



SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGINEERING, SHEGAON

DEPARTMENT OF MECHANICAL ENGINEERING

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COURSE OUTCOMES OF ALL COURSES OF FOURTH SEMESTER

BE MECHANICAL ENGINEERING

#### **4ME01 Material Science**

After successfully completing the course, students will be able to:

- 1 Demonstrate the concept, classification and applications of material science.
- 2 Demonstrate phase diagrams, microstructure of basic alloys and their properties.
- 3 Explain various heat treatment process and its effects on microstructure and mechanical properties of materials.
- 4 Explain Powder metallurgy, hot and cold working techniques and their effects on mechanical properties of the material.

#### **4ME02 Energy Conversion - I**

After successfully completing the course, students will be able to:

- 1 Select the different types of boiler and its mounting and accessories
- 2 Analyze the performance of boiler, condenser, nozzle and turbines
- 3 Select different types of nuclear reactor.
- 4 Identify various renewable energy sources for power generations.

#### **4ME03 Manufacturing Technology**

After successfully completing the course, students will be able to:

- 1 Apply the concept of mechanics of metal cutting for various machining processes.
- 2 Analyze the process parameters for given machining operations.
- 3 Apply the concept of grinding process for finishing operations.
- 4 Identify the various unconventional machining processes.

#### **4ME04 Basic Electrical Drives and Control**

After successfully completing the course, students will be able to:

- 1 Understand the working of electrical drives and their components
- 2 Understand the basics of DC motors and their characteristics
- 3 Understand the working of AC motors, induction motors and concept of braking
- 4 Understand the different speed control methods of A.C. and D.C. motors
- 5 Understand the design of transducers and their applications
- 6 Understand the industrial applications of different drives

#### **4ME05 Hydraulic Machines**

After successfully completing the course, students will be able to:

- 1 Analyse different turbines for engineering applications.
- 2 Compare pumping systems & examine their performance characteristics .
- 3 Identify various principles of compressible flow .
- 4 Classify different types of hydraulic systems