



Late Purushottam Hari (Ganesh) Patil Shikshan Sanstha's
Mauli Group of Institution's, College of Engineering & Technology, Shegaon
Department of Mechanical Engineering

B.E. 3rd Semester NEP

Course: Engineering Thermodynamics PCC-1

Course Code: 3ME200PC

At the end of Engineering Thermodynamics Course Student will be able to;

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Apply energy balance to systems and control volumes in situations involving heat and work interactions	L2
2	Evaluate changes in properties of pure substances	L3
3	Evaluate and compare the performance of energy conversion devices	L2
4	Differentiate between high grade and low grade energies	L2
5	Analyze the impact of energy wastage and degradation on environment	L2
6	Understand concept of Entropy and analyze thermodynamic cycles for efficiency and performance	L3

Course: Manufacturing Technology PCC-2

Course Code: 3ME201PC

At the end of Manufacturing Technology Course Student will be able to;

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Apply knowledge of casting processes for the specified working conditions.	L3
2	Apply the knowledge of basic and advanced welding processes to solve the related problem	L3
3	Apply the knowledge of various forming processes for the given operating conditions.	L3
4	Apply the concept of mechanics of metal cutting for various lathe operations.	L3
5	Understand the various milling, drilling, broaching and boring processes	L2
6	Apply the knowledge of grinding and finishing processes for enhancing the surface finish of given component.	L3



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Course: Mechanics of Materials PCC-3

Course Code: 3ME202PC

At the end of Mechanics of Materials Course Student will be able to;

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	To determine stresses and strain in a member subjected to axial, bending and torsional stresses.	L1,L2
2	To observe different types of material behaviour such as elastic, plastic, ductile and brittle.	L1
3	To study shear force and bending moment on different types of beams.	L3,L4
4	To calculate slope and deflection on different types of beams and check the stability of beam.	L3,L4
5	To study different types of loads and corresponding strain energy.	L1,L2
6	To observe the effect of torsional stresses and its application to different types of spring.	L2,L3

Course: Basics of Mechanical Engineering MDM-I

Course Code: 3ME205M

At the end of Basics of Mechanical Engineering course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Understand the properties, testing and inspection of engineering materials.	L2
2	Summarize fundamental techniques and process used in energy conversion systems.	L2
3	Understand various casting techniques and the importance of various metal forming processes.	L2



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Course: Power Plant Engineering (Open Elective-I)

Course Code: 3ME206OE

At the end of Power Plant Engineering course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Discuss the energy sources and principles of operation for different power plants.	L2
2	Determine the performance of the thermal power plant and its systems	L3
3	Describe working principles of a gas turbine power plant and its components.	L2
4	Describe the design layout and working of hydroelectric power plants.	L2
5	Compare various types of nuclear reactors and recognize nuclear waste disposal issues.	L2
6	Calculate power plant factors and identify parameters affecting economics of power plant.	L3

Course: Engineering Materials (Open Elective-I)

Course Code: 3M2060E

At the end of Engineering Materials course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Define basic concept of process metallurgy, understand classification of material and their applications.	L1,L2
2	Understand the basic mechanical properties of engineering materials and properties and applications of various metals.	L2
3	Explain applications and properties of newer class materials like smart materials, piezoelectric materials, biomaterials, super conducting materials etc.	L3,L4
4	Understand and suggest the properties and applications of various stainless steels.	L4,L2
5	Explain features, classification, applications of newer class materials like biomaterials, composite materials etc.	L3,L4
6	Understand the concepts of Powder Metallurgy and its industrial applications.	L2



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Course: Manufacturing Processes (Open Elective-I)

Course Code: 3ME206OE

At the end of Manufacturing Processes course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Explain different types of manufacturing processes and their applications.	L2
2	Describe the metal casting process and equipment used.	L2
3	Apply the knowledge of various forming processes for the given operating conditions.	L3
4	Explain the principles and operations of welding processes.	L2
5	Identify the tool geometry of a single point cutting tool and principles of metal cutting.	L3
6	Differentiate between additive and subtractive manufacturing processes.	L2



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B.E. 4th Semester NEP

Course: Material Science (PCC-1)

Course Code: 4ME209PC

At the end of Material Science course, Student will be able to;

