

First Year Sem I

Name of staff: Dr Haloli H G

Name of Subject: Engineering Mathematics I

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Mean value theorems and its generalizations leading Taylors Maclaurins series	3	application and analysis
2	Fourier series representation and Harmonic analysis for design and analysis of periodic continuous and discrete system	3	analysis and application
3	To deal with derivatives of the function of several variables that are essential in various branches of Engineering	3	analysis and application
4	To apply concept of Jacobian to find partial derivative of implicit functions and functional dependence	3	analysis and application
5	Essential tool of matrices and linear algebra in a comprehensive manner for analysis of system of linear equation, orthogonal transformation,	3	analysis and application

Name of staff: KAPURE S. B.

Name of Subject: Engineering Chemistry

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Apply the different methodologies for analysis of water and techniques involved in softening of water as commodity.	3	ANALYSE
2	Select appropriate electro-technique and method of material analysis.	3	ANALYSE
3	Demonstrate the knowledge of advanced engineering materials for various engineering applications	3	ANALYSE
4	Analyze fuel and suggest use of alternative fuels.	3	ANALYSE
5	Identify chemical compounds based on their structure	3	ANALYSE
6	Explain causes of corrosion and methods for minimizing corrosion.	3	ANALYSE

Name of staff: DESHMUKH G. N.

Name of Subject: Basic Electrical Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Differentiate between electrical and magnetic circuits and derive mathematical relation for self and mutual inductance along with coupling	3	ANALYSE
2	Calculate series, parallel and composite capacitor as well as characteristics parameters of alternating quantity and phasor arithmetic	3	ANALYSE
3	Derive expression for impedance, current, power in series and parallel RLC circuit with AC supply along with phasor diagram.	3	ANALYSE
4	Relate phase and line electrical quantities in polyphase networks, demonstrate the operation of single phase transformer and calculate	3	ANALYSE
5	Apply and analyze the resistive circuits using star-delta conversion KVL, KCL and different network theorems under DC supply.	3	ANALYSE
6	Evaluate work, power, energy relations and suggest various batteries for different applications, concept of charging and discharging and depth of	3	ANALYSE

Name of staff: Mr. B. R. Warvate

Name of Subject: Engineering Mechanics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Determine resultant of various force systems	3	ANALYSE
2	Determine centroid, moment of inertia and solve problems related to friction	3	ANALYSE
3	Determine reactions of beams, calculate forces in cables using principles of equilibrium	3	ANALYSE
4	Solve trusses, frames for finding member forces and apply principles of equilibrium to forces in space.	3	ANALYSE
5	Calculate position, velocity and acceleration of particle using principles of kinematics	3	ANALYSE
6	Calculate position, velocity and acceleration of particle using principles of kinetics and Work, Power, Energy.	3	ANALYSE

Name of staff: Mr. D.D. Kumbhkarna

Name of Subject: SME

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Describe and compare the conversion of energy from renewable and non-renewable energy sources	3	ANALYSE
2	Explain basic laws of thermodynamics, heat transfer and their applications	3	ANALYSE
3	List down the types of road vehicles and their specifications	3	ANALYSE
4	Illustrate various basic parts and transmission system of a road vehicle	3	ANALYSE
5	Discuss several manufacturing processes and identify the suitable process	3	ANALYSE
6	Explain various types of mechanism and its application	3	ANALYSE & APPLICATION

First Year Sem II

Name of staff: Dr Haloli H G

Name of Subject: Engineering Mathematics II

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Effective mathematical tools for solutions of First order differential equation that model physical processes such as Newts law of cooling	3	Analyse and application
2	Advance integration techniques like Reduction formulae beta functions Gamma functions DUIS rule, multiple integral and their applications	3	Analyse and application
3	Trace the curves for given equation and measure arc length of various curves	3	Analyse and application
4	Concept of solid Geometry using equation of sphere, cone, and cylinder in a comprehensive manner.	3	Analyse and application
5	Evaluation of multiple integrals and its application to find area bounded by curves volume bounded by surfaces Centre of gravity and Moment of	3	Analyse and application

Name of staff: DESHMUKH G. N.

