Department of Electrical Engineering
School of Engineering, Gautam Buddha University
Course structure of 2 Year M. Tech. Programme in Renewable Energy Systems (2020-22)

SEMESTER-I					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	MA406/ MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	OE-R1
2.	EE575	Renewable Energy Sources	3-0-0	3	C-R1
3.	EE577	Electrical Power Generation System	3-0-0	3	C-R2
4.	EE571	Power System Analysis and Control	3-0-0	3	C-R3
5.	EE701	Distributed Energy Integration	3-0-0	3	C-R4
6.		Elective-I	3-0-0	3	
		PRACTICALS/PROJECT			
7.	EE591	Power System Lab	0-0-3	2	C-R4
8.	EE597	Seminar	0-0-3	2	SEC1
9.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**25**		

Open Elective: Course offered from other school

SEMESTER-II					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE702	Solar Energy Systems	3-0-0	3	C-R5
2.	EE704	Wind Energy Systems	3-0-0	3	C-R6
3.	EE706	Energy Audit and Management	3-0-0	3	C-R7
4.	EE572	Advance Power System Protection	3-0-0	3	C-R8
5.		Specialized Elective- I	3-0-0	3	EDSE-R1
6.		**PRACTICALS/PROJECT**			
	EE598	Project	0-0-10	5	EDP-R1
7.	EE588	Power System Simulation Lab	0-0-3	2	C-R9
8.	GP	General Proficiency	-	NC	
		Total		**22**	
		Total Contact Hours	**28**		

SEMESTER-III					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE695	Distribution System Analysis and Control	3-0-0	3	C-R10
2.	EE683	Distributed Generation and Micro-grids	3-0-0	3	C-R11
3.		Specialized Elective-II	3-0-0	3	C-R12
4.		Specialized Elective-III	3-0-0	3	EDSE-R2
5.		**PRACTICALS/PROJECT**			
6.	EE723	Renewable Energy Systems Lab	0-0-3	2	C-R13
7.	EE699	Dissertation-I	6*-0-3	8	EDP-R2
8.	GP	General Proficiency	-	NC	
		Total	-	**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-IV					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		PRACTICALS/PROJECT			
1.	EE698	Dissertation-II	-	22	EDP-R3
2.	GP	General Proficiency	-	NC	
		Total	-	**22**	
		Total Contact Hours	**22**		

Grand Total Credits = 90

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

Elective-I:

1. EE709: Energy Policy & Planning
2. EE711: Industrial Waste Management and Recycling
3. EE713: Electric Vehicle
4. EE715: Pollution Control in Power Plants
5. EE717: AI Techniques in Power Systems
6. EE719: Industrial and Commercial Applications of Renewable Energy Sources
7. M.Tech. (PS, PED and I&C)-I Sem and Int. B.Tech.+M.Tech./MBA-VII Sem Electives

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
6. Specialized Electives-I of M. Tech. (PS, PED and I&C)

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
7. EE739: Economics and Financing of Renewable Energy Systems
8. EE741: Special Topics in Power Systems
9. EE743: Sustainable Energy Sources
10. Specialized Electives-II of M. Tech. (PS, PED and I&C)

Open Elective :

Environment Engineering
Environmental Regulations
Any other subject offered from other department

Nomenclature:

1. AEC: Ability Enhancement Courses
    - AEC-C: Ability Enhancement Courses Compulsory
    - SEC: Skill Enhancement Courses
2. CC: Core Courses
3. Elective Courses
    - E-DSE: Discipline Specific Elective
    - E-GE: Generic Elective
    - E-DP: Dissertation and Project

Gautam Buddha University
School of Engineering
Department of Electrical Engineering
Course structure of 2 Year M. Tech. Programme in Power Systems (2020-22)

SEMESTER-I					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	MA406/ MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-P1
2.	EE571	Power System Analysis and Control	3-0-0	3	C-P1
3.	EE573	Power System Transients	3-0-0	3	C-P2
4.	EE575	Renewable Energy Sources	3-0-0	3	C-P3
5.		Elective-I	3-0-0	3	EDSE-P1
6.		Open Elective	3-0-0	3	OE-P1
		PRACTICALS/PROJECT			
7.	EE591	Power System Lab	0-0-3	2	C-P4
8.	EE597	Seminar	0-0-3	2	SEC1
9.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**25**		

Open Elective: Course offered from other school

SEMESTER-II					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	MA406/MA507 /MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-P2
2.	EE572	Advance Power System Protection	3-0-0	3	C-P5
3.	EE574	Power System Planning and Reliability	3-0-0	3	C-P6
4.	EE576	Power System Design	3-0-0	3	C-P7
5.		Specialized Elective- I	3-0-0	3	EDSE-P2
6.		**PRACTICALS/PROJECT**			
	EE598	Project	0-0-10	5	EDP-P1
7.	EE588	Power System Simulation Lab	0-0-3	2	C-P8
8.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**29**		

