Department Of Mechanical Engineering
SEMESTER-III

NAME OF COURSE:		Applied Thermodynamics	
COURSE CODE:	ME211	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr. S R Patil

Course Outcomes:

ME211.1	Apply knowledge of mathematics and science to solve real thermodynamics problems.
ME211.2	Evaluate performance of mechanical devices like boiler, compressor, steam turbine, etc.
ME211.3	Apply knowledge of basic thermodynamic concepts for analysis of vapour power Cycles.
ME211.4	Apply knowledge of thermodynamics concepts for analysis of flow of steam nozzles and steam condensers.

Department Of Mechanical Engineering

NAME OF COURSE:		MECHANICS OF MATERIALS	
COURSE CODE:	ME212	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. Y B Shete

Course Outcomes:

ME211.1	Determine the stresses, strains and deformation under various axial, torsional and flexural loading.
ME211.2	Determine strain energy in axially loaded members.
ME212.3	Calculate principal stresses & position planes in a member subjected to various types of stress system by analytical & graphical method.
ME212.4	Determine torsional shear stress, angle of twist & design dimensions of shaft.
ME212.5	Draw S.F.D, B.M.D and determine shear & bending stresses, slope and deflection in various types of beams & sections.
ME212.6	Analyze simple bars, beams, and circular shafts for allowable stresses and load

Department Of Mechanical Engineering

NAME OF COURSE:		Manufacturing Process	
COURSE CODE:	ME213	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S S Pathak

Course Outcomes:

ME213.1	Select appropriate manufacturing process for a given component
ME213.2	Understand performance of each process.
ME213.3	Prepare manufacturing plan for the given component

Department Of Mechanical Engineering

NAME OF COURSE:		MACHINE DRAWING AND CAD	
COURSE CODE:	ME214	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A A Shaikh

Course Outcomes:

ME214.1	Able to create drawings as per BIS standards.
ME214..2	Able to apply technique for assembly drawing from the detail/components.
ME214..3	Able to incorporate limits, fits and tolerances for components on the working/engineering drawings.
ME214..4	Familiar in using drafting software

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective I	
COURSE CODE:	ME215	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr. S R Patil

Course Outcomes:

ME215.1	Program microprocessors in assembly and C/C++ or python
ME215..2	Program and operate Raspberry Pi microprocessor boards.
ME215..3	Program PLCs using ladder logic (both on simulators and actual hardware).

Department Of Mechanical Engineering
SEMESTER-IV

NAME OF COURSE:		Engineering Mathematics-III	
COURSE CODE:	ME221	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	AAP

Course Outcomes:

ME221.1	Student can solve partial differential equation of first order.
ME221.2	Student can express a function in terms of sine and cosine components so as to model simple periodic functions.
ME221.3	Student can use numerical methods for evaluating definite integrals.
ME221.4	Student can use numerical methods for solving linear and non-linear equations.
ME221.5	Student can sketch and explain various probability distribution functions.

Department Of Mechanical Engineering

NAME OF COURSE:		Engineering Manufacturing Technology	
COURSE CODE:	ME222	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. M A Kazi

Course Outcomes:

ME222.1	Exhibit knowledge of conventional, unconventional & modern machining processes and machine tools.
ME222.2	Select proper manufacturing process for the typical application.

Department Of Mechanical Engineering

NAME OF COURSE:		FLUID MECHANICS & FLUID MACHINES	
COURSE CODE:	ME223	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S H Lamkane

Course Outcomes:

ME223.1	Solve issues related to fluid statics & kinematics.
ME223.2	Apply Bernouilli's theorem in real world situations.
ME223.3	Perform dimensional analysis for research problems in fluid mechanics.
ME223.4	Solve problems related to drag, lift , drag & lift
ME223.5	Select / design Pelton, Francis & Kaplan turbines.
ME223.6	Select/design centrifugal pump.

