

PROGRAM ELECTIVE COURSES: VERTICLES**MINOR DEGREE OFFERED BY EEE****VERTICLE 1 – POWER ENGINEERING**

S. No	Course Code	Course Title	L	T	P	No. of Contact Hours	C
1	EE606101	Conventional and Alternate Energy Sources	3	0	0	3	3
2	EE606102	Generation and Utilization of Electrical Energy	3	0	0	3	3
3	EE606103	Transmission and Distribution	3	0	0	3	3
4	EE606104	Flexible AC Transmission Systems	3	0	0	3	3
5	EE606105	High Voltage Engineering	3	0	0	3	3
6	EE606106	Power System Transients	3	0	0	3	3
7	EE606107	Power Quality	3	0	0	3	3
8	EE606108	Power System Planning	3	0	0	3	3
9	EE606109	Smart Grid: Basics to Advanced Technologies (NPTEL)	3	0	0	3	3
10	EE606110	Restructured Power Systems	3	0	0	3	3

VERTICLE 2 – CONVERTERS AND DRIVES

S. No	Course Code	Course Title	L	T	P	No. of Contact Hours	C
1	EE606201	Power Electronics for Renewable Energy Systems	3	0	0	3	3
2	EE606202	Control of Power Electronics Circuits	3	0	0	3	3
3	EE606203	Design of Switched Mode Power Supply	3	0	0	3	3
4	EE606204	Multilevel Power Converters	3	0	0	3	3
5	EE606205	Digital System Design (NPTEL)	3	0	0	3	3
6	EE606206	Advanced Power Electronics	3	0	0	3	3
7	EE606207	Design of Electrical Machines	3	0	0	3	3
8	EE606208	Analysis of Electrical Machines	3	0	0	3	3
9	EE606209	Analysis of Power Converters	3	0	0	3	3
10	EE606210	Modern Rectifiers and Resonant Converters	3	0	0	3	3

VERTICLE 3 – EMBEDDED SYSTEMS

S. No	Course Code	Course Title	L	T	P	No. of Contact Hours	C
1	EE606301	ARM Processors and Controllers	3	0	0	3	3
2	EE606302	Embedded Computing System Design	3	0	0	3	3
3	EE606303	Real Time Operating Systems	3	0	0	3	3
4	EE606304	Design of Embedded Systems	3	0	0	3	3
5	EE606305	Software for Embedded Systems	3	0	0	3	3

6	EE606306	Embedded Linux	3	0	0	3	3
7	EE606307	Embedded Control Systems Design	3	0	0	3	3
8	EE606308	Embedded Control for Electrical Drives	3	0	0	3	3
9	EE606309	Embedded System for Automotive Applications	3	0	0	3	3
10	EE606310	Embedded Product Development	3	0	0	3	3

VERTICLE 4 – CONTROL AND INSTRUMENTATION

S. No	Course Code	Course Title	L	T	P	No. of Contact Hours	C
1	EE606401	Sensors and Actuators	3	0	0	3	3
2	EE606402	Industrial Instrumentation	3	0	0	3	3
3	EE606403	Medical Electronics	3	0	0	3	3
4	EE606404	Process Control	3	0	0	3	3
5	EE606405	Logic and Distributed Control System	3	0	0	3	3
6	EE606406	Industrial Data Networks	3	0	0	3	3
7	EE606407	Robotics and Automation	3	0	0	3	3
8	EE606408	Virtual Instrumentation	3	0	0	3	3
9	EE606409	Computer Control of Processes	3	0	0	3	3
10	EE606410	Instrumentation System Design	3	0	0	3	3

VERTICLE 5 – GREEN TRANSPORTATION

S. No	Course Code	Course Title	L	T	P	No. of Contact Hours	C
1	EE606501	Electric Vehicle Design	3	0	0	3	3
2	EE606502	Vehicle Dynamics and Control	3	0	0	3	3
3	EE606503	Modeling, Simulation and Control of Electric Vehicles	3	0	0	3	3
4	EE606504	Design of Motor and Power Converters for Electric Vehicles	3	0	0	3	3
5	EE606505	Design of Electric Vehicle Charging System	3	0	0	3	3
6	EE606506	Testing of Electric Vehicles	3	0	0	3	3
7	EE606507	Grid Integration of Electric Vehicles	3	0	0	3	3
8	EE606508	Fundamentals of Electric and Hybrid Vehicles	3	0	0	3	3
9	EE606509	Energy Storage and Management for Electric Vehicles	3	0	0	3	3
10	EE606510	Intelligent and Autonomous Vehicles	3	0	0	3	3

VERTICLE 6 – ELECTRICAL AND COMPUTATIONAL SCIENCES

S. No	Course Code	Course Title	L	T	P	No. of Contact Hours	C
1	CS640206	Object Oriented Programming Using Java	3	0	0	3	3

2		Operating systems	3	0	0	3	3
3	CS630202	Data Structures Using C++	3	0	0	3	3
4	EE606604	Data Analysis Using Python for Electrical Engineers	3	0	0	3	3
5	EE606605	Data Management for Smart Grid	3	0	0	3	3
6	EE606606	Communication and Data Security in Electrical Engineering	3	0	0	3	3
7	EE606607	Communication Protocols, Security and Protection for Smart Grid	3	0	0	3	3
8	EE606608	PLC Programming	3	0	0	3	3
9	EE606609	Machine Learning	3	0	0	3	3
10	EE606610	Optimization Studies in Electrical Systems	3	0	0	3	3

VERTICLE 7 – DIVERSIFIED COURSES

S. No	Course Code	Course Title	L	T	P	No. of Contact Hours	C
1	EE606701	Hybrid Energy Technology	3	0	0	3	3
2	EE606702	Energy Efficient Buildings	3	0	0	3	3
3	EE606703	Bluetooth Technology	3	0	0	3	3
4	EE606704	Deep Learning	3	0	0	3	3
5	EE606705	Edge Computing	3	0	0	3	3
6	EE606706	Fuzzy Systems and Applications	3	0	0	3	3
7	EE606707	Municipal Solid Waste Management (NPTEL)	3	0	0	3	3
8	EE606708	Augmented Reality	3	0	0	3	3
9	EE606709	MEMS Technology	3	0	0	3	3
10	EE606710	Nano Sensors and Its Applications	3	0	0	3	3