Name of Subject: Engineering Physics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Develop understanding of interference, diffraction and polarization; connect it to few engineering applications.	3	ANALYSE
2	Learn basics of lasers and optical fibers and their use in some applications.	3	ANALYSE
3	Understand concepts and principles in quantum mechanics. Relate them to some applications.	3	ANALYSE
4	Understand theory of semiconductors and their applications in some semiconductor devices.	3	ANALYSE
5	Summarize basics of magnetism and superconductivity. Explore few of their technological applications.	3	ANALYSE
6	Comprehend use of concepts of physics for Non Destructive Testing. Learn some properties of nanomaterials and their application.	3	ANALYSE

Name of staff: Prof. D. D. Kulkarni

Name of Subject: Basic Electronics Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Explain the working of P-N junction diode and its circuits.	1	Knowledge
2	Identify types of diodes and plot their characteristics and also can compare BJT with MOSFET.	1	Knowledge
3	Build and test analog circuits using OPAMP and digital circuits using universal/basic gates and flip	3	Apply
4	Use different electronics measuring instruments to measure various electrical parameters.	2	Understand
5	Select sensors for specific applications.	3	Apply
6	Describe basics of communication system.	1	Knowledge

Name of staff: Mrs. Trupti G. Thite

Name of Subject: Programming and Problem Solving

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand problem solving, problem solving aspects, programming and to know about various program design tools also learn basics, features	1,2,3	Remember, Understand, Apply
2	Acquaint with data types, input output statements, decision making, looping in Python	1,2,3	Remember, Understand, Apply
3	Acquaint with the Use of functions and Modules in Python	1,2,3	Remember, Understand, Apply
4	Demonstrate significant experience with the Python program development environment using strings	1,2,3	Remember, Understand, Apply
5	Learn features of Object Oriented Programming using Python	1,2,3	Remember, Understand, Apply
6	Acquaint with the use and benefits of files handling in Python	1,2,3	Remember, Understand, Apply

Civil: Second Year Sem : I

Name of staff: Juee Swapnil Athalye

Name of Subject: Mechanics of Structure

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand concept of stress-strain and determine different types of stress, strain in determinate, indeterminate homogeneous and composite	2	Understanding
2	Calculate shear force and bending moment in determinate beams for different loading conditions and illustrate shear force and bending	3	Applying
3	Explain the concept of shear and bending stresses in beams and demonstrate shear and bending stress distribution diagram.	1	Knowledge
4	Use theory of torsion to determine the stresses in circular shaft and understand concept of Principal stresses and strains.	3	Applying
5	Analyze axially loaded and eccentrically loaded column.	4	Analyzing
6	Determine the slopes and deflection of determinate beams and trusses.	5	Evaluate

Name of staff: Gauri L. Patil

Name of Subject: Building technology & Architectural Planning (BTAP)

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Identify types of building and basic requirements of building components	2	Understanding
2	Make use of Architectural Principles and Building byelaws for building construction	3	Applying
3	Plan effectively various types of Residential Building forms according to their utility, functions with reference to National Building Code	6	Creating
4	Plan effectively various types of Public Buildings according to their utility functions with reference to National Building Code	6	Creating
5	Make use of Principles of Planning in Town Planning, Different Villages and Safety aspects	3	Applying
6	Understand different services and safety aspects	2	Understanding

Name of staff: Vaibhav Augad

Name of Subject: Engineering Geology

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Explain about the basic concepts of engineering geology, various rocks, and minerals both in lab and on the fields and their inherent	2	Understanding
2	Exploring the importance of mass wasting processes and various tectonic processes that hampers the design of civil engineering projects	3	Applying
3	Recognize effect of plate tectonics, structural geology and their significance and utility in civil engineering activities.	2	Understanding
4	Incorporate the various methods of survey, to evaluate and interpret geological nature of the rocks present at the foundations of the dams,	2	Understanding
5	Assess the Importance of geological nature of the site, precautions and treatments to prove the site conditions for dams, reservoirs, and tunnels..	2	Understanding
6	Explain geological hazards and importance of ground water and uses of common building	3	Applying