Department Of Mechanical Engineering

NAME OF COURSE:		KINEMATICS &THEORY OF MACHINES	
COURSE CODE:	ME224	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S T Jagtap

Course Outcomes:

ME224.1	Select proper type of mechanism for different applications.
ME224.2	Determine velocity & acceleration of different components in mechanism.
ME224.3	Select proper type of cam & follower for any application & draw cam profile.
ME224.4	Select proper type of brakes for various applications.
ME224.5	Select gear & design gear trains for any application.
ME224.6	Analyze the effect of gyroscopic couple of any vehicle.
ME224.7	Design governor for different use.
ME224.8	Do balancing of rotary & reciprocating masses.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective -II	
COURSE CODE:	ME225	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. Y B Shete

Course Outcomes:

ME225.1	Explain mechatronic terminology.
ME225.2	Explain types and applications of sensors and actuators in mechatronic systems.
ME225.3	Explain latest trends in industrial mechatronics such as IOT, industry 4.0.
ME225.4	Program PLCs using ladder logic (both on simulators and actual hardware).
ME225.5	Build and program a mechatronic system which will accept data from input and sensors and control an output/actuator using any microprocessor/ microcontroller board (Arduino or Raspberry Pi can also be used).

Department Of Mechanical Engineering

NAME OF COURSE:		MECHANICAL WORKSHOP-I	
COURSE CODE:	ME226	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S A Gurav

Course Outcomes:

ME226.1	To operate different machine tools such as grinders, lathes, drilling machines etc.
ME226.2	To machine the component as per specified dimensions.
ME226.3	To develop the skills necessary for engineering practices like joining and forming processes.
ME226.4	To Choose and apply the appropriate methods for pattern making & sheet metal working.

Department Of Mechanical Engineering

NAME OF COURSE:		ELECTRICAL TECHNOLOGY	
COURSE CODE:	ME227	ACADEMIC YEAR :	2023-24
CLASS :	S.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME227.1	Identify and select suitable DC motor / induction motor / special purpose motor and its speed control method for given industrial application.
ME227.2	Program Arduino IDE using conditional statements.
ME227.3	Interfacing sensors with Arduino IDE.

Department Of Mechanical Engineering
SEMESTER-V

NAME OF COURSE:		MACHINE DESIGN-I	
COURSE CODE:	ME311	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. Y B Shete

Course Outcomes:

ME311.1	Design machine elements such as springs, shafts, joints, lever etc.
ME311.2	Design mechanical component subjected to fluctuating loads.
ME311.3	Implement standardization in design of machine elements.

Department Of Mechanical Engineering

NAME OF COURSE:		CAD-CAM & CAE	
COURSE CODE:	ME312	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A A Shaikh

Course Outcomes:

ME312.1	Apply CAD fundamentals as well as advanced manufacturing technology to industry problems.
ME312.2	Analyze application of geometric modeling and FEA to industrial products.
ME312.3	Write CNC part program Handle CAM related problems from industry and develop CNC part program.

Department Of Mechanical Engineering

NAME OF COURSE:		METALLURGY	
COURSE CODE:	ME313	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr. S R Patil

Course Outcomes:

ME313.1	Select of ferrous alloys and demonstrate the significance of heat treatment processes for engineering applications.
ME313.2	Establish the characteristics of nonferrous alloys and Composite materials.
ME313.3	Select suitable testing method & implication of Powder metallurgy for manufacturing of products.

Department Of Mechanical Engineering

NAME OF COURSE:		INDUSTRIAL ENGINEERING AND OPERATION RESEARCH	
COURSE CODE:	ME314	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. R R Honkalas

Course Outcomes:

ME314.1	Analyze & measure productivity.
ME314.2	Perform method study and work measurement etc.
ME314.3	Describe optimization process and OR models.
ME314.4	Apply and develop various optimization techniques and prepare project plan to industrial applications.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective –III	
COURSE CODE:	ME315	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. K S Mangrulkar

Course Outcomes:

ME315.1	Calculate cutting forces & economics of operations.
ME315.2	Design & draw the tools & tooling for the given situation & operation.
ME315.3	Develop solutions, devices, contrivances to overcome present problems of the real world.

Department Of Mechanical Engineering

NAME OF COURSE:		ADVANCED PROGRAMMING CONCEPTS	
COURSE CODE:	ME316	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S A Gurav

Course Outcomes:

ME316.1	Use Python standard library modules in writing Python scripts for problem solving.
ME316.2	Write Python scripts in procedural and object-oriented style.
ME316.3	Write Python scripts to perform database, network and web related operations.
ME316.4	Debug and profile Python scripts.

