DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

B.E | UNDERGRADUATE PROGRAMME

S.NO	Code	Title of Course	Need (Local / National / Regional and Global	Description
1	UDMTC03	Engineering Mathematics-III	National	Students learn required skill to apply the concepts of Engineering Mathematics and how to handle the engineering problem
2	UDMCC01	Engineering Mechanics	Global	Enable the students to understand properties of Engineering materials, Stress and strain
3	UDEE301	Electric Circuit Analysis	Global	Students learn to solve electrical circuits to find electrical parameters such as current, voltage and power
4	UDEE302	Electromagnetic Theory	Global	Get a detailed analysis of EM field distribution under static and time varying conditions and correlation of EM fields under various cases for varying materials.
5	UDEE303	Electrical Machines-I	Global	Students get exposure on DC Generators,different types of DC motors and their working principle.

6	UDEE304	Electron Devices and Circuits	Local	Students to learn basic electronic devices such as PN junction diodes, BJT, MOSFETs and to enable the students to understand the change in physical and electrical properties of electron devices under various biasing conditions
7	UDVCC02	Value Added Training Program-I	Local	Additional skill oriented technical training provided to students to improve employability skills
8	UDVCC03	Industrial Visit-I	Regional	Industrial visits provide students a practical perspective of the work
9	UD1EE3A	Electrical Machines-I Laboratory	Global	Students can get knowledge on DC machines testing and can verify the practical results.
10	UD1EE3B	Electric Circuit Analysis Laboratory	Local	Students will get practical knowledge about electrical circuits
11	UD1EE3C	Electrical Workshop Practices	Global	Students get practical exposure to operation of laths, drilling machines, shaping, milling and Grinding machines.Safety Demo - personal, tools, machines and environmental.
12	UD1LECD	Interpersonal Communication	Global	Students can understand the vocabulary English for communication
13	UDEE401	Analog Integrated Circuits	Local	Students learn about linear and non- linear application of op-amps and theory of ADC and DAC and also experiment the applications by using special function ICs.
14	UDEE402	Electrical Machines –II	Global	Students get exposure on AC Generators, different types of AC motors and their operation.

15	UDEE403	Digital System Design	Local	Students were made to learn about how to design and apply logic gates in the design of combinational circuits and analyze the design of synchronous and asynchronous sequential circuits.
16	UDEE404	Transmission and Distribution	National	The students can gain knowledge about Transmission of electrical power and distribution of power in any sector.
17	UDMCC02	Thermodynamics	Global	Enable the students to understand the laws, principles of thermodynamics, heat transfer and to evaluate the performance of refrigeration system, performance of IC engines
18	UDVCC04	Value Added Training Program-II	Local	Additional skill oriented technical training provided to students to improve employability skills
19	UDVCC05	Industrial Visit – II	Regional	Industrial visits provide students a practical perspective of the work
20	UD1EE4A	Integrated Circuits Laboratory	Local	Students to get practical experience in Design, assembly, testing of Op-amp and gaining knowledge about Digital IC's and it's applications
21	UD1EE4B	Electrical Machines –II Laboratory	Global	Students get practical exposure on AC Generators, different types of AC motors.
22	UD1LECE	Professional Communication	Global	Practical Classes for Communication skill development
23	UDVCC06	Professional Ethics and Human Values	Global	Students must perform under a standard of professional behaviour that requires safety, health, and welfare of the public.

24	UDEE501	Microprocessors and Microcontrollers	Local	Students get insight about the architecture, addressing modes and instruction set of 8085, 8086 and 8051 and their interfacing and programming real time application using them
25	UDEE502	Marine Electrical Technology	Global	Students learn about ship's electrical circuits and machineries
26	UDEE504	Control Systems	Global	Students get an exposure on basic components of control systems,time domain frequency domain tools and Stability analysis for designing linear system and compensators
27	UDVCC07	Indian Constitution	National	Students get exposure to constitution of India
28	UDVCC08	Value Added Training Program-III	Local	Additional skill oriented technical training provided to students to improve employability skills
29	UDVCC09	Industrial Visit – III	Regional	Industrial visits provide students a practical perspective of the work
30	UD1EE5A	Marine Electrical Technology Laboratory	Global	Hands on training provided to students to gain practical experriance on ship's electrical wiring and Electrical machine operations
31	UD1EE5B	Microprocessor and Microcontroller Laboratory	Local	Students are trained to have an in depth knowledge of the architecture and programming of 8-bit and 16-bit Microprocessors, Microcontrollers and to study how to interface various peripheral devices with them.
32	UD1EE5C	Internship – 1	National	Student visits Industries relevent to their field and learn the work in real time environment for a shoter period.
33	UDEE601	Power Electronics	Global	Students learn power converters and its characteristics, Operation and performance of controlled rectifiers & choppers, inverters and AC to AC Converters