Name of staff: Dr.S. S. Deshmukh

Name of Subject: Fluid Mechanics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand the use of Fluid Properties, concept of Fluid statics, basic equation of	2	Understanding
2	Understand the concept of fluid kinematics with reference to Continuity equation and fluid dynamics with reference to Modified Bernoulli's	2	Understanding
3	Understand the concept of Dimensional analysis using Buckingham's π theorem, Similarity & Model Laws and boundary layer theory and apply	2	Understanding
4	Understand the concept of laminar and turbulent flow and flow through pipes and its application to determine major and minor losses and	2	Understanding
5	Understand the concept of open channel flow, uniform flow and depth-Energy relationships in open channel flow and make the use of Chezy's	2	Understanding
6	Understand the concept of gradually varied flow in open channel and fluid flow around submerged objects, compute GVF profile and	2	Understanding

Name of staff: Mr.D. G. Matala

Name of Subject: Engineering Mathematics III

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Solve Higher order linear differential equations and its applications to modelling and analysing Civil engineering problems such as bending of	3	Applying
2	Solve System of linear equations using direct & iterative numerical techniques and develop solutions for ordinary differential equations	3	Applying
3	Apply Statistical methods like correlation, regression and probability theory in data analysis and predictions in civil engineering.	3	Applying
4	and apply to fluid flow problems.	4	Analyzing
5	Solve Partial differential equations such as wave equation, one and two dimensional heat flow equations	3	Applying

Civil: Second Year Sem : II

Name of staff: Gauri L. Patil

Name of Subject: Survey

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Define and Explain basics of plane surveying and differentiate the instruments used for it.	2	Understanding
2	Express proficiency in handling surveying equipment and analyse the surveying data from these equipment.	3 4	Applying Analyzing
3	Describe different methods of surveying and find relative positions of points on the surface of earth.	3 2	Applying Understanding
4	Execute curve setting for civil engineering projects such as roads, railways etc.	3 4	Applying Analyzing
5	Articulate advancements in surveying such as space based positioning systems	2	Understanding
6	Differentiate map and aerial photographs, also interpret aerial photographs	4	Analyzing

Name of staff: Geotechnical Engineering

Name of Subject: Vaibhav Augad

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	formation process	1	Knowledge
2	Explain permeability and seepage analysis of soil by construction of flow net	2	Understanding
3	Illustrate the effect of compaction on soil and understand the basics of stress distribution	4	Analyzing
4	Express shear strength of soil and its measurement under various drainage conditions.	2	Understanding
5	Evaluate the earth pressure due to backfill on retaining structures by using different theories.	5	Evaluating
6	Analysis of stability of slopes for different types of soils.	4	Analyzing

Name of staff: Dr. S.S.deshmukh

Name of Subject: Concrete Technology

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Able to select the various ingredients of concrete and its suitable proportion to achieved desired	2	Understanding
2	Able to check the properties of concrete in fresh and hardened state.	4	Analyzing
3	Get acquainted to concreting equipments, techniques and different types of special concrete	2	Understanding
4	Able to predict deteriorations in concrete and get acquainted to various repairing methods and	4	Analyzing

Name of staff: Prof. J.S. Athalye

Name of Subject: Structural Analysis

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand the basic concept of static and kinematic indeterminacy and analysis of	2	Understanding
2	Analyze redundant trusses and able to perform approximate analysis of multi-story multi-bay	4	Analyzing
3	Implement application of the slope deflection method to beams and portal frames.	3	Applying
4	Analyze beams and portal frames using moment distribution method	4	Analyzing
5	Determine response of beams and portal frames using structure approach of stiffness matrix	3	Applying
6	Apply the concepts of plastic analysis in the analysis of steel structures.	3	Applying

