

MVSR Engineering College, Nadergul.
Department of Mechanical Engineering
COURSE OUTCOMES

Class: B. E. 2nd Year I Semester
 Name of the course: Thermodynamics
 Course Name (Code): ME 253

At the end of the course student is able to

| S.No | Outcomes | POs mapped | PSOs mapped |
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| M 253.1 | Correlate the study of thermodynamics with the fundamental conceptual terminologies like properties, systems, processes, cycles, states, different types of equilibrium, energy, etc. Classify different systems, identify the different cyclic processes and solve problems related to zeroth law of thermodynamics. | PO1, PO2, PO4, PO7, PO10, PO12. | PSO1, PSO2. |
| M 253.2 | Distinguish the different forms of energy, namely heat, work and internal energy based on the review of First law of thermodynamics. Subsequently, the student would be able to compute the work done, heat transferred and internal energy changes during various processes. | PO1, PO2, PO3, PO4, PO5, PO9, PO10. | PSO1, PSO2. |
| M 253.3 | Analyze the Second Law of Thermodynamics and correlate them for solving problems on heat engines, heat pumps and refrigerators. | PO1, PO2, PO3, PO4, PO7, PO9, PO10. | PSO1, PSO2. |
| M 253.4 | Assess the importance of entropy and apply the concepts of entropy to solve problems involving change in entropy for various processes. | PO1, PO2, PO3, PO4, PO6, PO7, PO9, PO10, PO12. | PSO1, PSO2. |
| M 253.5 | Recognize the various curves of phase transformation based on P-V, T-S, P-T, V-T and T-H diagrams. Based on it, the student will demonstrate the ability to locate the relevant properties of steam like specific volume, specific enthalpy, specific entropy, dryness fraction, etc using steam tables and Mollier charts and use these properties in solving problems related to steam flow through engineering devices like turbine, boiler, etc | PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12. | PSO1, PSO2. |

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| M 253.6 | Assess the relationships between various thermodynamic properties with the help of Maxwell relations and Clapeyron equation. | PO1, PO2, PO12. | PSO1, PSO2. |
| M 253.7 | Identify the various air standard cycles by drawing their P-V and T-S diagrams and solve problems related to air standard cycles to compute the thermal efficiency of the cycle and also the temperatures and pressures at cardinal points of the cycle. | PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12. | PSO1, PSO2 |
| M 253.8 | Analyse the various gas laws and solve problems involving calculations based on gravimetric basis and volumetric basis. | PO1, PO2. | PSO1, PSO2 |