

**SCHOOL OF RESEARCH & TECHNOLOGY**

AN ISO 9001: 2008 Certified Institute

|  |   |                     |                               |
|--|---|---------------------|-------------------------------|
| <b>Course Outcomes</b>                       |   | <b>Department -</b> | <b>Mechanical Engineering</b> |
| <b>Course Title:</b>                         | <b>Advanced Mathematics</b>   |                     |                               |
| <b>Course Code:</b>                          | <b>MTTE-101</b>   |                     |                               |
| <b>Program:</b>                              | <b>M.Tech.</b>  | <b>Semester: I</b>  |                               |
| <b>Credits:</b>                              | <b>T-1</b>  | <b>L-3</b>          | <b>Total-4</b>                |
| <b>Course Outcome</b>                        |   |                     |                               |
| 1  | Use mathematical tool to understand engineering principles and concepts.                      |                     |                               |
| 2  | Find the distance between points with the help of co-ordinate geometry                        |                     |                               |
| 3  | Apply Differentiation to velocity, acceleration maximum and minimum                           |                     |                               |
| 4  | Apply integration for finding area and volume.  |                     |                               |
| 5  | Apply basic knowledge of statistics for sampling, data collection, standard deviation         |                     |                               |
| <b>Course Outcomes</b>                       |   | <b>Department -</b> | <b>Mechanical Engineering</b> |
| <b>Course Title: Advanced Thermodynamics</b> |   |                     |                               |
| <b>Course Code: MTTE-102</b>                 |   |                     |                               |
| <b>Program: M.Tech.</b>                      |   | <b>Semester: I</b>  |                               |
| <b>Credits: T-1</b>                          |   | <b>L-3</b>          | <b>Total-4</b>                |
| <b>Course Outcome</b>                        |   |                     |                               |
| 1  | Explain basic concepts such as thermodynamic temperature, equilibrium, and reversibility      |                     |                               |
| 2  | Analyse Phase and reaction equilibriums:  |                     |                               |
| 3  | knowledge about Steam and gas turbines principles, schematic plantlayouts, application of app |                     |                               |
| 4  | study on Process heat, heat sources and energy transport systems                              |                     |                               |
| 5  | Determine air/fuel ratios and exhaust analysis for common fuels and describe their            |                     |                               |

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| <b>Course Outcomes</b> |   | <b>Department -</b> | <b>Mechanical Engineering</b> |
| <b>Course Title:</b>   | <b>Advanced Fluid Mechanics</b>   |                     |                               |
| <b>Course Code:</b>    | <b>MTTE-103</b>   |                     |                               |
| <b>Program:</b>        | <b>M.Tech.</b>  | <b>Semester: I</b>  |                               |
| <b>Credits:</b>        | <b>T-1</b>  | <b>L-3</b>          | <b>Total-4</b>                |
| <b>Course Outcome</b>  |   |                     |                               |
| 1                      | Explain This course is a survey of principal concepts and methods of fluid dynamics                               |                     |                               |
| 2                      | introduction to turbulence lift and drag surface tension and surface tension driven flows.                        |                     |                               |
| 3                      | computational fluid dynamic efficiency, axial thrust, efficiencies, heat exchanger effectiveness                  |                     |                               |
| 4                      | Advanced Fluid Mechanics” courses typically cover a variety of topics involving fluids in various multiple states |                     |                               |
| 5                      | Understand the Theory and design of hydro-turbines and centrifugal pumps  |                     |                               |
| <b>Course Outcomes</b> |   | <b>Department -</b> | <b>Mechanical Engineering</b> |
| <b>Course Title:</b>   | <b>IC Engines &amp; Alternate Fuels</b>   |                     |                               |
| <b>Course Code:</b>    | <b>MTTE-104</b>   |                     |                               |
| <b>Program:</b>        | <b>M.Tech.</b>  | <b>Semester: I</b>  |                               |
| <b>Credits:</b>        | <b>T-1</b>  | <b>L-3</b>          | <b>Total-4</b>                |
| <b>Course Outcome</b>  |   |                     |                               |
| 1                      | Concepts Fuels for use in S.I. Engines  |                     |                               |
| 2                      | Combustion in S.I. Engines  |                     |                               |
| 3                      | Performance & testing of I.C. Engine  |                     |                               |
| 4                      | Non Conventional I.C. Engines<br>conservation equation for transport phenomena                                    |                     |                               |
| 5                      | Introduction, Necessity for substitute Fuels.   |                     |                               |

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| <b>Course Outcomes</b> |  | <b>Department -</b> | <b>Mechanical Engineering</b> |
| <b>Course Title:</b>   | <b>Design of Heat Exchangers</b>   |                     |                               |
| <b>Course Code:</b>    | <b>MTTE-105</b>  |                     |                               |
| <b>Program:</b>        | <b>M.Tech.</b>   | <b>Semester: I</b>  |                               |
| <b>Credits:</b>        | <b>T-1</b>   | <b>L-3</b>          | <b>Total-4</b>                |
| <b>Course Outcome</b>  |  |                     |                               |
| 1                      | Students will demonstrate knowledge Types of Heat Exchangers                                     |                     |                               |
| 2                      | Students will demonstrate the ability to Numerical solution Procedures heat exchanger            |                     |                               |
| 3                      | Computational fluid dynamic efficiency, axial thrust, efficiencies, heat exchanger effectiveness |                     |                               |
| 4                      | Hydraulic design of Commonly used heat exchangers.   |                     |                               |
| 5                      | Students will demonstrate an understanding of its mathematical model, micro Heat Exchangers      |                     |                               |
| <b>Course Outcomes</b> |  | <b>Department -</b> | <b>Mechanical Engineering</b> |
| <b>Course Title:</b>   | <b>Lab-I</b>   |                     |                               |
| <b>Course Code:</b>    | <b>MTTE-106</b>  |                     |                               |
| <b>Program:</b>        | <b>M.Tech.</b>   | <b>Semester: I</b>  |                               |
| <b>Credits:</b>        | <b>T-0</b>   | <b>P-6</b>          | <b>Total-6</b>                |
| <b>Course Outcome</b>  |  |                     |                               |
| 1                      | Study of combustion of flame   |                     |                               |
| 2                      | Experiment on thermodynamics laws  |                     |                               |
| 3                      | To Determine Volume Flow Rate for Low Speed Wind Tunnel using Pitot Tube.                        |                     |                               |
| 4                      | To find out the terminal velocity of a spherical body in water.                                  |                     |                               |
| 5                      | Reynolds experiment for demonstration of stream lines & turbulent flow                           |                     |                               |

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| <b>Course Outcomes</b> |   | <b>Department -</b> | <b>Mechanical Engineering</b> |
| <b>Course Title:</b>   | <b>Lab-II</b>                               |                     |                               |
| <b>Course Code:</b>    | <b>MTTE-107</b>                             |                     |                               |
| <b>Program:</b>        | <b>M.Tech.</b>                              | <b>Semester: I</b>  |                               |
| <b>Credits:</b>        | <b>T-0</b>                                  | <b>P-6</b>          | <b>Total-6</b>                |
| <b>Course Outcome</b>  |   |                     |                               |
| 1                      | Test on four stroke Diesel Engine.          |                     |                               |
| 2                      | Morse Test on multi cylinder Engine         |                     |                               |
| 3                      | Test on computer controlled I.C. Engine     |                     |                               |
| 4                      | Study of Heat Exchangers.                   |                     |                               |
| 5                      | Test on shell and tube type heat exchanger. |                     |                               |