

# PROGRAM STRUCTURE

## I SEMESTER

| S. No | Course Code | Name of the Course                          | Employability | Skill Development | Entrepreneurship | Remarks  |
|-------|-------------|---|---------------|-------------------|------------------|--|
| 1     | 201HS1T01   | Communicative English                       |               | ✓                 |                  | Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth.                 |
| 2     | 201BS1T01   | Differential equations and Linear algebra   |               | ✓                 |                  | Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines. |
| 3     | 201BS1T03   | Applied Physics                             |               |                   |                  |  |
| 4     | 201ES1T02   | Programming for Problem Solving using C     | ✓             |                   |                  | Students are able to acquire skills related to control structures, arrays, string formulas enabling them to be employed in software industry.  |
| 5     | 201ES1I01   | Engineering Graphics and Design             |               | ✓                 |                  | Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.                               |
| 6     | 201HS1L01   | Communicative English Lab                   |               | ✓                 |                  | Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth.                 |
| 7     | 201BS1L02   | Applied Physics Lab                         |               |                   |                  |  |
| 8     | 201ES1L02   | Programming for Problem Solving using C Lab | ✓             |                   |                  | Students are able to acquire skills related to basic programming using C, enabling them to be employed as software developers.   |
| 9     | 201MC1T01   | Environmental Science                       |               |                   |                  |  |

## II SEMESTER

| S. No | Course Code | Name of the Course                                 | Employability | Skill Development | Entrepreneurship | Remarks  |
|-------|-------------|--|---------------|-------------------|------------------|--|
| 10    | 201BS2T05   | Partial Differential Equations and Vector Calculus |               | ✓                 |                  | Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations, vector differentiation, vector integration and their applications in various engineering disciplines. |
| 11    | 201BS2T06   | Transform Techniques                               |               | ✓                 |                  | Students are able to demonstrate problem solving skills by learning Fourier Transforms, Laplace Transforms, Z-Transforms and their applications  |
| 12    | 201ES2T07   | Data Structures through C                          | ✓             |                   |                  | Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers   |
| 13    | 201ES2T09   | Basic Electrical Circuits                          | ✓             |                   |                  | Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.                 |
| 14    | 201ES2T13   | Basic Civil and Mechanical Engineering             |               |                   |                  |  |
| 15    | 201ES2L06   | Data Structures through C Lab                      | ✓             |                   |                  | Students are able to acquire programming skills related to OOPs, and Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to employed as a product developer.                                   |
| 16    | 201ES2L09   | Electrical Engineering Workshop                    |               | ✓                 |                  | Students are able to demonstrate engineering skills by acquiring basic knowledge on the working of various semi-conductor devices  |
| 17    | 201ES2L11   | Basic Civil and Mechanical Engineering Lab         |               |                   |                  |  |
| 18    | 201MC2L01   | Professional Communications Skills Lab             |               | ✓                 |                  | Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth.   |
| 19    | 201MC2T02   | Constitution of India                              |               | ✓                 |                  | This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.            |

## III SEMESTER

| S. No | Course Code | Name of the Course                    | Employability | Skill Development | Entrepreneurship | Remarks   |
|-------|-------------|---------------------------------------|---------------|-------------------|------------------|---|
| 20    | 201BS3T11   | Numerical methods & Complex variables |               | ✓                 |                  | Students are able to demonstrate problem solving skills by learning numerical methods for solving equations, differential equations, integrals, analytical properties of functions of complex variables, complex integration.                               |
| 21    | 201EE3T01   | Analog Electronic Circuits            | ✓             |                   |                  | Students are able to acquire skills related to modulation and demodulation techniques, transmission and reception of signals enabling them to be employed for designing and manufacturing of communication systems  |
| 22    | 201EE3T02   | Electrical Circuit Analysis           | ✓             |                   |                  | Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.  |
| 23    | 201EE3T03   | DC Machines and transformers          |               | ✓                 |                  | This subject helps the student to demonstrate technical skills as they are able to analyze electrical networks using network theorems, performance of AC and DC Machines, diode characteristics and its application and simulation of diode and transistor. |
| 24    | 201EE3T04   | Electromagnetic Fields                | ✓             |                   |                  | Students are able to acquire skills related to signal processing and digital communications which enables them to be employed in EMF application industries.  |
| 25    | 201EE3L01   | DC machines and transformers Lab      |               | ✓                 |                  | This subject helps the student to demonstrate technical skills as they are able to analyze electrical networks using network theorems, performance of AC and DC Machines, diode characteristics and its application and simulation of diode and transistor. |
| 26    | 201EE3L02   | Electrical Circuits Lab               | ✓             |                   |                  | Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.  |
| 27    | 201EE3L03   | Analog Electronic Circuits Lab        | ✓             |                   |                  | Students are able to acquire skills related to modulation and demodulation techniques, transmission and reception of signals enabling them to be employed for designing and manufacturing of communication systems  |