Department Of Mechanical Engineering

NAME OF COURSE:		MECHANICAL WORKSHOP – III	
COURSE CODE:	ME317	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S M Chavan

Course Outcomes:

ME317.1	To grind the tools.
ME317.2	To operate different machine tools such as grinders, lathes, milling, drilling machines etc.
ME317.3	To machine the component as per specified dimensions.

Department Of Mechanical Engineering
SEMESTER-VI

NAME OF COURSE:		MACHINE DESIGN-II	
COURSE CODE:	ME321	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S T Jagtap

Course Outcomes:

ME321.1	Design gears and pressure vessels.
ME321.2	Calculate the load acting on shaft to select bearing from Manufacturer's catalogue.
ME321.3	Use standards in design of machine elements.

Department Of Mechanical Engineering

NAME OF COURSE:		INSTRUMENTATION & CONTROL	
COURSE CODE:	ME322	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. R R Honkalas

Course Outcomes:

ME322.1	Describe construction, functioning and application of various measuring instruments.
ME322.2	Design control systems and draw block diagrams.
ME322.3	Analyze root locus diagram, Bode plot and discuss stability of mechanical system.

Department Of Mechanical Engineering

NAME OF COURSE:		HEAT TRANSFER	
COURSE CODE:	ME323	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr. R. T. Vyavahare

Course Outcomes:

ME323.1	Compare and distinguish the Modes of heat transfer & apply the laws of conduction to the analysis of heat transfer in steady & unsteady state as well as for extended surfaces.
ME323.2	Apply the different laws to the radiation phenomenon.
ME323.3	Analyze Heat transfer in case of natural & forced convection, Boiling & condensation as well as in the heat exchangers

Department Of Mechanical Engineering

NAME OF COURSE:		INDUSTRIAL AND QUALITY MANAGEMENT	
COURSE CODE:	ME324	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S T Jagtap

Course Outcomes:

ME32.1	Demonstrate various management functions.
ME32.2	Predict various quality control/statistical tools for industrial / organizational problems.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective –IV	
COURSE CODE:	ME325	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. K S Mangrulkar

Course Outcomes:

ME325.1	Apply product design process to industrial and consumer products
ME325.2	Use aesthetic and ergonomic concepts in the product design.
ME325.3	Implement critical and creative thinking in the design of products.

Department Of Mechanical Engineering

NAME OF COURSE:		MINI PROJECT	
COURSE CODE:	ME326	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr. R. T. Vyavahare

Course Outcomes:

ME32.1	Identify and analyze the potential technical problems.
ME32.2	Develop solution for a set of requirements for the problem identified.
ME32.3	Write a report with all the contents in logical order.

Department Of Mechanical Engineering

NAME OF COURSE:		METROLOGY	
COURSE CODE:	ME327	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr. S R Patil

Course Outcomes:

ME327.1	Measure the elements and assemblies using analog /digital measuring instruments &Check geometrical accuracy of given application.
ME327.2	Explain surface roughness checking instruments and derive important dimensions of various thread forms and gears.
ME327.3	Check the dimensions using the gauges and measure variables using appropriate sensors and transducers.

Department Of Mechanical Engineering

NAME OF COURSE:		MECHANICAL WORKSHOP – III	
COURSE CODE:	ME328	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S T Jagtap

Course Outcomes:

ME32.1	Operate various machine tools.
ME32.2	Selection operational and process parameters during machining operations.
ME32.3	Manufacture a small assembly of components

Department Of Mechanical Engineering
SEMESTER-VII

NAME OF COURSE:		Automatic Control Engineering	
COURSE CODE:	ME411	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. R R Honkalas

Course Outcomes:

ME411.1	Formulate mathematical model for different types of control systems.
ME411.2	Compose the systems with the help of block diagram reduction rules to obtain closed loop transfer function
ME411.3	Examine the modes of control in accordance with output of control system.
ME411.4	Analyze transient response of the systems, steady state condition and characteristics of a system when it is in equilibrium state.
ME411.5	Analyze root locus diagram
ME411.6	Evaluate state space techniques for representing control systems.