34	UDEE602	Power System Analysis	National	Students learn to apply numerical methods to solve the power flow problem and analyze the power system under steady state operating condition and under fault conditions.
35	UDEE603	Digital Signal Processing	Local	Students gain knowledge in analyzing discrete time signals and systems in time and frequency domain and understand DFT and FFT techniques of filter design applications, concept of multirate signal processing applications.
36	UDVCC10	Essence of Indian Traditional knowledge	National	To learn about indian traditions
37	UDVCC11	Professional Development Programme – I	Global	Activities conducted to attitude development and self discipline
38	UDVCC12	Value Added Training Program-IV	Local	Additional skill oriented technical training provided to students to improve employability skills
39	UDVCC13	Industrial Visit – IV	Regional	Industrial visits provide students a practical perspective of the work
40	UD1EE6A	Power Electronics Laboratory	Global	Students learn the characteristics and performance of controlled rectifiers & choppers, inverters and AC to AC Converters
41	UD1EE6B	Digital Signal Processing Laboratory	Local	Hands on training to implement the IIR and FIR filter using MATLAB.
42	UD1EE6C	Mini project	Global	Student develops a small project or required proto type for their main project
43	UDEE701	Power System Protection and Switchgear	Global	To impart knowledge on apparatus protection using relays and circuit breakers.
44	UDEE702	Solid State Drives	Global	To understand steady state operation and transient dynamics of a motor load system and analyze the current and speed controllers for a solid-state drive.
45	UDEE703	Marine Control Engineering and Automation	Global	To impart knowledge on advanced control techniques used in on-board ships and understand various marine applications of automation systems.

46	UDVCC14	Professional Development Programme – II	Global	Activities conducted to attitude development and self discipline
47	UDVCC15	Value Added Training Program-V	Local	Additional skill oriented technical training provided to students to improve employability skills
48	UDVCC16	Industrial Visit – V	Regional	Industrial visits provide students a practical perspective of the work
49	UD1EE7A	Marine Control Engineering & Automation Laboratory	Global	Students learn the working of Temperature, Pressure, Flow, Level and other measuring equipments.
50	UD1EE7B	Project Work -Phase 1	Global	Students learns how to develope a project work with apply the technical knowledge they studied and analize & design the project work with prototype and simulation result
51	UD1EE7C	Internship – 2	National	Student visits Industries relevent to their field and learn the work in real time environment for a shoter period.
52	UDVCC17	Industrial Visit – VI	Regional	Industrial visits provide students a practical perspective of the work
53	UD1EE8A	Project Work - Phase II	Global	Students learns how to develope a project work with apply the technical knowledge they studied and analize & design the project work with prototype and simulation result
54	UD1EEE01	Communication Engineering	National	Study about different methods of digital and analog communication and their significance, data communication and understand the optical fiber and satellite communication systems.
55	UD1EEE02	Electrical Power Plant Engineering	National	Students learn about Conventional and Non-ponventionalower plants and understand the role of engineers in operation of power plants.
56	UD1EEE03	Instrumented Safety Systems	National	Students learn the concepts of instrumented safety systems, recognize the safety standards. impart knowledge on safety system engineering.
57	UD1EEE04	Solar and Energy Storage System	National	Students study solar modules and PV system design and their applications