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| 28 | 201SO3L02 | Design of Electrical Circuits using Engineering Software Tools | ✓ |  |  | Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits. |
| 29 | 201MC3T03 | Biology For Engineers  |   |  |  |  |



## IV SEMESTER

| S. No | Course Code | Name of the Course                                   | Employability | Skill Development | Entrepreneurship | Remarks  |
|-------|-------------|--|---------------|-------------------|------------------|--|
| 30    | 201EE4T05   | Electrical Power Generation and Distribution Systems | ✓             |                   |                  | Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges imposed by the growth in non-dispatchable renewable generation on electric grids consideration that enables them to get employed in power transmission company.  |
| 31    | 201EE4T06   | Digital Electronics                                  | ✓             |                   |                  | Students are able to acquire knowledge related to characteristics of digital electronic devices and skills related to basic ckt. design enabling them to be employed for designing and manufacturing of digital electronic equipment.  |
| 32    | 201EE4T07   | Induction and Synchronous Machines                   |               | ✓                 |                  | This subject helps the students to improve their skills by making them know the performance evaluation methods of various flow measuring equipment and hydraulic turbines and pumps. This subject helps the students to demonstrate their skills as they will identify and know the uses of different pumps which will be used in underground and open cast mines  |
| 33    | 201HS4T03   | Managerial Economics and Financial Analysis          |               |                   | ✓                | Students are able to demonstrate competency in the domain of business management enabling them to become an entrepreneur.  |
| 34    | 201ES4T18   | Python Programming                                   | ✓             |                   |                  | Students are able to acquire skills related to Python Programming to give solutions to Realtime problems in creative way.  |
| 35    | 201ES4L15   | Python Programming Lab                               | ✓             |                   |                  | Students are able to acquire skills related to Python Programming to give solutions to Realtime problems in creative way.  |
| 36    | 201EE4L04   | Induction and Synchronous Machines Lab               |               | ✓                 |                  | This subject helps the students to improve their skills by making them know the performance evaluation methods of various flow measuring equipment and hydraulic turbines and pumps. This subject helps the students to demonstrate their skills as they will identify and know the uses of different pumps which will be used in underground and open cast mines. |
| 37    | 201EE4L05   | Digital Electronics lab                              |               | ✓                 |                  | Students are able to acquire knowledge related to characteristics of digital electronic devices and skills related to basic ckt. design enabling them to   |

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|    |           |  |   |  |  | be employed for designing and manufacturing of digital electronic equipment.                                       |
| 38 | 201SC4L14 | IoT Applications of Electrical Engineering | ✓ |  |  | Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector. |
| 39 | 201MC4T04 | Essence of Indian Traditional Knowledge    |   |  |  |  |

## V SEMESTER

| S. No | Course Code | Name of the Course                          | Employability | Skill Development | Entrepreneurship | Remarks  |
|-------|-------------|---|---------------|-------------------|------------------|--|
| 40    | 191EE5T10   | Power Systems –II                           | ✓             |                   |                  | Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss. |
| 41    | 191EE5T11   | Power Electronics                           | ✓             |                   |                  | 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.                                     |
| 42    | 191EE5T12   | Electrical Measurements and Instrumentation | ✓             |                   |                  | Students are able to acquire skills related to various types of electrical instruments that enable them to get employed in core (electrical) industry/company related to instrumentation of electrical parameters.   |
| 43    | 191HS5T05   | Managerial Economics and Financial Analysis |               |                   | ✓                | Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.   |
| 44    | 191EE5E03   | 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.  |
| 45    | 191EE5E02   | Electrical Machine Modeling and Analysis    | ✓             |                   |                  | Students are able to acquire skills related to machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be employed for controlling, designing and manufacturing in power station, wind turbines, etc  |
| 46    | 191EE5E01   | Advanced Control Systems                    |               | ✓                 |                  | The students re able to acquire technical skills related to strategic advanced control methods to improving productivity and enhancing the best practices of the company.  |
| 47    | 191EE5E03   | 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.  |