Name of staff: Prof. S. K. Daterao

Name of Subject: Project Management

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Describe project life cycle and the domains of Project Management	2	Understanding
2	Explain networking methods and their applications in planning and management	1	Knowledge
3	Categorize the materials as per their annual usage and also Calculate production rate of	2	Understanding
4	Demonstrates resource allocation techniques and apply it for manpower planning.	2	Understanding
5	Understand economical terms and different laws associated with project management	2	Understanding
6	Apply the methods of project selection and recommend the best economical project.	3	Applying

Civil: Third Year Sem : I

Name of staff: Prof. S. K. Daterao and Prof. S. C.Tandale

Name of Subject: Hydrology and water Resource Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand government organizations, apply & analyze precipitation & its abstractions.	1	Applying
2	Understand, apply & analyze runoff, runoff hydrographs and gauging of streams.	2	Applying, Evaluating
3	Understand, apply & analyze floods, hydrologic routing & Q-GIS software in hydrology.	3	Applying, Evaluating
4	Understand, apply & analyze reservoir planning, capacity of reservoir & reservoir economics.	1	Applying, Evaluating
5	Understand water logging & water management, apply & analyze ground water hydrology	2	Applying, Evaluating
6	Understand irrigation, piped distribution network and canal revenue, apply and analyze crop water requirement.	3	Applying, Evaluating

Name of staff: Sarika S Kale

Name of Subject: Structural Design I

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Demonstrate knowledge about the types of steel structures, steel code provisions and design of the adequate steel section subjected to tensile	1	Applying
2	Determine the adequate steel section subjected to compression load and design of built up columns along with lacing and battening.	2	Applying, Evaluating
3	Design eccentrically loaded column for section strength and column bases for axial load and uniaxial bending.	3	Applying, Evaluating
4	Design of laterally restrained and unrestrained beam with and without flange plate using rolled steel section.	1	Applying, Evaluating
5	Analyze the industrial truss for dead, live and wind load and design of gantry girder for moving load.	2	Analyze, Evaluating
6	Understand the role of components of welded plate girder and design cross section for welded plate girder including stiffeners and its	3	Applying, Evaluating

Name of staff: Prof. P. A. Manatkar

Name of Subject: Structural Analysis II

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Students able to analyze beams and Frames by slope Deflection method.	3 & 4	Apply & Analyze
2	Students able to analyze beams and Frames by Moment distribution method.	3 & 4	Apply & Analyze
3	Students able to learn Flexibility method.	3 & 4	Apply & Analyze
4	Students able to learn Stiffness method.	3 & 4	Apply & Analyze
5	Students understand concept of Finite difference method.	3 & 4	Apply & Analyze
6	Students able to learn Fundamental concepts of Finite Element method.	1 & 2	Knowledge Understanding

Name of staff: Prof. A. A. Burade

Name of Subject: Fluid Mechanics-II

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	To understand fluid flow around Submerged Objects and its types	2	Understanding
2	To understand Open channel flow and its relationship	3	Applying
3	To understand Uniform flow in open channels and jumps involved	3	Applying
4	To understand impact of jet and pumps used	3	Applying
5	To understand generation of hydropower	2	Understanding
6	To understand different types of flows for computation in open channel	3	Applying

Name of staff: Prof. V. A. Augad

Name of Subject: Infrastructure Engineering and Construction Techniques

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	to understand Meaning and scope of Infrastructure Engineering	2	Understanding
2	to understand Railways and its types	2	Understanding
3	to understand different Construction Techniques	3	Applying
4	to understand different Tunneling methods	2	Understanding
5	to understand Docks & Harbors and its requirement	3	Applying
6	to understand different Construction Equipments	3	Applying

Civil: Third Year Sem : II

Name of staff: Mr. Abhishek Shirle

Name of Subject: Environmental Engineering - I

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Identify the effect of the pollutants on the environment and design necessary control equipment.	2	Understanding
2	Apply the knowledge of quantity and quality of water to solve / analyze the problems in water supply scheme.	3 4	Applying Analyzing
3	Apply the knowledge of operation and processes in water treatment plant to solve / analyze the problems in water quality.	3 4	Applying Analyzing
4	Evaluate and design of coagulation, flocculation and filtration unit.	5 & 6	Evaluating & Creating
5	Apply the knowledge of advanced treatment and tertiary treatment.	3	Applying
6	Apply the knowledge of water supply to solve / analyze the problems in water conveyance and water treatment system.	3	Applying

