BHARATI VIDYAPEETH'S

COLLEGE OF ENGINEERING, KOLHAPUR

# Coure Outcome

Name of Department: - MECHANICAL ENGINEERING

Class: - Second Year B. Tech. Sem:- III

Course: - ME0231- Mathematics for Mechanical Engineering

Course Outcomes:

Upon successful completion of this course, the student will be able to:

CO1 Solve Linear Differential Equations with constant coefficients.

CO2 Apply Laplace transform and inverse Laplace transform in solving linear differential equation with initial conditions arising in engineering problems

CO3 Develop Fourier Series expansion of a function over the given interval.

CO4 Apply knowledge of vector differentiation to find directional derivatives, curl and divergence of vector fields

CO5 Describe the statistical data numerically by using Lines of regression and Curve fittings.

CO6 Make use of Partial Differential Equation to solve the Mechanical Engineering problems

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:-Second Year BTECH Sem:- III

Course: -ME0232 : Applied Thermodynamics

Course Outcomes:

Upon successful completion of this course, the student will be able to:

CO1 Remember the fundamental laws of thermodynamics

CO2 Understand and Solve the introductory problems on Rankine cycle.

CO3 Classify steam generators and condensers and Steam turbines.

CO4 Design the steam nozzle.

CO5 Understand and Solve problems on Steam turbines.

CO6 Understand the property of lubricants and selection of lubricants

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICA ENGINEERING

Class:- Second Year B. Tech. Sem:-III

Course: - ME0233 : Metallurgy

Course Outcomes:
CO1 Understand basic concept of metal structure.
CO2 Understand fundamental knowledge of Ferrous and Non Ferrous Metal.
CO3 Selection of Metals and Alloys for different application.
CO4 Understand need of Heat treatment and various heat treatment processes.
CO5 Understand of Mechanical Testing and Powder Metallurgy
CO6 Understand of Advance Materials

BHARATI VIDYAPEETH'S

COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING
Class: - Second Year B. Tech. Sem:- III
ME0234 : Applied Thermodynamics Lab

Course Outcomes:

CO1 Understand working of boiler, mountings and accessories, boiler efficiency and condensers
CO2 Explain and evaluate steam generation, turbine and its compounding.
CO3 Understanding Fuel Properties
CO4 Determine properties of lubricant.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:- Second Year B. Tech. Sem:- III

ME0235 : Thermodynamics (Multi-Disciplinary Minor-01)

Course Outcomes:

CO1 Remember the fundamental laws of thermodynamics

CO2 Understand and Solve the introductory problems on Rankine cycle.

CO3 Classify steam generators and condensers.

CO4 Explain the fundamental concepts, classifications, and working principles of boilers

CO5 Design the steam nozzle.

CO6 Understand and Solve problems on Steam turbines.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:- S.Y.. B. Tech. Sem:- III

Course: - ME0236 : Marketing Management ( Open Elective -01)

Course Outcomes: At the end of this course, student will be able to

CO1 Understand the fundamental concepts of marketing and its role in business.

CO2 Analyze consumer behavior and market segmentation techniques.

CO3 Apply marketing mix strategies effectively in various business scenarios.

CO4 Explore digital marketing trends and their impact on business.

CO5 Understand emerging trends and ethical considerations in marketing.

CO6 Analyze market trends and decision-making processes in marketing management

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:-S.Y. B. Tech. Sem:- III

Course: - ME0237 : Universal Human Values

Course Outcomes:

CO1 Describe the concept of value education and its significance in shaping personal and professional life.

CO2 Analyze the relationship between fundamental human aspirations such as happiness and prosperity and their influence on personal development.

CO3 Evaluate practices that promote harmony between the self and the body for holistic well-being.

CO4 Demonstrate ethical values and effective communication in interpersonal and professional relationships.

CO5 Assess the interconnection between individuals, society, universal order, and nature to promote sustainable living.

