

# PROGRAM STRUCTURE

## I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192PD1T01	Electrical Machine Modeling and Analysis	✓			Students are able to acquire skills related to fundamental knowledge on various analytical tools for electrical engineering machines simulation and enabling them to be employed in areas of computer aided design of electrical components.
2	192PD1T02	Analysis of Power Electronic Converters	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
3	192HS1T01	Research Methodology and IPR		✓		Students can gain knowledge about the methods of study, observation, comparison and experiment along with different types of Intellectual property rights
4	192PD1L01	Power Electronics Simulation Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
5	192PD1L02	Power Converters Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
6	192PD1E01	Modern Control Theory		✓		This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.
7	192PD1E02	Power Quality and Custom Power Devices	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to get employed in industries focusing in saving money on electricity bill and carbon footprint.
8	192PD1E03	Programmable Logic Controllers & Applications		✓		Students are able to demonstrate technical solving skills by providing knowledge on PLCs with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.

9	192PD1E04	Artificial Intelligence Techniques	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
10	192PD1E05	Renewable Energy Technologies	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
11	192PD1E06	HVDC Transmission and Flexible AC Transmission Systems	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.

## I / II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	19MC1A01 19MC2A01	English for Research Paper Writing		✓		Students are able to demonstrate communication writing skills to express fluently in writing form of language which is very much essential for the career growth in research
13	19MC1A02 19MC2A02	Disaster Management				
14	19MC1A03 19MC2A03	Sanskrit for Technical Knowledge				
15	19MC1A04 19MC2A04	Value Education				
16	19MC1A05 19MC2A05	Constitution of India				
17	19MC1A06 19MC2A06	Pedagogy Studies				
18	19MC1A07 19MC2A07	Stress Management by Yoga				
19	19MC1A08 19MC2A08	Personality Development through Life Enlightenment Skills				
20	19MC1A09 19MC2A09	Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language, formal written communication in the organizations.

## II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	192PD2T03	Switched Mode Power Conversion	✓			Students are able to acquire skills related to fundamental knowledge on SMPS working and operations and enabling them to be employed in areas of inverters, charging, etc.
22	192PD2T04	Power Electronic Control of Electrical Drives	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
23	192PD2L03	Electric Drives Simulation Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
24	192PD2L04	Electric Drives Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
25	192PD2P01	Mini Project with Seminar				
26	192PD2E07	Control & Integration of Renewable Energy Systems	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
27	192PD2E08	Hybrid Electric Vehicles	✓			Students are able to acquire skills related to various types hybrid vehicles operations and control enabling the students to get employed in EV sector.
28	192PD2E09	Digital Control Systems		✓		This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.
29	192PD2E10	Advanced Digital Signal Processing		✓		Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analysed and deciphered by complex data processing techniques.



30	192PD2E11	Applications of Power Converters	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
31	192PD2E12	Microcontrollers		✓		Students are able to demonstrate technical solving skills by providing knowledge on microprocessors with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.

## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
32	192PD3P02	Dissertation I/Industrial Project	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
33	192PD3E13	Digital Signal Processing Controlled Drives	✓			Students are able to acquire skills related to analysis of signals enabling them to be employed for designing and manufacturing of electronic/communication equipment.
34	192PD3E14	Smart Grid Technologies	✓			Students are able to acquire skills related to smart grid technologies and its challenges imposed by the growth in non-dispatchable renewable generation on electric grids that enables them to get employed in power company.
35	192PD3E15	Modeling & Simulation of Power Electronic Systems	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
36	19ST3O01	Repair and Rehabilitation of Structures				
37	19ST3O02	Green Building Systems		✓		Students are able to demonstrate technical skill of various green principles related to buildings in constructional activities
38	19ST3O03	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
39	19ST3O04	Basic Foundation Engineering		✓		Students are able to acquire skills related to basic concepts of foundations and their importance to various structures/buildings
40	19STE3O01	Fuels and Combustion	✓			Students are able to acquire skills in analyzing various fuels and the effect of combustion of fuels on environment enabling them to be employed in automotive, aerospace sectors.

41	19STE3O02	IC Engines	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.
42	19STE3O03	Automotive Technology	✓			Students are able to acquire skills related to the concepts of transmission system, various braking systems and suspension systems enabling them to be employed in automotive sector.
43	19STE3O04	Embedded System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of electronic systems
44	19STE3O05	Digital System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
45	19ES3O01	Embedded System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of electronic systems
46	19ES3O02	Digital System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
47	19ES3O03	Programming Languages for Embedded Systems	✓			Students are able to acquire skills related to design, and developed programs with C and C++ enabling them to be employed for designing and manufacturing of Embedded systems.
48	19ES3O04	Sensors and Actuators				
49	19VD3O01	Physical Design Automation	✓			Students are able to acquire knowledge related to partitioning, placement and routing techniques in a physical design, enabling them to be employed for designing and manufacturing and utilization of ICs.
50	19VD3O02	VLSI Technology	✓			Students are able to acquire knowledge related to fabrication process of VLSI enabling them to be employed for fabrication and testing of ICs
51	19VD3O03	Nano-electronics	✓			Students are able to acquire knowledge related to different nanoelectronics building blocks such as carbon nanotubes, quantum dots, nano wires enabling them to be employed in the field of VLSI.
52	19CS3O01	Python Programming (CSE)	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.




53	19CS3O02	Principles of Cyber Security	✓			Students are able to acquire skills related to design, develop and evaluate the performance of secure systems enabling them to be employed for designing and manufacturing of secure communication equipment.
54	19CS3O03	Internet of Things	✓			Students will be able to acquire technical skills to develop real time IOT devices which can be used in the field of medicine, agriculture, Vigilance, safety and security services which enable them to be employed as IOT developer.
55	19CS3O04	Machine Learning	✓			Students are able to gain skills related to how to evaluate models generated from data enabling them to be employed for data analytics role.
56	19CS3O05	Artificial Intelligence	✓			Students are able to acquire technical skills to understand the evaluation of the AI, problem solving approaches, expert systems, kr in Expert systems and fuzzy logic problem solutions.
57	19CS3O06	Deep Learning	✓			Students are able to acquire skills related to Deep learning, to analysis of different Deep learning algorithms and solving process in creative way.
58	19PE3O01	Introduction to Petroleum Engineering		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of process in Petroleum Industry.
59	19PE3O02	Process Intensification		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
60	19PE3O03	Fundamentals of Liquefied Natural Gas	✓			Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as process and transport engineers.
61	19PE3O04	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures, modelling and analysis of production.
62	19PE3O05	Geology				
63	19PE3O06	HSE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.



## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
64	192PD4P03	Dissertation II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
Total		64	39	13	1	

  
Program Coordinator

  
Head of the Department  
Head of The Department  
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