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| 48 | 191ME5O02 | Fundamentals of Mechanical Engineering        | ✓ |   |   | Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.   |
| 49 | 191ME5O03 | Supply Chain Management                       | ✓ |   |   | The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service-based companies |
| 50 | 191ME5O04 | 3D Printing                                   |   |   |   |  |
| 51 | 191ME5O05 | Entrepreneurship Development and Incubation   |   |   | ✓ | Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.  |
| 52 | 191CS5O02 | Object Oriented Programming through C++       | ✓ |   |   | Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.                      |
| 53 | 191CS5O03 | Java Programming                              | ✓ |   |   | Students are able to acquire skills related to java programming enabling them to be employed as software developers.   |
| 54 | 191CS5O04 | R Programming                                 |   |   |   |  |
| 55 | 191IT5O01 | Data Base Management Systems                  | ✓ |   |   | Students are able to acquire skills related to SQL commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer                                     |
| 56 | 191IT5O02 | Computer Graphics                             | ✓ |   |   | Students are able to acquire skills related to design, synthesize and evaluate the performance of Different Language Compilers and enabling them to be employed for designing of Compilers.                        |
| 57 | 191MI5O01 | Overview of Mining                            |   |   |   |  |
| 58 | 191PT5O01 | Process Intensification in Petroleum Industry |   | ✓ |   | Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.  |
| 59 | 191PT5O02 | Fundamentals of Petroleum Industry            |   | ✓ |   | Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of petroleum industry.   |
| 60 | 191AG5O01 | Basic Crop Production Practices               |   |   |   |  |
| 61 | 191EE5L04 | Electrical Machines-II Lab                    | ✓ |   |   | Students are able to acquire skills related to machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be   |



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|    |           |  |   |  |   | employed for controlling, designing and manufacturing in power station, wind turbines, etc  |
| 62 | 191EE5L05 | Control Systems Lab                      | ✓ |  |   | Students are able to acquire skills related to strategic methods to improving productivity and enhancing the best practices of the company that enables them to get employed in industries related to controlling of operations                             |
| 63 | 191HS5T06 | Employability Skills -III                | ✓ |  |   | This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence. |
| 64 | 191PR5P02 | Socially Relevant 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.     |
| 65 | 191MC5A08 | Intellectual Property Rights and Patents |   |  | ✓ | It helps the graduates safe guard the IP and innovations at their place of work   |

## VI SEMESTER

| S. No | Course Code | Name of the Course                      | Employability | Skill Development | Entrepreneurship | Remarks  |
|-------|-------------|---|---------------|-------------------|------------------|--|
| 66    | 191EE6T13   | Microprocessor & Interfacing            |               | ✓                 |                  | Students are able to demonstrate technical skills of modern multi-core processors and its applications.  |
| 67    | 191EE6T14   | Power System Analysis                   | ✓             |                   |                  | Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss. |
| 68    | 191EE6T15   | Power Converter 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.                                     |
| 69    | 191EE6E07   | Electrical Distribution Systems         | ✓             |                   |                  | Students are able to acquire skills related to mitigating some of the potential distribution of electrical power challenges imposed by the growth in non-dispatchable renewable generation on electric grids that enables them to get employed in power distribution company.                        |
| 70    | 191EE6E05   | Advanced Power Electronics 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.                                     |
| 71    | 191EE6E06   | Digital Control Systems                 |               | ✓                 |                  | The students are able to acquire technical skills related to strategic advanced control methods to improving productivity and enhancing the best practices of the company.   |
| 72    | 191EE6E08   | Energy Audit, Conservation & Management |               |                   | ✓                | The course focuses on the loss and profit studies and other company maintenance activities, creates the entrust among the students to have own company.  |
| 73    | 191EE6E11   | High Voltage Transmission               | ✓             |                   |                  | Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.  |