CO6 Develop ethical decision-making frameworks for a smooth transition from academic to professional life.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class: - Second Year B. Tech. Sem:- III

Course: - ME0238:Machine Drawing & Computer Aided Drafting Lab

Course Outcomes:

Upon successful completion of this course, the student will be able to:

CO1 Use BIS conventions in part drawings and assembly machine drawing

CO2 Understand & Draw function of permanent & temporary joints and various machine components

CO3 Interpret given production drawings having surface roughness and tolerances

CO4 Draw assembly drawing from given detail drawing and vice versa with tolerances and fits

CO5 Understand & can draw the simple machine parts by using software.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:-Second Year B TECH Sem:- III

Course: -ME0239 : Economics for Engineers

Course Outcomes:

Upon successful completion of this course, the student will be able to:

CO1 Explain the role of information systems in business management and decision-making processes.

CO2 Illustrate key economic concepts such as demand, supply, scarcity, and opportunity cost with real-life examples.

CO3 Differentiate between microeconomic and macroeconomic principles and analyze their impact on business and society.

CO4 Evaluate the influence of market structures, industrial policies, and competition on industrial growth and performance.

CO5 Construct and interpret cash flow statements to assess financial health and business performance.

CO6 Develop effective personal financial management strategies, including budgeting, saving, and investment planning.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICA ENGINEERING

Class:- Second Year B. Tech. Sem:-III

Course: - ME02310 : Marketing Management (Practical Open Elective -01)

Course Outcomes:

CO1 Analyze various market segmentation strategies and identify the most effective targeting approaches for different consumer groups

CO2 Evaluate the stages of the product life cycle and develop strategic recommendations for optimizing marketing efforts at each stage

CO3 Conduct a SWOT analysis to assess a brand's strengths, weaknesses, opportunities, and threats, leading to informed marketing decisions.

CO4 Design and implement a marketing survey, analyze the collected data, and derive actionable insights for decision-making.

CO5 Develop a comprehensive marketing mix strategy incorporating product, price, place, and promotion for a new product launch.

CO6 Design and evaluate a digital marketing campaign utilizing online channels to enhance brand awareness and customer engagement.

BHARATI VIDYAPEETH'S

COLLEGE OF ENGINEERING, KOLHAPUR

# Coure Outcome

Name of Department: - MECHANICAL ENGINEERING

Class: - Second Year B. Tech. Sem:- IV

Course: - ME0241: Analysis of Mechanical Elements

Course Outcomes:

Upon successful completion of this course, the student will be able to:

1. CO1 Apply concepts of analysis of mechanical elements to obtain solution to various types of loading
2. CO2 Compute plane stress, principal stress .maximum shear stress and their orientations using Analytical method and Mohr's circle.
3. CO3 Draw shear force and bending moment diagrams for simple beams subjected to various loads and support conditions
4. CO4 Compute and analyze bending and shear stresses in mechanical components
5. CO5 Analyze the effect of deflection in beams
6. CO6 Analyze shafts for torsion & evaluate buckling in beams subject to various types of loading.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:-Second Year BTECH Sem:- IV

Course: -ME0242: Kinematics and Theory of Machines

Course Outcomes:
Upon successful completion of this course, the student will be able to:

CO1 Identify the nature of kinematic pair, chains and Mechanism.

CO2 Analyze kinematic theories of mechanism.

CO3 Design cam with follower for different applications

CO4 Identify the various types of gears.

CO5 Select a gear drive for practical purpose.

CO6 Understand the importance of balancing and implications of computed results in dynamics

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:- S.Y.. B. Tech. Sem:- IV

Course: ME0243: Machine Tools and Processes

Course Outcomes: At the end of this course, student will be able to

1. CO1 Identify various kinds of manufacturing processes.
2. CO2 Describe construction and working of basic machine tools.
3. CO3 Demonstrate their understanding of plastic processing, injection moulding, extrusion and thermoforming.
4. CO4 Analyze the concept, mechanism of material removal with respect different processes
5. CO5 In position to appreciate the merits of non-traditional machining and its applications in industries.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAENGINEERING

Class:- Second Year B. Tech. Sem:-IV

Course: - MD0244 : Theory of Machines (Multi-Disciplinary Minor-02)

Course Outcomes:

CO1 Understand the basic principles of mechanisms and the classification of different types of machines

CO2 Analyze the kinematics of planar mechanisms including displacement, velocity, and acceleration analysis.

CO3 Apply the principles of force analysis to determine forces in machines using graphical and analytical methods

CO4 Understand the dynamics of machines and the impact of vibrations on the performance of machines

CO5 Study and analyze cam profiles, gears, and gear trains in different mechanical systems.