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Define basic concepts of metallurgy and classification of materials.	L1
2	Understand the concept of phase & phase diagram & the basic terminologies associated with metallurgy.	L2
3	Explain features, classification and Practical applications of ferrous & nonferrous materials.	L3,L4
4	Explain the classification, microstructure of cast iron sand and its industrial applications.	L4
5	Understand and suggest the heat treatment process & types, significance of properties Vs microstructure.	L4,L2
6	Explain features, classification, applications of the Surface hardening processes and concepts of Powder Metallurgy and its industrial applications.	L3,L2

Course: Fluid Mechanics (PCC-2)

Course Code: 4ME210PC

At the end of Fluid Mechanics course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Understand the basic properties of fluid	L2
2	Understand various forces & conditions of equilibrium of floating & submerged bodies.	L2
3	Understand kinematics and dynamics of flow.	L2
4	Apply Darcy weisbach equation in various fluid flow	L3
5	Understand the concept of motion of viscous fluid	L2
6	Calculate the force exerted by the jet on surfaces	L2



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Course: Energy Conversion -I (PCC-3)

Course Code: 4ME211PC

At the end of Energy Conversion -I Course Student will be able to;

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Understand the concepts of steam, boilers, steam power plant, mounting and accessories.	L2
2	Evaluate the performance of boiler	L3
3	Calculate performance parameters of condenser and nozzle efficiency.	L3
4	Analyze the performance of steam turbines.	L4
5	Compare the various types of nuclear reactors	L2
6	Understand the various renewable energy sources and conversion systems	L2

Course: Fluid Mechanics and Machines (MDM -II)

Course Code: 4ME214M

At the end of Fluid Mechanics and Machines (MDM -II)course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	To Understand the basic properties of fluid & to understand concept of buoyancy and floatation of floating/submerged bodies	L2
2	Demonstrate and understand the working of hydraulic turbines	L2
3	Demonstrate and understand the working of centrifugal pumps and reciprocating pump	L2



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Course: Computational Methods and Programming

Course Code: 4ME215VS

At the end of Computational Methods and Programming course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Apply fundamental programming constructs to solve numerical problems and calculate errors associated with computational methods.	L2
2	Solve linear algebraic equations using numerical techniques.	L3
3	Estimate solution to problems using numerical integration and differentiation.	L3
4	Apply computational schemes for solving systems of ordinary differential equations.	L3

Course: Business Planning and Project Management (Open Elective- II)

Course Code: 4ME216OE

At the end of Business Planning and Project Management course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Understand the concept of Business Planning and forecasting and other planning aspects in business.	L3
2	Understand the importance of project planning and critically examine which project needs to be undertaken using various models.	L4
3	Understand and apply the knowledge of project appraisal and project report writing.	L2



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Course: Sustainable Energy (Open Elective- II)

Course Code: 4ME216OE

At the end of Sustainable Energy course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Understand the basic concept of Sustainable energy, Sources and its importance, radiation transmission through covers and solar energy collections, the basic concept of Solar energy utilization and storage.	L2
2	Understand the basic concept of Geothermal energy, energy from ocean.	L2
3	Understand the basic concept of energy from Wind and biomass.	L2

Course: Automotive Technology (Open Elective- II) Code: 4ME2160E

At the end of Automotive Technology course the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Understand the basics of automobile engineering and its components.	L1
2	Understand the basics of Control system and transmission system	L1
3	Get aquatinted with the recent developments of electric and Hybrid Vehicles.	L1



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FOR EXIT OPTIONS, AFTER SEMESTER -III & IV

Course: Industrial Safety Engineering

At the end of Industrial Safety Engineering course, the student will be able:

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Classify different safety management policies and strategies	L2
2	Analyze causes of accidents and measures for prevention of accidents	L4
3	Function for cause identification and prevention related of fire accidents	L4
4	Explain hazards and safety issues in confined spaces	L2
5	Classify occupational health and hygiene	L2
6	Apply Hazard Identification and Risk Assessment (HIRA) for safety on shop floor.	L3

Course: Quality Control and Inspection

At the end of Quality Control and Inspection Course Student will be able to;

Co. No	Course Outcomes	Level of Learning (As per Bloom's Taxonomy)
1	Explain the concept of Quality and Quality Control.	L2
2	Make use of appropriate control charts for quality control.	L3
3	Interpret the need of process capability analysis for solving quality related issues.	L2
4	Choose appropriate sampling for quality control.	L3
5	Solve the numerical based reliability and quality.	L3
6	Demonstrate experimental design for quality function.	L3