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| 74 | 191EE6E12 | Switched mode 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. |
| 75 | 191EE6E09 | Control Systems Design                      | ✓ |   |   | Imparts foundations of control systems, which are helpful in controlling industrial and domestic processes, making the student employable.   |
| 76 | 191EE6E10 | Electrical Safety                           | ✓ |   |   | Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.   |
| 77 | 191CE6O02 | Disaster Management                         |   | ✓ |   | Students are able to demonstrate technical skill of characterizing various disasters occurring in the environment and apply them in various disciplines of day-to-day life   |
| 78 | 191ME6O06 | Solar Energy Utilization                    |   |   |   |  |
| 79 | 191ME6O08 | Introduction to Hydraulics and Pneumatics   |   | ✓ |   | Students are able to demonstrate problem solving skills in analyzing the hydraulic and pneumatic systems   |
| 80 | 191ME6O09 | 3D Printing                                 | ✓ |   |   | Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.  |
| 81 | 191ME6O10 | Robotics                                    | ✓ |   |   | Students are able to acquire skills to understand the concepts of robot kinematics, Dynamics and trajectory planning enabling them to be employed in robot manufacturing companies   |
| 82 | 191ME6O11 | Management Science                          |   |   | ✓ | Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.   |
| 83 | 191ME6O12 | Entrepreneurship Development and Incubation |   |   | ✓ | Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.   |
| 84 | 191EC6O04 | Biomedical Instrumentation                  | ✓ |   |   | Students are able to acquire skills to understand and apply the biomedical instrumentation enabling them to be employed in various organizations, which developed and fabricate biomedical instruments like ECG etc.   |
| 85 | 191EC6O05 | ECAD Tools                                  | ✓ |   |   | Students are able to acquire skills related to ECAD tools, enabling them to be employed as Design engineers  |



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| 86 | 191CS6O06 | Operating Systems                    | ✓ |   |   | Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities   |
| 87 | 191CS6O07 | Web Technologies                     | ✓ |   |   | Students are able to acquire skills related to developing web pages, enabling them to be employed as front-end developers.   |
| 88 | 191CS6O08 | Cyber Security                       | ✓ |   |   | Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.  |
| 89 | 191CS6O09 | AR / VR                              | ✓ |   |   | Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.   |
| 90 | 191IT6O03 | Computer Organization                | ✓ |   |   | Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.  |
| 91 | 191IT6O04 | AI Tools & Techniques                |   | ✓ |   | Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.   |
| 92 | 191IT6O05 | Robotic Process Automation           |   | ✓ |   | Students are able to demonstrate technical skill to develop applications using UI Path Programming and extraction techniques to deploy robot configurations  |
| 93 | 191MI6O02 | Industrial Safety Practices          |   |   |   |  |
| 94 | 191MI6O03 | Electrical Equipment's in Mines      |   | ✓ |   | This subject helps the student to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthing methods and applicability. This subject will guide the students of mining to be self-sufficient for the electrical related problems in mines. |
| 95 | 191PT6O03 | Unconventional Hydrocarbon Resources |   | ✓ |   | Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves.   |
| 96 | 191PT6O04 | Asset Management                     |   |   | ✓ | Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.  |
| 97 | 191AG6O02 | Weather forecast in Agriculture      | ✓ |   |   | Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.  |

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| 98  | 191AG6O03 | Bio-energy systems design and applications    | ✓ |   |  | Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.   |
| 99  | 191EE6L06 | Electrical Measurements & Instrumentation Lab | ✓ |   |  | Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.  |
| 100 | 191EE6L07 | Power Electronics Lab                         | ✓ |   |  | Students are able to acquire skills related to the various methods that are used in power electronic based devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc. |
| 101 | 191HS6T07 | Employability Skills -IV                      | ✓ |   |  | This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.                                     |
| 102 | 191MC6A09 | Professional Ethics and Human Values          |   | ✓ |  | This subject helps the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.  |

