

# PROGRAM STRUCTURE

## I SEMESTER

| S. No | Course Code | Name of the Course                         | Employability | Skill Development | Entrepreneurship | Remarks  |
|-------|-------------|--|---------------|-------------------|------------------|--|
| 1     | 172PD1T01   | Electrical Machine Modeling & 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                      |
| 2     | 172PD1T02   | 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     | 172PD1T03   | Power Electronic Control of DC 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. |
| 4     | 172PD1T04   | 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.   |
| 5     | 172PD1E01   | Modern Control Theory                      |               | ✓                 |                  | This subject ensures that the students develop strategic skills to improving productivity and enhancing the best practices of the company.   |
| 6     | 172PD1E02   | Power Quality                              | ✓             |                   |                  | 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.  |
| 7     | 172PD1E03   | 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.  |
| 8     | 172PD1E04   | Energy Auditing, Conservation & Management |               |                   | ✓                | the course focuses on the loss and profit studies and other company maintenance activities, creates the interest among the students to have own company.   |

|    |           |                                    |   |  |  |   |
|----|-----------|------------------------------------|---|--|--|---|
| 9  | 172PD1E05 | Artificial Intelligence Techniques | ✓ |  |  | 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  |
| 10 | 172PD1E06 | HVDC Transmission                  | ✓ |  |  | 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. |
| 11 | 172PD1L01 | Simulation Lab                     | ✓ |  |  | Students are able to acquire skills related to fundamental knowledge on various analytical tools for engineering simulation and enabling them to be employed in areas of computer aided design  |

## II SEMESTER

| S. No | Course Code | Name of the Course                       | Employability | Skill Development | Entrepreneurship | Remarks   |
|-------|-------------|--|---------------|-------------------|------------------|---|
| 12    | 172PD2T05   | 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.  |
| 13    | 172PD2T06   | Power Electronics Control of AC Drives   | ✓             |                   |                  | Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.               |
| 14    | 172PD2T07   | Digital Controllers                      |               | ✓                 |                  | This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.   |
| 15    | 172PD2T08   | Custom Power Devices                     |               |                   |                  |   |
| 16    | 172PD2E07   | 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.   |
| 17    | 172PD2E08   | Reactive Power Compensation & Management | ✓             |                   |                  | 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.   |
| 18    | 172PD2E09   | Electrical Distribution System           | ✓             |                   |                  | 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. |
| 19    | 172PD2E10   | 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.  |
| 20    | 172PD2E11   | Special 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                           |

|    |           |  |   |   |  |   |
|----|-----------|--|---|---|--|---|
| 21 | 172PD2E12 | Programmable Logic<br>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.  |
| 22 | 172PD2L02 | Power Converters & Drives Lab                    | ✓ |   |  | Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc. |




## III SEMESTER

| S. No | Course Code | Name of the Course      | Employability | Skill Development | Entrepreneurship | Remarks   |
|-------|-------------|-------------------------|---------------|-------------------|------------------|---|
| 23    | K4301       | Comprehensive Viva-Voce |               |                   |                  |   |
| 24    | K4302       | Seminar – I             | ✓             |                   |                  | students will be able to demonstrate problem identification, analysis, design solutions or applications in petroleum engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs. |
| 25    | K4303       | Project Work Part – I   |               |                   |                  |   |

## IV SEMESTER

| S. No | Course Code | Name of the Course      | Employability | Skill Development | Entrepreneurship | Remarks   |
|-------|-------------|-------------------------|---------------|-------------------|------------------|---|
| 26    | L4301       | Seminar – II            |               |                   |                  |   |
| 27    | L4302       | Project Work Part- - II | ✓             |                   |                  | students will be able to demonstrate problem identification, analysis, design solutions or applications in petroleum engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs. |
| Total |             | 27                      | 18            | 4                 | 1                |   |

  
Program Coordinator

  
Head of the Department  
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