

Academic Programs:

B.Tech Electronics & Instrumentation Engineering

M.Tech Electronic Instrumentation

B.Tech Electronics & Instrumentation Engineering

Overview: The four year program aims to satisfy the growing needs of trained manpower in various fields of Electronics and Instrumentation. The curriculum consists of eight semester programme. In the first two semesters the students are given instruction in basic sciences and humanities in a manner that would facilitate their smooth passage of from the intermediate level of education and acclimatize them in a professionally oriented learning process.

In the successive six semesters the students are well trained in core subjects like PLC's DCS, SCADA, Microprocessors and Microcontrollers, Virtual Instrumentation which help them to fit into the industry directly without much training. In seventh and eighth semester they work on a project in order to enhance the theoretical and practical knowledge they gained through the past seven semesters. During the seventh semester the students undergo industrial training for a period of forty five days in a reputed industry /Research organization.

Duration: The duration of B.Tech Program is eight semesters spread over four years. Eight semesters include class room instruction, laboratory work, Personality Development, Industrial training and project work.

Syllabus

B.Tech. (EIE) I Semester

Course code	Name of the Course	Category	Credits	Marks			Hours per week			
				Semester End Exam	Con. Eval.	Total	L	T	P	Total
EUREG 101	English Language skills	Humanities	3	60	40	100	3	0	-	3
EURMT 102	Engg. Mathematics - I	Maths	4	60	40	100	3	1	-	4
EURPH 103	Engg. Physics - I	Basic Sc	4	60	40	100	3	1	-	4
EURCH 104	Engg. Chemistry – I	Basic Sc	4	60	40	100	3	1	-	4
EURCS 105	Programming with C	Basic Engg	3	60	40	100	3	0	-	3
EURPH 112/212	Engg. Physics Lab	Basic Engg	3	-	100	100	-	-	4	4
EURCS 113	Programming with C Lab	Basic Sc	2	-	100	100	-	-	4	4
EURME 115/215	Engineering Graphics Lab	Basic Engg	2	-	100	100	-	-	3	3
Total			25	300	500	800	15	3	11	29

B.Tech. (EIE) II Semester

Course code	Name of the Course	Category	Credits	Marks			Hours per week			
				Semester End Exam	Con. Eval.	Total	L	T	P	Total
EUREG 201	English writing skills	Humanities	3	60	40	100	3	0	-	3
EURMT 202	Engg. Mathematics - II	Maths	3	60	40	100	3	0	-	3
EURMT 203	Engg. Mathematics - III	Maths	3	60	40	100	3	0	-	3
EURPH 204	Engg. Physics - II	Basic Sc	3	60	40	100	3	0	-	3
EURCH 205	Engg. Chemistry – II	Basic Sc	3	60	40	100	3	0	-	3
EURCS 206	Object Oriented programming with C++	Basic Engg	3	60	40	100	3	0	-	3
EURCS 213	Objected oriented programming with C++ Lab	Basic Sc	2	-	100	100	-	-	4	4
EURCH 214/114	Engg. Chemistry Lab	Basic Engg	2	-	100	100	-	-	3	3
EUREE 218/118	Electrical & Electronic Workshop Lab	Basic Engg	2	-	100	100	-	-	3	3
Total			24	360	540	900	18	0	10	28

B.Tech. (EIE) III Semester

Course code	Name of the Course	Category	Credits	Marks			Hours per week			
				Semester End Exam	Con. Eval.	Total	L	T	P	Total
EUREI301	Advanced Engg Mathematics	MT	3	60	40	100	3	0	-	3
EUREI302	Thermal Engg. and Fluid Mechanics	CE	3	60	40	100	3	0	-	3
EUREI303	Network Theory	BE	4	60	40	100	3	1	-	4
EUREI304	Electronic Devices and Circuits	BE	4	60	40	100	3	1	-	4
EUREI305	Electrical Machines	BE	3	60	40	100	3	0	-	3
EUREI306	Sensors and Transducers	CE	3	60	40	100	3	0	-	3
EUREI311	Networks and Electrical machines Lab	BE	2	-	100	100	-	-	3	3
EUREI312	Electronic Devices and Circuits lab	BE	2	-	100	100	-	-	3	3
Total			24	360	440	800	18	2	6	26

B.Tech. (EIE) IV Semester

Course Code	Name of the Course	Category	Credits	Marks			Hours per week			
				Semester End Exam	Con. Eval.	Total	L	T	P	Total
EUREI401	Digital Electronics	CE	3	60	40	100	3	0	-	3
EUREI402	Electronic Circuits and Analysis	CE	4	60	40	100	3	1	-	4
EUREI403	Electrical and Electronic Measurements	CE	4	60	40	100	3	1	-	4
EUREI404	Signals & Systems	CE	3	60	40	100	3	0	-	3
EUREI405	Environmental Studies	HS	4	60	40	100	3	1	-	4
EUREI406	Data Structures Using C	CE	3	60	40	100	3	0	-	3
EUREI411	Sensors and Transducers lab	CE	2	-	100	100	-	-	3	3
EUREI412	Electronic Circuit Analysis lab	CE	2	-	100	100	-	-	3	3
EUREI413	English Communication Skills Lab	HS	2	-	100	100			3	3
EUREI414	Industrial Tour	IT	Non-Credit Audit Course							
Total			27	360	540	900	18	3	9	30