58	UD1EEE05	Instrumentation and Control	National	Students learn the basics of measurement and control of process such as pressure, flow and level.
59	UD1EEE06	Marine Electrical System Design and Layout	National	Students learn to implement the Wiring on Panel for Starters, light connection and marine accessories.
60	UD1EEE07	Microcontroller and DSP Based System Design	National	Students able to develop micro controller programs for the system design and develop DSP programs for the system design.
61	UD1EEE08	Design of Electrical Apparatus	National	Students learn to implement the design of DC machines, transformers and induction motors.
62	UD1EEE09	Measurements and Instrumentation	National	To understand the operation of measurement and instrumentation systems, find faults and test various instruments and justify their use in systems and carry out Engineering design of various meters or select instruments for various applications.
63	UD1EEE10	Wind Energy Conversion Systems	National	Students learn about the components of wind energy conversion systems and understand the concepts of wind energy conversion systems.
64	UD1EEE11	Bio-Medical Instrumentation	National	Students acquire knowledge on physiology of human organs and apply different transducers for biomedical application
65	UD1EEE12	Marine Engineering – I	National	Students gain knowledge in the marine diesel engines and types of marine boilers and learn about the refrigeration and air-conditioning systems.
66	UD1EEE13	Special Electrical Machines	National	Students gain knowledge on reluctance motors, permanent magnet brushless D.C. motors and understand the concept of permanent magnet synchronous motors.
67	UD1EEE14	Electrical Power Utilization and Illumination	National	To understand the illumination, type of lighting schemes and lamps.
68	UD1EEE15	Distributed Computer Control Systems (DCCS)	National	Students learn PLC architecture and programming, SCADA and Distributed control system architecture and its operation

69	UD1EEE16	High Voltage Engineering	National	Students acquire knowledge about generation and measurement of high voltages and understand the various types of over voltages in power systems
70	UD1EEE17	Neuro Fuzzy and Genetic Programming	National	To provide the concepts of Neural Networks, Fuzzy Systems and Genetic Algorithms and its applications.
71	UD1EEE18	Process Control and Marine Automation	National	To Understand knowledge on advanced control techniques used onboard ships and measuring and control equipments
72	UD1EEE19	Embedded System Design	National	To understand basic of Embedded system and its Networking, analyze and design the RTOS.
73	UD1EEE20	Robotics and Automation	National	To understand the control of robots for some specific applications and impart knowledge on various parts of Robots.
74	UD1EEE21	High Voltage DC Systems	National	Students to study the system control hierarchy, firing angle control and characteristics of harmonics in HVDC system and types of filter.
75	UD1EEE22	Wireless Sensor Networks	National	To Obtain a broad understanding about the network architecture of wireless sensor network and characteristics of wireless sensor networks and sensor nodes.
76	UD1EEE23	Python Programming	National	Students can represent compound data using Python lists, tuples and dictionaries, Decompose a Python program into functions, Read and write data from / to files in Python Programs.
77	UD1EEE24	Marine Engineering – II	National	To impart knowledge in the structural components of ships and understand about the marine thermal system and marine pumps and valve
78	UD1EEE25	Power Electronics for Renewable Energy Systems	National	Students learn to design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems.
79	UD1EEE26	Power System Operation and Control	National	Students gain knowledge about the operation and control of power systems and learn the modern computer control in power systems

80	UD1EEE27	Energy Audit and Regulations	National	To demonstrate the indian energy audit policies and various methods and understand the procedure of the energy audit methods
81	UD1EEE28	VLSI System Design	National	Students learn the fundamental principles underlying digital design using CMOS logic and analyze the performance characteristics of these digital circuit
82	UD1EEE29	Internet of Things for Electrical Engineers	National	Students acquire knowledge about different platforms and Infrastructure for IOT,Data Analystics for IoT.
83	UD1EEE30	Maintenance of Marine Electrical Equipment	National	Students learn about maintenance of marine cables, cable trays, circuit breakers, generator, motor and power supplies.
84	UD1EEE31	Micro grids and smart grids	National	To understand the requirements for grid interconnection and its impact with energy sources of distributed generation.
85	UD1EEE32	Digital Image Processing	National	Student learn the image processing and compression techniques.
86	UD1EEE33	Flexible AC Transmission Systems	National	Students analyze the the operation of controllers for enhancing the transmission capability and the operation, control and application of different FACTS devices and custom power devices.
87	UD1EEE34	Hybrid Electric Vehicles	National	To understand the concept of electrical hybrid vehicles and to learn electrical vehicle operation & control and modelling of Electric hybrid vehicle using Power electronics concepts.
88	UD1EEE35	Power Quality	National	Students learn about power quality issues such as voltage sag, over voltages and harmonics in power systems
89	UD1EEE36	Marine Electrical Propulsion and Control	National	Students learn about different kinds of power semiconductor devices used on board
90	UD1EEO01	Operation and Maintenance of Electrical Systems in ships	National	To understand the operation & troubleshooting of machines

