control

Specialized Elective-III:

1. EE 689 Demand Side Management
2. EE 691 Power System Optimization
3. EE 695 Distribution System Analysis and Control
4. Sustainable Energy Sources
5. Power Substation Engineering
6. Stochastic systems, Optimization and Control in Power systems

Department of Electrical Engineering

School of Engineering, Gautam Buddha University Gr. Noida (U.P.)

Course structure of 3 Year M. Tech. Programme in Control & Robotics (For Working Professionals)

(Effective from: Session 2024-25)

SEMESTER-I				
S. No.	**Subject Code**	**Courses**	**L-T- P**	**Credit**
		THEORY		
1.	EE-801*	Control System Design*	3-0-0	4
2.	EE-803	Drives for Control & Robotics	3-0-0	3
3.	EE-805	Advance Process Control and PLC	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE-811	PLC and SCADA Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**

*MA406/MA507/MA402: Operation Research Optimization Techniques/Modelling & Simulation

SEMESTER-II				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE-802	Adaptive and Robust Control	3-0-0	3
2.	EE-804	Sensors for Engineering Applications	3-0-0	3
3.	EE-807	Fundamental of Robotics	3-1-0	4
		PRACTICALS/PROJECT		
4.	EE-810	Robotics Lab	0-0-3	2
5.	GP	General Proficiency	-	NC
		Total		**12**

SEMESTER-III				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE-633	Digital and Non-Linear Control System	3-0-0	3
2.	EE-808	Robot Kinematics and Dynamics	3-0-0	3
		Elective-I	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE-667	Digital & Non-Linear Control Lab	0-0-2	1
5.	EE597	Seminar	0-0-3	2
6.	GP	General Proficiency	-	NC
		Total	-	**12**

SEMESTER-IV				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.	EE-806	ANN and Fuzzy Systems	3-0-0	3
2.	EE-823	Industrial Robotics	3-0-0	3
3.		Open Elective	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE598	Project	0-0-10	6
5.	GP	General Proficiency	-	NC
		Total	-	**15**

Open Elective: Course offered from other School/with-in the department

SEMESTER-V				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		THEORY		
1.		Specialized Elective- I	3-0-0	3
2.		Specialized Elective-II	3-0-0	3
3.		Specialized Elective-III	3-0-0	3
		PRACTICALS/PROJECT		
4.	EE699	Dissertation-I	6*-0-3	8
5.	GP	General Proficiency	-	NC
		Total	-	**17**

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

SEMESTER-VI				
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**
		PRACTICALS/PROJECT		
1.	EE698	Dissertation-II	-	22
2.	GP	General Proficiency	-	NC
		Total	-	**22**

Grand Total Credits = 90

List of Electives

Elective-I

1. EE-809: Linear system Theory
2. EE-813: Programming in Python
3. EE-815: Industrial Automation and Control
4. EE-817: Machine Learning for Robotics

Specialized Elective-I

1. EE-812: Image Processing
2. EE-814: Artificial Intelligence
3. EE-816: DCS and SCADA
4. EE-818: Industrial Networks Protocols

Specialized Elective-II & III

1. EE-825: Model Predictive Control
2. EE-827: Wavelet Theory
3. EE-831: Intelligent Control
4. EE-833: Navigation Guidance and Control
5. EE-835: Robotics and Automation
6. EE-837: Model Order Reduction
7. EE-839: Robot Programming and Simulation
8. EE-841: IoT and Industrial IoT

Open Elective

1. Numerical Methods and Computer Programming
2. Advance Computer Concepts for Automation
3. Linear Algebra and Vector calculus for Engineers
4. Optimization Techniques in Engineering