Name of staff: Prof. P. A. Manatkar

Name of Subject: Advanced Surveying

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	After completion of unit student should be able to Understand modern surveying technique & equipments also apply knowledge of SBPS	1 2	Knowledge Understanding
2	After completion of unit student should be able to Understand hydrographic surveying & use sounding equipments and applying	1 2	Knowledge Understanding
3	After completion of unit student should be able to Remember & understand the principles of the earth surface, its projections and	3 4	Apply Analyze
4	After completion of unit student should be able to Explain limits of accuracy apply principles of theory of errors for correction of	3 4	Apply Analyze
5	After completion of unit student should be able to Identify aerial photographs and understand procedure of aerial survey & utilize	3 2	Apply Understanding
6	After completion of unit student should be able to Handle the leveling errors they are likely to come across any large scale survey works &	3 2	Apply Understanding

Name of staff: Prof. S.R.Kate

Name of Subject: Project Management and Engineering Economics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Explain the importance, objective, and functions of project management.	2	Understanding
2	Analyze the network for planning and scheduling of project.	3 4	Applying Analyzing
3	Apply different methods of analysis for project resource management and safety norms to the construction project.	3 4	Applying Analyzing
4	Apply project monitoring, resource allocation as well as basic knowledge of project management software for controlling of project.	5 6	Evaluating Creating
5	Apply basic project economics in construction industry.	3	Applying
6	Evaluate conditions for project appraisal and preparation of project feasibility report as well as detailed project report.	3	Applying

Name of staff: Prof. S. C. Tandale/Prof. B. R. Warvate

Name of Subject: Name of staff: Foundation Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Identify a suitable foundation system and understanding of absics of foundation for a structure	1	Knowledge
		2	Understanding
2	Evaluate the importance & understand various bearing capacity determination	3	Apply
		4	Analyze
3	Understand the causes and procedures of Settlement and Consolidation Settlement	1	Knowledge
		2	Understanding
4	Students will get knowledge about types of deep foundations and will be able to calculate load carrying capacity by various methods.	1	Apply
		2	Analyze
5	Learn concept of Cofferdams and Foundation on Black Cotton Soils&To design foundation on black cotton soil.	3	Knowledge
		4	Understanding
6	Use knowledge about new trend in foundation Engineering like Soil Reinforcement and Earthquake Geo-techniques in their actual site work.	1	Knowledge
		2	Understanding

Name of staff: Prof.Sarika Kale

Name of Subject: Structural Design –II

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Apply relevant IS provisions to ensure safety and serviceability of structures, understand the design philosophies and behavior of materials:	4	Apply Analyze
2	Recognize mode of failure as per LSM and evaluate moment of resistance for singly, doubly rectangular, and flanged sections.	2	Apply Analyze
3	Design & detailing of rectangular one way and two-way slab with different boundary conditions	1	Apply Analyze
4	Design & detailing of dog legged and open well staircase	2	Apply Analyze
5	Design & detailing of singly/doubly rectangular/flanged beams for flexure, shear, bond and torsion.	1	Apply Analyze
6	Design & detailing of short columns subjected to axial load, uni-axial/bi-axial bending and their footings.	2	Apply Analyze

Civil: Final Year Sem : I

Name of staff: Mr. Abhishek Shirle

Name of Subject: Environmental Engineering - II

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Explain component of sewage collection, conveyance and treatment plant, keeping in view of quantitative and qualitative approach.	2	Understanding
2	Describe stream sanitation and design screen chamber, grit chamber, and primary sedimentation tank.	2 6	Understanding Creating
3	Describe and design secondary treatment units with special emphasis on activated sludge process and trickling filter.	2 6	Understanding Creating
4	Describe low cost treatment methods, viz., Oxidation pond, aerated lagoon, phytoremediation and root zone technology.	2	Understanding
5	Describe anaerobic treatment processes as anaerobic digester, up flow anaerobic sludge blanket and design of units as septic tank with up flow	2 6	Understanding Creating
6	Explain industrial wastewater treatment facilities.	2	Understanding