SEMESTER-III					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE671	Power System Dynamics & Control	3-0-0	3	C-P9
2.	EE673	HVDC and FACTS	3-1-0	4	C-P10
3.		Specialized Elective-II	3-0-0	3	EDSE-P3
4.		Specialized Elective-III	3-0-0	3	EDSE-P4
5.		**PRACTICALS/PROJECT**			
6.	EE697	Distribution Network Lab	0-0-2	1	CP11
7.	EE699	Dissertation-I	6*-0-3	8	EDP-P2
8.	GP	General Proficiency	-	NC	
		Total	-	**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-IV					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		PRACTICALS/PROJECT			
1.	EE698	Dissertation-II	-	22	EDP-P3
2.	GP	General Proficiency	-	NC	
		Total	-	**22**	
		Total Contact Hours	**22**		

Grand Total Credits = 90

Open Elective: Course offered from other school

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
8. M.Tech. (PED, I&C and RES)-I Sem and Int. B.Tech.+M.Tech./MBA-VII Sem Electives

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
6. Specialized Electives-I of M. Tech. (PED, I&C and RES)

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
7. Specialized Electives-II of M. Tech. (PED, I&C & RES)

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
6. Specialized Electives-III of M. Tech. (PED, I&C & RES)

Nomenclature:

1. AEC: Ability Enhancement Courses
    - AEC-C: Ability Enhancement Courses Compulsory
    - SEC: Skill Enhancement Courses
2. CC: Core Courses
3. Elective Courses
    - E-DSE: Discipline Specific Elective
    - E-GE: Generic Elective
    - E-DP: Dissertation and Project

Gautam Buddha University
School of Engineering
Department of Electrical Engineering
Course structure of 2 Year M. Tech. Programme in Instrumentation and Control (2020-22)

SEMESTER-I					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	MA406/MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-I1
2.	EE-531	Advance Instrumentation	3-0-0	3	C-I1
3.	EE-533	Advance Process Control	3-0-0	3	C-I2
4.	EE-535	Optimal Control Theory	3-0-0	3	C-I3
5.		Elective-I	3-0-0	3	EDSE-I1
6.		Open Elective	3-0-0	3	OE-I1
		PRACTICALS/PROJECT			
7.	EE-553	Adv. Instrumentation & Control Lab	0-0-3	2	C-I4
8.	EE-597	Seminar	0-0-3	2	SEC1
9.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**25**		

Open Elective: Course offered from other school

SEMESTER-II					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	MA406/MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-I2
2.	EE532	Robust and Adaptive Control	2-1*-0	3	C-I5
3.	EE534	Biomedical Instrumentation	3-0-0	3	C-I6
4.	EE536	Advance Transducer & Sensors	3-0-0	3	C-I7
5.		Specialized Elective- I	3-0-0	3	EDSE-I2
		PRACTICALS/PROJECT			
6.	EE598	Project	0-0-10	5	EDP-I1
7.	EE548	Biomedical & Virtual Instrumentation Lab	0-0-3	2	C-I8
8.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**29**		

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

SEMESTER-III					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE631	Digital Instrumentation	3-1-0	4	C-I9
2.	EE633	Digital & Non-Linear Control	3-0-0	3	C-I10
3.		Specialized Elective-II	3-0-0	3	EDSE-I3
4.		Specialized Elective-III	3-0-0	3	EDSE-I4
		PRACTICALS/PROJECT			
5.	EE667	Digital & Non-Linear Control Lab	0-0-2	1	C-I11
6.	EE699	Dissertation-I	6*-0-3	8	EDP-I2
7.	GP	General Proficiency	-	NC	
		Total	-	**22**	
		Total Contact Hours	**24**		

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SEMESTER-IV					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

Open Elective: Course offered from other school

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
10. M.Tech. (PED, I&C and RES)-I Sem and Int. B.Tech.+M.Tech./MBA-VII Sem Electives

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
6. Specialized Electives I M. Tech. (PS, PED and RES)

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
11. Specialized Electives-II of M. Tech. (PS, PED & RES)

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
8. Specialized Electives-III of M. Tech. (PS, PED & RES)

Nomenclature:

1. AEC: Ability Enhancement Courses
    - AEC-C: Ability Enhancement Courses Compulsory
    - SEC: Skill Enhancement Courses
2. CC: Core Courses
3. Elective Courses
    - E-DSE: Discipline Specific Elective
    - E-GE: Generic Elective
    - E-DP: Dissertation and Project

Gautam Buddha University
School of Engineering
Department of Electrical Engineering
Course structure of 2 Year M. Tech. Programme in Power Electronics and Drives(2020-22)

