

PROGRAM STRUCTURE
I SEMESTER

| S. No | Course Code | Name of the Course | Employability | Skill Development | Entrepreneurship | Remarks |
|-------|-------------|--|---------------|-------------------|------------------|--|
| 1 | 172TE1T01 | Optimization Techniques & Applications | | ✓ | | Students are able to acquire skills in solving single variable and multi - variable nonlinear unconstrained optimization |
| 2 | 172TE1T02 | Advanced Thermodynamics | ✓ | | | Students are able to acquire skills related to the estimation of properties of real gases, combustion of gas mixtures and compare vapor and gas power cycles. enabling them to be employed in thermal power plants as a thermodynamics engineer. |
| 3 | 172TE1T03 | Advanced Heat & Mass Transfer | ✓ | | | Students are able to acquire skills related to the conduction in steady and unsteady cases and solve 2-D steady and transient heat conduction problems and enabling them to be employed in piping design companies. |
| 4 | 172TE1T04 | Advanced Fluid Mechanics | ✓ | | | Students are able to acquire skills related to the potential flow equations to basic flows and enabling them to be employed as a fluid engineer. |
| 5 | 172TE1E01 | Gas Dynamics | ✓ | | | Students are able to acquire skills related to the fluid dynamic and thermodynamic aspects of high-speed flows and enabling them to be employed in thermal power plants. |

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| 6 | 172TE1E02 | Refrigeration & Cryogenics | ✓ | | | Students are able to acquire skills related to the effect of various refrigerants on the environment and wide application of cryogenics in science and technology enabling them to be employed in refrigeration industries. |
| 7 | 172TE1E03 | Renewable Energy Technologies | | | | |
| 8 | 172TE1E04 | Theory and Technologies of Fuel Cells | ✓ | | | Students are able to acquire skills related to the fuel cells and its characteristics, fuel processing and its availability and enabling them to be employed in solar energy-based companies |
| 9 | 172TE1E05 | Advanced 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. |

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| 10 | 172TE1E06 | Solar Energy Technology | ✓ | | | Students are able to acquire skills related to the concepts about the types of solar collectors and their measuring principles and impart the knowledge of the various types of thermal energy storage methods and its applications enabling them to be employed in solar based industries. |
| 11 | 172TE1E07 | Turbo Machines | ✓ | | | Students are able to acquire skills related to the performance analysis of turbo machines and enabling them to be employed in gas power plants |
| 12 | 172TE1E08 | Alternative Fuels Technologies | | ✓ | | Students are able to acquire skills in analyzing potential alternative liquid and potential gaseous fuels. |
| 13 | 172TE1L01 | Thermal Engineering Lab | ✓ | | | Students are able to acquire skills to enhance the knowledge about IC Engines and calculating COP and enabling them to be employed in automotive industries. |

II SEMESTER

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|-------|-------------|---------------------------------|---------------|-------------------|------------------|--|
| 14 | 172TE2T05 | Fuels, Combustion & Environment | ✓ | | | 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. |
| 15 | 172TE2T06 | Energy Management | ✓ | | | Students are able to acquire skills related to the importance of energy management in the functional area and carrying out budgeting and risk analysis of projects enabling them to be employed in Emery sector. |
| 16 | 172TE2T08 | Finite Element Method | ✓ | | | Students are able to acquire skills related to analytical skills in solving static and dynamic heat transfer problems enabling them to be employed as a FEA engineer. |
| 17 | 172TE2T07 | Computational Fluid Dynamics | ✓ | | | Students are able to acquire skills related to understand the basics of computational fluid dynamics (CFD) and compare finite difference and finite volume methods applied in CFD and enabling them to be employed as Computational fluid dynamics engineer. |

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| 18 | 172TE2E09 | Materials Technology | | | | |
| 19 | 172TE2E10 | Convective Heat Transfer | | ✓ | | Students are able to acquire skills related to the basics of convective heat transfer, free and forced convection in heat transfer. |
| 20 | 172TE2E11 | Thermal and Nuclear Power Plants | ✓ | | | Students are able to acquire skills related to the principles of combustion and analysis of power cycles and enabling them to be employed in thermal and nuclear power plants. |
| 21 | 172TE2E12 | Advanced Automobile Engineering | ✓ | | | 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. |
| 22 | 172TE2E13 | Thermal Measurements and Process Controls | ✓ | | | Students are able to acquire skills related to the knowledge of various temperature measuring devices and enabling them to be employed in thermal power plants. |
| 23 | 172TE2E14 | Cryogenic Engineering | ✓ | | | Students are able to acquire skills related to the technical knowledge of cryogenic fluids, purification systems and cryogenic refrigeration systems. Enabling them to be employed in refrigeration industries. |

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| 24 | 172TE2E15 | Jet Propulsion and Rocketry | ✓ | | | Students are able to acquire skills related to the knowledge of the turbojet propulsion system and the principles of jet propulsion, rocketry and nozzle theory enabling them to be employed in defense and aircraft building organizations. |
| 25 | 172TE2E16 | Equipment Design for Thermal Systems | ✓ | | | Students are able to acquire skills related to the design of heat exchangers, vaporizers, evaporators enabling them to be employed in thermal power plants. |
| 26 | 172TE2L02 | Thermal Systems Design Lab | | ✓ | | Students are able to acquire skills in analyzing the performance of various thermal equipment's. |

III SEMESTER

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| 27 | --- | Comprehensive Viva-Voce | ✓ | | | students will be able to demonstrate problem identification, analysis, design solutions or applications in thermal engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs. |
| 28 | --- | Seminar – I | | | | |
| 29 | --- | Project Work Part - I | ✓ | | | Students will be able to demonstrate problem identification, analysis, design solutions or applications in thermal engineering domain through the acquired technical, cognitive, communication and creative skills. |

IV SEMESTER

| S. No | Course Code | Name of the Course | Employability | Skill Development | Entrepreneurship | Remarks |
|--------------|-------------|------------------------|---------------|-------------------|------------------|---|
| 30 | --- | Seminar – II | | | | |
| 31 | --- | Project Work Part - II | ✓ | | | Students will be able to demonstrate problem identification, analysis, design solutions or applications in thermal engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs. |
| Total | | 31 | 23 | 4 | 0 | |



Program Coordinator



Head of the Department

Head of the Department
 Department of Mechanical Engineering
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