B.Tech. (EIE) V Semester

Course code	Name of the Course	Category	Credits	Marks			Hours per week				
				Semester End	Con. Eval.	Total	L	T	P	Total	
EUREI501	Microprocessors & Interfacing	CE	4	60	40	100	3	1	-	4	
EUREI502	Linear IC's & Applications	CE	3	60	40	100	3	0	-	3	
EUREI503	Industrial Instrumentation	CE	3	60	40	100	3	0	-	3	
EUREI504	Control Systems	CE	4	60	40	100	3	1	-	4	
EUREI505	Principles of Communication Engg.	CE	3	60	40	100	3	0	-	3	
EUREI506	Digital Signal Processing	CE	3	60	40	100	3	0	-	3	
EUREI511	Digital ICs Lab	CE	2	-	100	100	-	-	3	3	
EUREI512	Linear ICs Lab	CE	2	-	100	100			3	3	
EUREI513	Measurements Lab	CE	2	-	100	100	-	-	3	3	
EUREI514	Personality Development	HS	Non Credit Audit Course							3	3
Total			26	360	540	900	18	2	12	32	

B.Tech. (EIE) VI Semester

Course code	Name of the Course	Category	Credits	Marks			Hours per week			
				Semester End Exam	Con. Eval.	Total	L	T	P	Total
EUREI601	Industrial Electronics	CE	3	60	40	100	3	0	-	3
EUREI602	Analytical Instrumentation	CE	4	60	40	100	3	1	-	4
EUREI603	Computer Architecture & Organization	CE	3	60	40	100	3	0	-	3
EUREI604	Digital System Design Using VHDL	CE	3	60	40	100	3	0	-	3
EUREI605	Engg Economics & Management	HS	3	60	40	100	3	0	-	3
EUREI606	Process Control	CE	4	60	40	100	3	1	-	4
EUREI611	Process Control Lab	CE	2	-	100	100	-	-	3	3
EUREI612	Microprocessor Lab	CE	2	-	100	100	-	-	3	3
Total			24	360	440	800	18	2	6	26

B.Tech. (EIE) VII Semester

Course code	Name of the Course	Category	Credits	Marks			Hours per week			
				Semester End Exam	Con. Eval.	Total	L	T	P	Total
EUREI701	Bio Medical Instrumentation	CE	3	60	40	100	3	0	-	3
EUREI702	Microcontrollers and Applications	CE	3	60	40	100	3	0	-	3
EUREI703	Computer Control of Processes	CE	3	60	40	100	3	0	-	3
EUREI721 - 723	Departmental Elective I	DE	4	60	40	100	3	1	-	4
EUREI731 - 733	Departmental Elective II	DE	4	60	40	100	3	1	-	4
EUREI711	Bio Medical Instrumentation Lab	CE	2	-	100	100	-	-	3	3
EUREI712	Microcontrollers Lab	CE	2	-	100	100	-	-	3	3
EUREI713	Project I	PW	3	50	50	100	-	-	6	6
EUREI714	Industrial Training	IT	2	-	100	100	-	-	-	-
Total			26	350	550	900	15	2	12	29

B.Tech. (EIE) VIII Semester

Course code	Name of the Course	Category	Credits	Marks			Hours per week			
				Semester End Exam	Con. Evt.	Total	L	T	P	Total
EUREI801	Embedded Systems	CE	3	60	40	100	3	-	-	3
EUREI841 - 843	Departmental Elective III	DE	4	60	40	100	3	1	-	4
EUREI851-8516**	Inter Departmental Elective I	IE	4	60	40	100	3	1	-	4
EUREI861-8619**	Inter Departmental Elective II	IE	4	60	40	100	3	1	-	4
EUREI811	Virtual Instrumentation Lab	CE	2	-	100	100	-	-	3	3
EUREI812	Project II	PW	5	50	50	100	-	-	9	9
EUREI813	Comprehensive Viva	CE	2	100	-	100	-	-	-	-
Total			24	390	310	700	12	3	12	27

*** Inter Departmental Elective will be from other departments .The list of courses that would be offered by the department in any semester will be notified from which student may select a course.*

DEPARTMENTAL ELECTIVE-I

Course Code	Name of the Course	Category	Credits
EUREI721	Optimal Control	DE	4
EUREI722	Robotics and Automation	DE	4
EUREI723	Data Communication & Networks	DE	4

DEPARTMENTAL ELECTIVE-II

Course Code	Name of the Course	Category	Credits
EUREI731	Virtual Instrumentation	DE	4
EUREI732	Neural Networks & Fuzzy Logic	DE	4
EUREI733	Digital Image Processing	DE	4

DEPARTMENTAL ELECTIVE-III

Course Code	Name of the Course	Category	Credits
EUREI841	Fiber Optics & Laser Instrumentation	DE	4
EUREI842	Instrumentation for Petrochemical Industry	DE	4
EUREI843	Digital Control Systems	DE	4