Department Of Mechanical Engineering

NAME OF COURSE:		Refrigeration and Air Conditioning	
COURSE CODE:	ME412	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. Y B Shete

Course Outcomes:

ME412.1	Explain Basic Refrigeration Processes
ME412.2	Analyze and Calculate Performance of Refrigeration Systems
ME412.3	Select proper Refrigerant for specific application
ME412.4	Define and Calculate Psychometric properties of air using chart and tables.
ME412.5	Decide and Analyze Psychometric process for obtaining required air conditions
ME412.6	Explain Comfort chart and factors affecting human comfort.
ME412.7	Design Air distribution System

Department Of Mechanical Engineering

NAME OF COURSE:		OPERATIONS RESEARCH	
COURSE CODE:	ME413	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	

Course Outcomes:

ME413.1	Knowledge of basic optimization process and OR models.
ME413.2	Apply various optimization techniques to industrial applications.
ME41.3	Develop a project plan for the industry or organization.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective-V Finite Element Method (FEM)	
COURSE CODE:	ME414(A)	ACADEMIC YEAR :	2023-24
CLASS :	T.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S S Pathak

Course Outcomes:

ME414(A).1	Implement general procedure of FEA for structural and thermal problems.
ME414(A).2	Formulate stiffness matrices for simple 1D, 2D and 3D elements.
ME414(A).3	Solve 1D, 2D and 3D problems using FEA techniques.
ME414(A).4	Solve boundary value problems using variational calculus and weighted residuals methods.
ME414(A).5	Analyze of 1D, 2D and 3D problems using commercial or open source FEA software.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective-V Production and Operational Management	
COURSE CODE:	ME414(B)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S S Pathak

Course Outcomes:

ME414(B).1	Explain importance, scope and need of production and operation management.
ME414(B).2	Evaluate the future demands using different forecasting methods
ME414(B).3	Apply the concept of capacity planning and aggregate planning to various types of manufacturing systems.
ME414(B).4	Explain the importance of production planning and control, and inventory management in production process and its elements.
ME414(B).5	Apply the concept of plant maintenance.
ME414(B).6	Analyze/Determine the applications of various advanced techniques such as value engineering, Six Sigma, Kanban, computer aided production management, etc.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective-V Automobile Engineering	
COURSE CODE:	ME414(C)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S S Pathak

Course Outcomes:

ME414(B).1	Demonstrate & explain various systems in an automobile
ME414(B).2	Describe importance and features of different elements like axle, differential, brakes, steering,suspension, wheel balancing etc.
ME414(B).3	Explain principle of operation, construction and applications of various sensors used in modern automobile and understand electric vehicles, hybrid electric vehicles and solar.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective-V COSTING & COST CONTROL	
COURSE CODE:	ME414 (D)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S S Pathak

Course Outcomes:

ME414(D).1	Explain importance, scope and need of cost and cost control.
ME414(D).2	Evaluate the future demands using different cost control methods
ME414(D).3	Apply the concept of cost and cost control to various types of manufacturing systems.
ME414(D).4	Explain the importance of cost and cost control in the production process and its elements.
ME414(D).5	Apply the concept of cost control.
ME414(D).6	Analyze/Determine the applications of various advanced techniques such as value engineering.

Department Of Mechanical Engineering

NAME OF COURSE:		Free Elective –I Industrial Robotics (IR)	
COURSE CODE:	ME415 (A)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME415(A).1	Solve simple kinematics and dynamics problems on robot motion.
ME415(A).2	Select appropriate robot specifications for industrial applications.
ME415(A).3	Use Matlab (or equivalent) toolboxes to demonstrate machine vision concepts.
ME415(A).4	Use any robot simulation software to simulate a robot and its work cell.

Department Of Mechanical Engineering

NAME OF COURSE:		Free Elective –I Sugar Technology	
COURSE CODE:	ME415 (B)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME415(B).1	Understand the nomenclature used in Sugar Engineering
ME415(B).2	Demonstrate the knowledge of various mechanical equipments/machinery and chemical processing of Sugar Industry.
ME415(B).3	Understand mechanical engineering concepts related to Sugar industry .

Department Of Mechanical Engineering

NAME OF COURSE:		Free Elective –I Entrepreneurship Development	
COURSE CODE:	ME415 (C)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME415(C).1	Identify the qualities required to become a successful entrepreneur
ME415(C).2	Identify the business opportunities that fit the individual or the group
ME415(C).3	Explain factors influencing on entrepreneurial development
ME415(C).4	Analyze various options available for deciding entrepreneurial career
ME415(C).5	Explain various methods and sources for idea generation
ME415(C).6	Select financial institutions for establishing new enterprise
ME415(C).7	Develop a feasible project report suitable for individual or group.