## VII SEMESTER

| S. No | Course Code | Name of the Course                 | Employability | Skill Development | Entrepreneurship | Remarks   |
|-------|-------------|------------------------------------|---------------|-------------------|------------------|---|
| 103   | 171EE7T18   | Utilization of Electrical Energy   | ✓             |                   |                  | Students are able to acquire skills related to high-quality power efficiency that enables them to get employed in industries focusing on optimum utilization of electricity.  |
| 104   | 171EE7T19   | Linear and Digital IC Applications |               | ✓                 |                  | Students are able to demonstrate technical solving skills by providing knowledge on ICs with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.   |
| 105   | 171EE7T20   | Power System Operation and Control | ✓             |                   |                  | Students are able to acquire skills related to a well-designed power system that ensures robust performance and maximizes plant availability under all operating conditions, including transient conditions like motor starting, non-linear loads and generator loss enabling them to get employed in electrical power sectors. |
| 106   | 171EE7T21   | Switch Gear and Protection         | ✓             |                   |                  | Students are able to acquire skills related to mitigating some of the potential protection challenges imposed by the growth in non-dispatchable renewable generation on electric grids is an important consideration enabling them to be employed in protection of power system industry.                                       |
| 107   | 171EE7E11   | Optimization Techniques            |               | ✓                 |                  | Students are able to demonstrate technical skill of optimization that helps to gain problem-solving skills optimally i.e., to solve a problem in a logical as well as creative way in an optimized manner.  |
| 108   | 171EE7E12   | Digital Signal Processing          | ✓             |                   |                  | Students are able to acquire skills related to processing of digital signals enabling them to be employed for designing and manufacturing of electronic/ communication equipment.   |
| 109   | 171EE7E13   | Special Electrical Machines        | ✓             |                   |                  | Students are able to acquire skills related to special machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be employed for controlling, designing and manufacturing in power station, wind turbines, etc   |
| 110   | 171EE7E14   | High Voltage Engineering           | ✓             |                   |                  | Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.   |



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| 111 | 171EE7E15 | Electric Power Quality                       | ✓ |   |  | Students are able to acquire skills related to high-quality power efficiency that enables them to be employed in industries focusing in saving money on electricity bill and carbon footprint.   |
| 112 | 171EE7E16 | EHVAC Transmission                           | ✓ |   |  | Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.  |
| 113 | 171EE7L09 | Power Systems Simulation Lab                 | ✓ |   |  | Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.   |
| 114 | 171EE7L10 | Micro Processor and Micro Controllers Lab    | ✓ | ✓ |  | Employability: Students are able to acquire skills related to basic machine level and assembly level programming of processors and controllers enabling them to be employed for designing and manufacturing of digital electronic equipment.<br>Skill Development: Students are able to demonstrate programming skill related to microprocessors and controllers, interfacing of peripherals etc |
| 115 | 171EE7P01 | Industry Oriented (Internship) Minor 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.  |

## VIII SEMESTER

| S. No | Course Code | Name of the Course                        | Employability | Skill Development | Entrepreneurship | Remarks  |
|-------|-------------|---|---------------|-------------------|------------------|--|
| 116   | 171EE8E17   | HVDC Transmission                         | ✓             |                   |                  | Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.  |
| 117   | 171EE8E18   | Flexible AC Transmission Systems          | ✓             |                   |                  | Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.   |
| 118   | 171EE8E19   | Power System Reforms                      | ✓             |                   |                  | Students are able to acquire skills related to analyze of reforms that is required to achieve government's vision of energy access, efficiency, sustainability and security that enables them to get employed in energy sectors.   |
| 119   | 171EE8E20   | Digital Control Systems                   |               | ✓                 |                  | This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.  |
| 120   | 171EE8O01   | Energy Audit, Conservation and Management |               |                   | ✓                | the course focuses on the loss and profit studies and other company maintenance actives, creates the entrust among the students to have own company.   |
| 121   | 171EE8O02   | VLSI Design                               | ✓             |                   |                  | Students are able to acquire skills related to design, synthesize and evaluate the performance of VLSI circuits enabling them to be employed for designing and manufacturing of complex electronic equipment in the fields of communications, control and instrumentation etc. |
| 122   | 171EE8O03   | Unix and Shell Programming                |               | ✓                 |                  | Students are able to demonstrate programming skill for coding and building applications which is required for software industries.   |
| 123   | 171EE8O04   | Neural Networks and Fuzzy Logic           | ✓             |                   |                  | Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems   |
| 124   | 171EE8O05   | Robotics                                  |               |                   | ✓                | Students are able to acquire skills related to the measurement of linear and angular measuring instruments, working of measuring instruments and control systems.  |

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| 125   | 171EE8O06 | Vehicular Electric Power Systems | ✓  |    |   | Students are able to acquire skills related to various types of hybrid vehicles operations and control enabling the students to get employed in EV sector.  |
| 126   | 171EE8O07 | Internet of Things               | ✓  |    |   | Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.  |
| 127   | 171EE8O08 | Cyber Security                   | ✓  |    |   | Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.   |
| 128   | 171EE8P02 | Major 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. |
| Total |           | 128                              | 74 | 32 | 8 |   |

  
Program Coordinator

  
Head of the Department  
Head of The Department  
of: Of Electrical & Electronics Engineering  
Aditya Engineering College (AS)