Name of staff: Mr. S.S. Kudale

Name of Subject: Structural Design and Drawing III (401003)

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Students will have knowledge of pre-tensioning & post tensioning systems also they will calculate stresses, losses and analyze cable	1	Knowledge
		2	Understanding
2	Students will able to design post tensioned prestressed concrete simply supported rectangular and flanged sections for flexure and shear	3	Apply
		4	Analyze
3	Students will able to design prestressed two way flat slabs by direct design method.	3	Apply
		4	Analyze
4	Students will analyze and design RCC cantilever type of retaining wall for various types of backfill conditions.	3	Apply
		4	Analyze
5	Students will able to design of circular, square and rectangular water tanks resting on ground by working stress method with the help of limit	3	Apply
		4	Analyze
6	Students will able to design & Estimation of combined effect of lateral forces and vertical loading on G+2 storied frames.	3	Apply
		4	Analyze

Name of staff: Prof. K. H. Ghorpade

Name of Subject: Transportation Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Students able to understand Role of transportation, highway development and highway planning.	1	Knowledge
		2	Understanding
2	Students able to understand Geometric Design of Highway and Highway drainage system.	3	Apply
		2	Understanding
3	Students able to understand Traffic engineering & its control.	3	Apply
		2	Understanding
4	Students able to understand Highway Pavement materials and	3	Apply
		2	Understanding
5	Students able to Design Highway Pavement.	3 & 4	Apply & Analyze
6	Students able to understand Pavement Construction techniques and Modern Trends in Highway Materials, Construction &	3	Apply
		2	Understanding

Name of staff: Shrikant R. Kate

Name of Subject: Architecture and Town Planning (Elective III - 401004)

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Student to use principles of architectural planning and understand futuristic need of users	1	Knowledge
		2	Understanding
2	Student understand and demonstrate planning strategy with reference to different acts, guidelines, norms	3	Apply
		4	Analyze
3	Evaluate and defend the proposals.	1	Knowledge
		2	Understanding
4	Apply the principles of architectural planning and landscaping for improving quality of life	2	Understanding
5	Understand the confronting issues of the area and apply the acts.	3	Apply
		2	Understanding
6	Appraise the existing condition and to develop the area for betterment	2	Understanding

Name of staff: Prof. S. K. Daterao and Prof. S. C.Tandale

Name of Subject: TQM & MIS

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Students acquire knowledge of What is quality, quality gurus and their contribution in this world. Describe Total quality management and total	1	Knowledge
		2	Understanding
2	Students will able to understand the concept of 7 QC tools and apply them in their project or any industrial research problem.	3	Apply
		4	Analyze
3	Students will analyze the use and importance of ISO and Quality Manual Importance, contents, documentation. Importance of check-lists	1	Knowledge
		2	Understanding
4	Describe Management Control and CONQAS and CIDC-CQRA Certifications	2	Understanding
5	Describe Techniques in TQM Implementation and various types of international and national quality awards	3	Apply
		2	Understanding
6	Explain Introduction to Management Information systems (MIS) Overview, Definition	3	Apply
		2	Understanding

Civil: Final Year Sem : II

Name of staff: Prof. S. M. Kale and Prof. V. A. Augad

Name of Subject: Dams and Hydraulic Structures

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Students are able to understand introduction, classification, different terms related to dams and dam safety and instrumentation	3	Apply
		4	Analyze
2	Students are able to understand different components and construction of gravity dam, and concept and classification of Arch Dam and Other	2	Knowledge Understanding
3	Students are able to understand details of spillway and gates, Hydropower Structures,	4	Knowledge Understanding
4	Students are able to understand details of Earth Dam and Diversion head works	4	Knowledge Understanding
5	Students are able to understand details of Canals and Canal Structures	4	Knowledge Understanding
6	Students are able to understand details of C. D. Works and River Training Structures	4	Knowledge Understanding