SEMESTER-I					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	MA406/ MA507 /MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-D1
2.	EE501	Power Electronics Devises & Magnetics	3-0-0	3	C-D1
3.	EE503	Modeling of Electrical Apparatus	3-0-0	3	C-D2
4.	EE505	DC Power Converters	3-0-0	3	C-D3
5.		Elective-I	3-0-0	3	EDSE-D1
6.		Open Elective	3-0-0	3	OE-D1
		PRACTICALS/PROJECT			
7.	EE513	Advance Power Electronic Lab	0-0-3	2	C-D4
8.	EE597	Seminar	0-0-3	2	SEC1
9.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**25**		

Open Elective: Course offered from other school

SEMESTER-II					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	MA406/ MA507 /MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-D2
2.	EE502	Industrial Instrumentation and Automation	3-0-0	3	C-D5
3.	EE504	Electric Drive Systems	3-0-0	3	C-D6
4.	EE506	Digital Controllers Architecture and Interfacing	3-0-0	3	C-D7
5.		Specialized Elective- I	3-0-0	3	EDSE-D2
		PRACTICALS/PROJECT			
6.	EE598	Project	0-0-10	5	EDP-D1
7.	EE516	Advance Electric Drives Lab	0-0-3	2	C-D8
8.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**29**		

SEMESTER-III					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE601	Special Electromechanical Devices	3-0-0	3	C-D9
2.	EE603	HVDC & Custom Power Device	3-0-0	3	C-D10
3.		Specialized Elective-II	3-0-0	3	EDSE-D3
4.		Specialized Elective-III	3-0-0	3	EDSE-D4
		PRACTICALS/PROJECT			
5.	EE623	Power Converter and Simulation Lab	0-0-3	2	CD11
6.	EE699	Dissertation-I	6*-0-3	8	EDP-D2
7.	GP	General Proficiency	-	NC	
		Total	-	**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-IV					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		PRACTICALS/PROJECT			
1.	EE698	Dissertation-II	-	22	EDP-D3
2.	GP	General Proficiency	-	NC	
		Total	-	**22**	
		Total Contact Hours	**22**		

Grand Total Credits = 90

Open Elective: Course offered from other school

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
7. M.Tech. (PS, I&C and RES)-I Sem

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
5. Specialized Electives-I of M. Tech. (PS, I&C & RES)

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
5. Specialized Electives-II of M. Tech. (PS, I&C & RES)

Specialized Elective III

6. EE613: Supervisory Control and Distribution Automation
7. EE615: Distribution Generation System and Design
8. EE617: Digital Signal Processing and its Applications
9. EE619: Robotics and Vehicular Power Electronics
10. EE621: Computer Aided Design of Electrical Apparatus
11. Specialized Electives-III of M. Tech. (PS, I&C & RES)

Nomenclature:

1. AEC: Ability Enhancement Courses
    - AEC-C: Ability Enhancement Courses Compulsory
    - SEC: Skill Enhancement Courses
2. CC: Core Courses
3. Elective Courses
    - E-DSE: Discipline Specific Elective
    - E-GE: Generic Elective
    - E-DP: Dissertation and Project

Department of Electrical Engineering
School of Engineering, Gautam Buddha University

Course Structure of 2- Year M. Tech. Programme in Control & Robotics (2020-22) onwards

M.Tech. I Semester (Control and Robotics)					
S.N	**Subject Code**	**Course**	**L-T-P**	**Credit**	**Course Type**
THEORY					
1	EE-801	Control System Design	3-0-0	3	CC
2	EE-803	Drives for Control & Robotics	3-0-0	3	AEC-S
3	EE-805	Advance Process Control and PLC	3-0-0	3	CC
4	EE-807	Fundamental of Robotics	3-0-0	3	CC
5	EE	**Elective –I**	3-0-0	3	E-DE
6		**Open Elective**	3-0-0	3	E-OE
PRACTICAL					
7	EE-811	PLC and SCADA Lab	0-0-3	2	CC
8	EE- 597	Seminar	0-0-3	2	AEC-S
9	GP	General Proficiency	--	NC	
		TOTAL	**24 hr**	**22**	

M.Tech. II Semester (Control and Robotics)					
S.N	**Subject Code**	**Course**	**L-T-P**	**Credit**	**Course Type**
THEORY					
1	EE-802	Adaptive and Robust Control	3-0-0	3	CC
2	EE-804	Sensors for Engineering Applications	3-0-0	3	AEC-C
3	EE-806	ANN and Fuzzy Systems	3-0-0	3	AEC-S
4	EE-808	Robot Kinematics and Dynamics	3-0-0	3	CC
5	EE	**Specialized Elective - I**	3-0-0	3	E-DE
PRACTICAL					
5	EE-810	Robotics Lab	0-0-3	2	CC
6	EE - 598	Project	0-0-10	5	E-DP
7	GP	General Proficiency	--	NC	
		TOTAL	**28 hr**	**22**	