Department Of Mechanical Engineering

NAME OF COURSE:		Free Elective –I Process Equipment Design	
COURSE CODE:	ME415 (D)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	

Course Outcomes:

ME414(D).1	Knowledge of basics of process equipment design and important parameters of equipment design
ME414(D).2	Considerably more in-depth knowledge of the major subject and ability to design internal pressure vessels and external pressure vessels
ME414(D).3	Ability to design special vessels and various parts of vessels (e.g. heads)
ME414(D).4	Knowledge of Piping Design and process equipment design.
ME414(D).5	Deeper knowledge of Process Control, manufacture, inspection and erection of process Equipment.
ME414(D).6	Knowledge of applications of CAD to process Equipment Design

Department Of Mechanical Engineering

NAME OF COURSE:		Free Elective –I Railway Transportation Systems	
COURSE CODE:	ME415 (E)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME414(E).1	Summaries different components of a railway transportation system
ME414(E).2	Interpreting various stresses & deflections generated in track under various loads.
ME414(E).3	Analysis of forces on track due to various loads.
ME414(E).4	Design track under various loads.
ME414(E).5	Interpretation of behavior of railway track with rolling stock
ME414(E).6	Evaluating derailment of railway vehicles.

Department Of Mechanical Engineering

NAME OF COURSE:		Project Work –I	
COURSE CODE:	ME416	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	

Course Outcomes:

ME416.1	Analyze the Project Problem with schematic diagram
ME416.2	Write mathematical model of the Project Problem

Department Of Mechanical Engineering

NAME OF COURSE:		Industrial Training	
COURSE CODE:	ME417	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S H Lamkane

Course Outcomes:

ME417.1	Understand the Industrial culture & Organizational setup.
ME417.2	Write technical report and give presentation
ME417.3	Correlate theoretical knowledge with the actual in Industry
ME417.4	Responsibility and role of engineer in Industry

Department Of Mechanical Engineering

SEMESTER-VIII

NAME OF COURSE:		Industrial Engineering	
COURSE CODE:	ME421	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S A Gurav

Course Outcomes:

ME421.1	Analyze & measure productivity
ME421.2	Perform method study and work measurement etc.
ME421.3	Develop improved method of working/process for manufacturing /service sector

Department Of Mechanical Engineering

NAME OF COURSE:		Industrial and Quality Management	
COURSE CODE:	ME422	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S T Jagtap

Course Outcomes:

ME422.1	Describe and explain various management functions.
ME422.2	Enlist general principles of management and apply them in practice
ME422.3	Describe concepts related to total quality management
ME422.4	Enumerate different statistical quality control tools and apply them for quality management.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective VI **Non-Conventional Machining**	
COURSE CODE:	**ME423(A)**	**ACADEMIC YEAR :**	**2023-24**
CLASS :	**B.E. B.Tech**	**NAME OF SUBJECT TEACHER:**	**Prof. K S Mangrulkar**

Course Outcomes:

ME423(A).1	Elaborate the different non-conventional machining process for suitable materials
ME423(A).2	Select suitable machining process for suitable materials
ME423(A).3	Summarizes the merits and demerits of the non-traditional manufacturing process

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective VI Mechatronics (MTRN)	
COURSE CODE:	ME423(B)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. K S Mangrulkar

Course Outcomes:

ME423(B).1	Recall applications of sensors and actuators in mechatronic systems
ME423(B).2	Program 8085 and 8051 in assembly language (and C/C++, Python) to demonstrate interfacing with sensors and actuators.
ME423(B).3	Program PLCs using ladder logic (both on simulators and actual hardware).
ME423(B).4	Build and program a mechatronic system which will accept data from input and sensors and control an output/actuator using any microprocessor/ microcontroller board (Arduino or Raspberry Pi can also be used)

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective VI Computational Fluid Dynamics	
COURSE CODE:	ME423(C)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. K S Mangrulkar

Course Outcomes:

ME423(C).1	Analyze and model fluid flow and heat transfer problems.
ME423(C).2	Generate high quality grids and interpret the correctness of numerical results with physics.
ME423(C).3	Use a CFD tool effectively for practical problems and research.
ME423(C).4	Conceptualize the programming skills.