CO6 Design and analyze basic mechanical linkages and systems using principles of mechanism and motion analysis

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING
Class: - Second Year B. Tech. Sem:- IV
Course: - ME0245 : Soft Skill Development (Open Elective-02)

Course Outcomes:
Name of Department: - MECHANICAL ENGINEERING

Class:- Second Year B. Tech. Sem:- IV

Course: - ME3407 : Strategic Management

Course Outcomes:

CO1

Apply strategic analysis tools such as SWOT, PESTEL, and Porter's Five Forces to assess business scenarios.

CO2

Analyze the external environment of a firm to identify opportunities and threats that influence strategic decisions.

CO3

Assess a firm's internal resources and capabilities to determine its competitive advantage.

CO4

Develop cost leadership strategies to enhance operational efficiency and maintain competitive pricing.

CO5

Design strategies for product differentiation to create unique market offerings and customer value.

CO6

Evaluate the advantages and risks of vertical integration and corporate diversification for business growth and sustainability.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:- S.Y. B. Tech. Sem:- III

Course: - ME0247 : Professional Ethics

Course Outcomes: At the end of this course, student will be able to

CO1

Explain the principles of individual and professional ethics and their relevance in personal and professional life.

CO2

Analyze ethical dilemmas in business scenarios and propose solutions that uphold ethical standards.

CO3

Demonstrate ethical behavior in workplace interactions and decision-making processes.

CO4

Valuate various psychological approaches to enhance time-management and develop effective goal-setting strategies.

CO5

Identify workplace safety standards and assess the responsibilities and rights of employees and employers.

CO6

Assess the ethical responsibilities towards ecological sustainability and formulate strategies for environmentally responsible practices.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:-S.Y. B. Tech. Sem:- IV

Course: - ME0248 : Humanity Science

Course Outcomes:

At the end of this course, student will be able to

CO1

Explain the concept of value education and its significance in personal and professional life.

CO2

Analyze the relationship between fundamental human aspirations and the pursuit of happiness and prosperity.

CO3

Evaluate methods to achieve harmony between self and body for holistic well-being.

CO4

Demonstrate ethical values and principles in interpersonal relationships and social interactions.

CO5

Assess the role of individuals in maintaining harmony with society, the universal order, and nature.

CO6

Formulate strategies for ethical decision-making and responsible professional conduct during the transition from student to professional life.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAENGINEERING

Class:- Second Year B. Tech. Sem:- IV

Course: - ME0249 : Kinematics and Theory of Machines Lab

Course Outcomes:

CO1 Understand and verify the relationship between the angular velocities of shafts connected by a Hooke's joint.

CO2 Understand the use of various measuring devices in dynamic testing.

CO3 Develop problem-solving skills to identify unbalanced conditions and propose efficient solutions for minimizing their effects.

CO4 Develop proficiency in using computer-aided design (CAD) and simulation software for force analysis in mechanical systems.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAENGINEERING

Class:- Second Year B. Tech. Sem:- IV

Course: - ME02410:Testing and Measurement Lab.

Course Outcomes:

CO1 Understand basic construction and working of angular Speed, force/load and temperature measuring instruments.

CO2 Understand basic construction and working of flow, Vibrations, linear displacement measuring instruments.

CO3 Understand testing and calibration of pressure gauge.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:- Second Year B. Tech. Sem:- IV

Course: - ME02411 : Environmental Science (Common to all Branches of Engineering)

Course Outcomes: After completion of course students are able to :

CO1

Understand the importance of Environmental Studies and recognize significance of ecosystem.

CO2

Classify the values of natural resources with associated problems for sustainable lifestyles.

CO3

Describe the social and global environmental issues

CO4

Make aware of Pollution issues with its mitigation measures.

CO5

Familiarize the basics of Biodiversity and concerned issues in the context of Western Ghats.

CO6

Define the role of environmental laws and regulations in conservation efforts.

# BHARATI VIDYAPEETH'S

# COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: - MECHANICAL ENGINEERING

Class:- S.Y. B. Tech. Sem:- IV

Course: - ME02412 : Mechanical Workshop

Course Outcomes:

CO1 Demonstrate proficiency in basic lathe operations
CO2 Demonstrate the ability to perform milling machine operations
CO3 Analyze and report industrial machining processes