M.Tech. III Semester (Control and Robotics)					
S.N	**Subject Code**	**Course**	**L-T-P**	**Credit**	**Course Type**
THEORY					
1	EE-633	Digital and Non Linear Control System	3-0-0	3	CC
2	EE-823	Industrial Robotics	3-0-0	3	CC
3	EE-	Specialized Elective-II	3-0-0	3	E-DE
4	EE-	Specialized Elective-III	3-0-0	3	E-DE
PRACTICAL					
5	EE-667	Digital & Non-Linear Control Lab	0-0-2	1	CC
6	EE-699	Dissertation -I	6*-0-3	8	E-DP
7	GP	General Proficiency	--	NC	
		TOTAL	**23 hr**	**21**	

*Note: * This will not be a usual lecture session but this is one to one interactions of each student with the concerned faculty members.*

M.Tech. IV Semester (Control and Robotics)					
S.N	**Subject Code**	**Course**	**L-T-P**	**Credit**	**Course Type**
1	EE-698	Dissertation-II	0-0-16	22	E-DP
2	GP	General Proficiency	--	NC	
		TOTAL	**22 hr**	**22**	

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
5. Elective-I from M.Tech. (I&C, ISP, PS and PED) and Int. B.Tech.+M.Tech./MBA Elective

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
5. Specialized Elective-I from M.Tech. (I&C, ISP, PS and PED)

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
9. Specialized Elective-II & III from M.Tech. (I&C, ISP, PS and PED)

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
5. Any other relevant subject offered from other department.

Department of Electrical Engineering
School of Engineering, Gautam Buddha University
Course structure of 2 Year M. Tech. Programme in Instrumentation and Signal Processing (2020-22) onwards

SEMESTER-I					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE765/ EE751	Optimization Techniques in Engineering/ Modelling & Simulation	3-1-0	4	EGE-IS1
2.	EE753	Advanced Industrial and Electronic Instrumentation	3-0-0	3	C-IS1
3.	EE755	Digital Signal and Image Processing	3-0-0	3	C-IS2
4.	EE757	Bioelectric Signals and Processing	3-0-0	3	C-IS3
5.	-	Elective-I	3-0-0	3	EDSE-IS1
6.	-	Open Elective	3-0-0	3	OE-IS1
		PRACTICALS/PROJECT			
7.	EE-553	Adv. Instrumentation and Signal Processing Lab	0-0-3	2	C-I4
8.	EE-597	Seminar	0-0-3	2	SEC1
9.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**25**		

Open Elective: Course offered from other School/Department

SEMESTER-II					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE765/ EE751	Optimization Techniques in Engineering/ Modelling & Simulation	3-1-0	4	EGE-IS2
2.	EE752	Smart Sensors and MEMS	3-0-0	3	C-IS5
3.	EE534	Biomedical Instrumentation	3-0-0	3	C-IS6
4.	EE754	Medical Image and Signal Analysis	3-0-0	3	C-IS7
5.		Specialized Elective- I	3-0-0	3	EDSE-IS2
6.		**PRACTICALS/PROJECT**			
	EE598	Project	0-0-10	5	EDP-IS1
7.	EE548	Biomedical & Virtual Instrumentation Lab	0-0-3	2	C-IS8
8.	GP	General Proficiency	-	NC	
		Total		**23**	
		Total Contact Hours	**29**		

SEMESTER-III					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		THEORY			
1.	EE771	Telemetry and SCADA	3-1-0	4	C-IS9
2.	EE773	Advances in Signal and Image Processing	3-0-0	3	C-IS10
3.		Specialized Elective-II	3-0-0	3	EDSE-IS3
4.		Specialized Elective-III	3-0-0	3	EDSE-IS4
5.		**PRACTICALS/PROJECT**			
6.	EE777	Advance Signal Processing Lab	0-0-2	1	CIS-11
	EE699	Dissertation-I	6*-0-3	8	EDP-IS2
7.	GP	General Proficiency	-	NC	
8.		Total	-	**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-IV					Course Type
S. No.	**Subject Code**	**Courses**	**L-T-P**	**Credit**	
		PRACTICALS/PROJECT			
1.	EE698	Dissertation-II	-	22	EDP-IS 3
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. 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
7. M. Tech. (PS, PED, I&C, CR and RES)-I Sem, Electives

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
8. Specialized Electives-I M. Tech. (PS, PED, I&C, CR and RES)

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
9. Specialized Electives-II of M. Tech. (PS, PED, I&C, CR & RES)

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
8. Specialized Electives-III of M. Tech. (PS, PED, I&C, CR & RES)