



GIRIJANANDA CHOWDHURY UNIVERSITY

Hathkhowapara, Azara, Guwahati 781017, Assam

School of Engineering and Technology

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

M.TECH –ELECTRONICS AND ELECTRICAL TECHNOLOGY

Specialized Tracks:

- VLSI Design
- Signal Processing and Machine Learning
- Biomedical Electronics
- Power and Energy Technology

Total Credits: 68

SEMESTER I - IV

COURSE STRUCTURE
AY 2026 ONWARDS



Semester I

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit	Mark	
					L	T	P		IA	EA
T	1.	PCC	MEC26301T	Semiconductor Devices and Modelling	3	0	0	3	40	60
T	2.	PCC	MEC26302T	Control Systems and Automation	3	0	0	3	40	60
T	3.	PCC	MEC26303T	Signal Processing	3	0	0	3	40	60
T	4.	PE-I	MEC2632XT	Program Specific Elective-I	3	0	0	3	40	60
T	5.	OE-1	MEC2633XT	Open Elective I	3	0	0	3	40	60
P	6.	LAB I	MEC26304P	T1: VLSI Lab-I (HDL) T2 & T3: MATLAB & Python Lab-I T4: Power & Energy Lab-I	0	0	4	2	40	60
T	7.	MC	MEC26304T	Research Methodology	2	0	0	2	40	60
T	8.	AC	MEC2620XT	Audit Course – I	2	0	0	0	00	100
Total					19	0	4	19	280	520

Professional Elective – I

Sl.No.	Course Type	Code	Course	Specialized Tracks
1.	PEC	MEC26320T	VLSI Technology	VLSI Design (T1)
2.	PEC	MEC26321T	VLSI Signal Processing	
3.	PEC	MEC26322T	Machine Learning for Signal Processing	Signal Processing and Machine Learning (T2)
4.	PEC	MEC26323T	Python for Machine Learning and Essentials of Programming	
5.	PEC	MEC26324T	Medical Image Processing and Pattern Recognition	Biomedical Electronics(T3)
6.	PEC	MEC26325T	Bioinformatics	
7.	PEC	MEC26326T	Solar Photovoltaic Technology	Power and Energy Technology (T4)
8.	PEC	MEC26327T	Power System Reliability	



Open Elective-I

Sl.No.	Course Type	Code	Course	Specialized Tracks
1.	OE	MEC26330T	Design with HDL	VLSI Design (T1)
2.	OE	MEC26331T	Digital IC Design	
3.	OE	MEC26332T	Statistical Signal Processing	Signal Processing and Machine Learning (T2)
4.	OE	MEC26333T	Probability and Stochastic Processes	
5.	OE	MEC26334T	Biomaterials and Biosensors	Biomedical Electronics (T3)
6.	OE	MEC26335T	Advanced Biomedical Instrumentation	
7.	OE	MEC26336T	Energy Audit and Management	Power and Energy Technology (T4)
8.	OE	MEC26337T	Biomedical Engineering	

Audit Course – I

Sl.No.	Course Type	Code	Course
1.	AU	MEC26201T	English for Research Paper Writing
2.	AU	MEC26202T	Disaster Management
3.	AU	MEC26203T	Value Education/Business analytics



Semester II

Theory/ Practical	Sl. No	Course Type	Course Code	Course Name	Hours per week			Credit	Mark	
					L	T	P		IA	EA
T	1.	PCC	MEC26305T	Embedded Systems and IOT	3	0	0	3	40	60
T	2.	PCC	MEC26306T	Power Devices and Sensor Technology	3	0	0	3	40	60
T	3.	PCC	MEC26307T	Electric Vehicle	3	0	0	3	40	60
T	4.	PE-II	MEC2642XT	Program Specific Elective-II	3	0	0	3	40	60
T	5.	OE-II	MEC2643XT	Open Elective-II	3	0	0	3	40	60
P	6.	LAB II	MEC26308P	T1: VLSI Lab-II (Cadence) T2: MATLAB & Python Lab-II T3: Biomedical Sensors and Instrumentation Lab T4: Power & Energy Lab-I	0	0	4	2	40	60
T	7.	AC	MEC2620XT	Audit Course – II	2	0	0	0	00	100
Total					14	0	4	17	280	520

Professional Elective – II

Sl.No.	Course Type	Code	Course	Specialized Tracks
1.	PEC	MEC26420T	VLSI Physical Design	VLSI Design (T1)
2.	PEC	MEC26421T	Analog IC Design	
3.	PEC	MEC26422T	Deep Learning and Neural Networks	Signal Processing and Machine Learning (T2)
4.	PEC	MEC26423T	Computer Vision and Image Processing	
5.	PEC	MEC26424T	FPGA-Based Biomedical System Design (HDL)	Biomedical Electronics (T3)
6.	PEC	MEC26425T	VLSI Design for Biomedical Application	
7.	PEC	MEC26426T	Instrumentation for Solar Energy System	Power and Energy Technology (T4)
8.	PEC	MEC26427T	Power System Operation and Control	



Open Elective-II

Sl.No.	Course Type	Code	Course	Specialized Tracks
1.	OEC	MEC26430T	Low Power VLSI Design	VLSI Design (T1)
2.	OEC	MEC26431T	VLSI Design Verification and Testing	
3.	OEC	MEC26432T	Biomedical Signal Processing	Signal Processing and Machine Learning (T2)
4.	OEC	MEC26433T	Wireless and Sensor Network	
5.	OEC	MEC26434T	BioMEMS	Biomedical Electronics(T3)
6.	OEC	MEC26435T	Nanotechnology for Biomedical Applications	
7.	OEC	MEC26436T	Electrical safety	Power and Energy Technology (T4)

Audit Course – II

Sl.No.	Course Type	Code	Course
1.	AU	MEC26204T	Constitution of India
2.	AU	MEC26205T	Pedagogy Studies
3.	AU	MEC26206T	Digital Humanities



Semester III

Sl. No.	Course Type	Course Code	Course Name	Hours/week			Credit	Mark	
				L	T	P		IA	EA
1.	PCC	MEC26309	Project/Dissertation (Phase-I)	0	0	32	16	40	60
Total				0	0	32	16	40	60

Semester IV

Sl. No.	Course Type	Course Code	Course Name	Hours/week			Credit	Mark	
				L	T	P		IA	EA
1.	PCC	MEC26309	Project/Dissertation (Phase-II)	0	0	32	16	40	60
Total				0	0	32	16	40	60

Internal Members/ BOS

External Members/ BOS