INTER-DEPARTMENTAL ELECTIVE-I

Course Code	Name of the Course
EUREI 851	Remote Sensing & GIS
EUREI 852	Data Base Management Systems
EUREI 853	Software Engineering
EUREI 854	Systems Modeling and Simulation
EUREI 855	Software Project Management
EUREI 856	Artificial Intelligence
EUREI 859	Power Electronics
EUREI 8510	Project Planning and Management
EUREI 8512	Introduction to Micro Electro Mechanical Systems (MEMS)
EUREI 8513	Entrepreneurship
EUREI 8514	Public Administration
EUREI 8516	Equipment for construction Industry

INTER-DEPARTMENTAL ELECTIVE-II

Course Code	Name of the Course
EUREI 861	Environmental Impact Assessment
EUREI 862	Operating Systems
EUREI 863	Web Technologies
EUREI 865	Computer Aided Design
EUREI 867	Mechatronics
EUREI 868	Education Research & Methodologies
EUREI 869	Professional Ethics
EUREI 8611	Thermodynamics
EUREI 8614	Very Large Scale Integrated System Design (VLSI)
EUREI 8615	Fundamentals of Civil Engineering
EUREI 8616	Engineering Materials
EUREI 8617	Computer Networks
EUREI 8619	Managerial & Engineering Economics

M.Tech Electronic Instrumentation

Overview: The basic necessity of foundation for engineering and technology is being laid through graduate and subsequent post graduate courses in this department. The goal of the department is to develop motivated and dynamic team of engineer's, scholars, and researchers who are well adapted to the ever-changing technology. The Department is also well equipped with lab facility for the academic development of the students few of them being process control lab, DSP lab, PLC lab, Virtual Instrumentation Lab etc.

Duration: The duration of M.Tech program is of four semesters spread over two years. Four semester includes class room instruction ,laboratory work and project work

M.Tech. (EI) I Semester

Course code	Name of the Course	Marks			Hours per week				Credits
		Semester End Examination	Continuous Evaluation	Total	L	T	P	Total	
EPREI101	Optimization Techniques	60	40	100	3	-	-	3	3
EPREI102	Industrial Automation	60	40	100	3	-	-	3	3
EPREI103	Advanced Digital Signal Processing	60	40	100	3	-	-	3	3
EPREI104	Analog Devices and Data Conversion Systems	60	40	100	3	-	-	3	3
EPREI105	Embedded Systems	60	40	100	3	-	-	3	3
EPREI121-123	Elective -I	60	40	100	3	-	-	3	3
EPREI111	Instrumentation Lab	-	100	100	-	-	3	3	2
Total									20

List of Electives: Elective-1

EPREI121 - Digital Control Systems
EPREI122 - Robotics and Automation
EPREI123 – Industrial Drives and Control

M.Tech. (EI) II semester

Course code	Name of the Course	Marks			Hours per week				Credits
		Semester End Examination	Continuous Evaluation	Total	L	T	P	Total	
EPREI201	VLSI Design	60	40	100	3	-	-	3	3
EPREI202	Virtual Instrumentation	60	40	100	3	-	-	3	3
EPREI203	Digital Image Processing	60	40	100	3	-	-	3	3
EPREI204	Neural Networks and Fuzzy logic	60	40	100	3	-	-	3	3
EPREI205	EMI/EMC	60	40	100	3	-	-	3	3
EPREI231-233	Elective -II	-	100	100	3	-	-	3	3
EPREI211	Virtual Instrumentation Lab	-	100	100	-	-	3	3	2
Total									20

List of Electives: Elective-II

EPREI231 – Analytical Instrumentation

EPREI232– Opto-Electronic Instrumentation

EPREI233 – Optimum Control System

M.Tech. (EI) III Semester

Course code	Name of the Course	Marks			Hours per week				Credits
		Semester End Examination	Continuous Evaluation	Total	L	T	P	Total	
EPREI301	Advanced Sensors	60	40	100	3	-	-	3	3
EPREI341-343	Elective-III	60	40	100	3	-	-	3	3
EPREI311	Project Phase-I	50	50	100	-	-	12	12	8
Total									14

List of Electives: Elective-III

EPREI341 – Computer Networks and DCS

EPREI342 - Biomedical Instrumentation

EPREI343 – Power Plant Instrumentation

M.Tech. (EI) IV Semester

Course code	Name of the Course	Marks			Hours per week				Credits
		Semester End Examination	Continuous Evaluation	Total	L	T	P	Total	
EPREI411	Project Phase -II	50	50	100	-	-	24	24	14
EPREI412	Comprehensive Viva	100	--	100	--	--	--	--	2
Total									16

Evaluation:

The assessment of the students performance in each course will be based on continuous internal evaluation through mid semester examinations, quizzes, assignments & attendance (40%) and semester end examinations (60%) with high level of transparency.

Student feedback:

Evaluation of teachers by students is also carried out at end of each semester. The data obtained are analyzed and the teachers scoring lower levels are advised to adopt remedial measures.