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective VI Process Engineering	
COURSE CODE:	ME423(D)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. K S Mangrulkar

Course Outcomes:

ME423(D).1	Determine machine sequences to cater to the manufacturing requirements
ME423(D).2	Analyze part prints.
ME423(D).3	Prepare process picture, process routing/process sheets.
ME423(D).4	Prepare process plan for a given component for job, batch and mass production
ME423(D).5	Prepare process plan for product within optimum time and cost

Department Of Mechanical Engineering

NAME OF COURSE:		Professional Elective VI Power Plant and Energy Engineering	
COURSE CODE:	ME423(E)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. K S Mangrulkar

Course Outcomes:

ME423(E).1	get basic knowledge for effective use of available energy sources by suitable planning of power generation in thermal, hydro, gas & atomic power plant.
ME423(E).2	create awareness and knowledge for economical cost analysis of electrical energy.

Department Of Mechanical Engineering

NAME OF COURSE:		Free Elective-II Software Engineering & Cyber Security	
COURSE CODE:	ME424(A)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME424(A).1	Select a proper software life cycle model for design and development.
ME424(A).2	Prepare a prototype model
ME424(A).3	Focus on the fundamentals of developing a Software Project.
ME424(A).4	Get Software Requirement Specification from client, analyze, design and estimate the cost of development of a Software Project

Department Of Mechanical Engineering

NAME OF COURSE:		Free Elective-II Agro Machine Engineering		
COURSE CODE:	ME424(B)	ACADEMIC YEAR :	2023-24	
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh	

Course Outcomes:

ME424(B).1	Distinguish between various agro operations such as ploughing, harrowing, threshing etc.
ME424(B).2	Select and design mechanism for various agro machines

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NAME OF COURSE:		Free Elective-II Plastic Engineering	
COURSE CODE:	ME424(C)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME424(C).1	Select the plastic materials for particular end user application
ME424(C).2	Predict the structure and properties of different kind of plastic material
ME424(C).3	Know the processing of different plastic material based on the end user requirement.
ME424(C).4	Part design as well mould design for different moulding processes.

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NAME OF COURSE:		Free Elective-II Economics for Engineers	
COURSE CODE:	ME424(D)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME424(D).1	Analyze factors affecting demand and supply.
ME424(D).2	Determine various costs and total cost, apply break even analysis.
ME424(D).3	Calculate worth using different techniques in time value of money
ME424(D).4	Take correct decisions regarding make or buy, process or design modifications based on
ME424(D).5	Carry out better maintenance; take appropriate decisions regarding replacement of assets.
ME424(D).6	Prepare project appraisals and apply value analysis & value engineering procedure.

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NAME OF COURSE:		Free Elective-II Project Management	
COURSE CODE:	ME424(E)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME424(E).1	Describe a project life cycle, and can skillfully map each stage in the cycle
ME424(E).2	Identify the resources needed for project selection and planning
ME424(E).3	Analyze the risk in project management
ME424(E).4	Evaluate the project execution and performance
ME424(E).5	Explain the use of project management software

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NAME OF COURSE:		Free Elective-II Marketing Management	
COURSE CODE:	ME424(F)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME424(F).1	To familiarize with marketing, and its concepts
ME424(F).2	To acquaint with new marketing trends and the marketing environment.
ME424(F).3	To study the components of the marketing mix; identify how the firms marketing strategy, marketing mix evolve and adapt to match consumer behavior and perceptions of the product.

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NAME OF COURSE:		Free Elective-II Railway Transportation Management	
COURSE CODE:	ME424(G)	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. A K Shaikh

Course Outcomes:

ME424(G).1	Explain organizational and management aspects of the railways
ME424(G).2	Select the proper rolling stock
ME424(G).3	Explain the organization and management of freight railway transport
ME424(G).4	Recognize effect of railways on environment and mitigation measures are required
ME424(G).5	Implement safety regulations in railway systems & select preventive measures required to reduce accidents.
ME424(G).6	Explain greenhouse gases emitted by the means of transport.

Department Of Mechanical Engineering

NAME OF COURSE:		Project Work -II	
COURSE CODE:	ME425	ACADEMIC YEAR :	2023-24
CLASS :	B.E. B.Tech	NAME OF SUBJECT TEACHER:	Prof. S A Gurav

Course Outcomes:

ME425.1	Present the work in the Journal/conference/workshop
ME425.2	Apply for patent/IPR