91	UD1EEO02	Smart Sensors	National	To impart knowledge on various Sensors and their applications
92	UD1EEO03	Consumer Electronic System Service and Maintenance	National	Students learn various types of mobile handset, computer/laptop and its repair & maintenance.
93	UD1EEO04	Introduction to Robotics	National	To develop robots with links and effectors to achieve challenging tasks
94	UD1EEO05	Servicing of Electrical Appliances	National	Students learn the servicing of various Electrical appliances.
95	UD1EEO06	Industrial Automation	National	To acquire familiarity about various industrial instrumentation types, their parameters and different types of measurement techniques
96	UD1EEO07	Basics of Electrical Energy Generation & Distribution	National	To impart knowledge on Power system generation and distribution systems
97	UD1EEO08	Solar Energy Systems	National	To familiarize with the characteristics of solar radiation, its global distribution, and conversion methods of solar energy to heat and power.
98	UD1EEO09	Energy Management and SCADA	National	To learn about the use EMS and SCADA systems in the power system operation, optimation and control.
99	UD1EEO10	Electronic Navigation Equipments and Maintenance	National	To understand the operation of machines and how to maintain the electrical equipments with safety.
100	UD1EEO11	Introduction to Electric Vehicles	National	To provide knowledge on modelling and implementation of HEV using Power Electronics concepts.
101	UD1EEO12	IoT using Raspberry Pi	National	To understand IOT architecture and its building blocks
102	UBEE302	DC and AC Machines	Global	Students get exposure to DC&AC Machines and their operation.
103	UBEE303	Digital Logic Circuits	Local	T Understand the basic software tools for the design and implementation of digital circuits and systems.

104	UBIT301	Object Oriented Programming	Local	Students learn the fundamentals of programming such as variables, conditional and iterative execution, methods and gain knowledge about the fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries.
105	UBMCC04	Fluid Mechanics	Local	To understand the properties and characteristics of fluids and to analyze the performance of pumps and turbines.
106	UBMCCPC	Fluid Mechanics Laboratory	Local	To understand the properties and characteristics of fluids and to analyze the performance of pumps and turbines
107	UBEE3PA	DC and AC Machines Laboratory	Global	To expose the students to the operation of D.C. machines and transformers and give them experimental skill.
108	UBIT3PA	Object Oriented Programming Laboratory	Local	To practice the use of C++ classes and class libraries, modify existing C++ classes and C++ classes for simple applications
109	UBLECPD	Soft Skills -III	Global	To urge the need of effective communication in corporate sector with Business English.
110	UBMT403	Numerical Methods	Local	To understand basic concepts of a few numerical methods and give procedures for solving numerically different kinds of problems occurring in engineering and technolog
111	UBEE405	Transducers	Global	To introduce various transducers and the data acquisition systems, Expose to various sensors for Measuring Different Electrical parameters and know the principle of various Digital Transducers
112	UBEE404	Linear Integrated Circuits	Global	To analyze, design and explain the characteristics and applications of active filters, including the switched capacitor filter
113	UBMCC05	Pneumatics, Hydraulics & Electrical Control Systems	Global	Students learn the scientific and engineering principles related to Hydraulics and pneumatics

114	UBMCCPB	Pneumatics, Hydraulics & Electrical Control Systems	Global	To know the method of programming the microprocessor and also the design, modeling & analysis of basic electrical, hydraulic & pneumatic Systems.
115	UBEE4PB	Transducers Laboratory	Global	To fortify the students with an adequate work experience in the measurement of different quantities and also then expertise in handling the instruments involved.
116	UBLECPE	Soft Skills - IV	Global	To urge the need of effective communication in corporate sector with Business English.
117	UBEE801	Mobile Communication	Global	Students learn cellular concept including handoff mechanism, cell coverage and capacity, mobile radio propagation models for indoor and outdoor conditions and digital modulation and equalization techniques suitable for mobile communication
118	UBBSC01	Total Quality Management	Global	Students learn TQM principles, TQM tools & techniques and Quality systems
119	UAEVC01	Environmental Studies	Global	The students can gain knowledge about environmental pollution and method of prevention.