Name of staff: Prof. K. H. Ghorpade and Prof. S. C. Tandale

Name of Subject: Quantity Surveying, Contracts and Tenders

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	To provide the student with the ability to understand basic definition related to estimate and preparation of reports for estimation of various	3	Apply
		4	Analyze
2	To provide the student with the ability to estimate the quantities of item of works involved in buildings.	1&2	Knowledge Understanding
3	To provide the student with the ability to do rate analysis	1&2	Knowledge Understanding
4	To provide the student with the ability to valuation of properties	1&2	Knowledge Understanding
5	To provide the student with the basic understanding of tender and tender documents and tender notices	1&2	Knowledge Understanding
6	To understand contract and contracts documents and and various type of contracts	1&2	Knowledge Understanding

Name of staff: Prof. S. K. Daterao and Dr. S. S. Deshmukh

Name of Subject: Air Pollution and Control

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Explore the meteorological aspects, Gaussian model and Emission inventory.	1 & 2	Knowledge Understanding
2	Classify and analyze Air sampling methods.	1 & 2	Knowledge Understanding
3	Select methods for control and prevention of air pollution.	3	Applying
4	Design of air pollution control equipment's	6	Creating
5	Discuss Air Pollution prevention and control Act	2	Understanding
6	Explore the Environmental impact assessment and management.	1 & 2	Knowledge Understanding

Name of staff: Gauri Patil / Kiran Ghorpade

Name of Subject: Construction Management (CM)

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand the overview of construction sector.	2	Understanding
2	Illustrate construction scheduling, work study and work measurement.	3	Applying
3	Acquaint various labor laws and financial aspects of construction projects.	3	Applying
4	Explain elements of risk management and value engineering.	2	Understanding
5	State material and human resource management techniques in construction.	3 4	Applying Analyzing
6	Understand basics of artificial intelligence techniques in civil engineering	2	Understanding

Computer: Second Year Sem: I

Name of staff: Mr. D.G.Matale

Name of Subject: Discrete Mathematics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	FORMULATE problems precisely, solve the problems, apply formal proof techniques, and explain the reasoning clearly.	2,3,5	understand, apply, evaluate
2	APPLY appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real-life contexts	2,3,5	understand. apply, evaluate
3	DESIGN AND ANALYZE real world engineering problems by applying set theory, propositional logic and to construct proofs using mathematical induction.	1,2,3,4,5	remember, understand. apply, analyse, evaluate
4	SPECIFY, MANIPULATE AND APPLY equivalence relations, construct and use functions and apply these concepts to solve new problems	1,2,3,5	remember, understand. apply, evaluate
5	CALCULATE number of possible outcomes using permutations and combinations, to model and analyze computational processes using combinatorics	2,3,5	understand. apply, evaluate
6	MODEL AND SOLVE computing problem using tree and graph and solve problems using appropriate algorithms	2,3,5	understand. apply, evaluate
7	ANALYZE the properties of binary operations, apply abstract algebra in coding theory and evaluate the algebraic structures	2,3,4,5	understand. apply, analyse, evaluate

Name of staff: Dr. Nikita Kulkarni

Name of Subject: Fundamentals of Data Structures

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Design the algorithms to solve the programming problems, identify appropriate algorithmic strategy for specific application, and analyze the time and space complexity.	BL6	Design
2	Discriminate the usage of various structures, Design/Program/Implement the appropriate data structures; use them in implementations of abstract data types and Identity the appropriate data structure in approaching the problem solution.	BL4, BL6	Discriminate, Design
3	Discriminate the usage of various structures, Design/Program/Implement the appropriate data structures; use them in implementations of abstract data types and Identity the appropriate data structure in approaching the problem solution.	BL4, BL6	Discriminate, Design
4	Understand the computational efficiency of the principal algorithms for searching and sorting and choose the most efficient one for the application.	BL2	Understand
5	Understand the computational efficiency of the principal algorithms for searching and sorting and choose the most efficient one for the application.	BL2	Understand
6	Understand, Implement and apply principles of data structures-stack and queue to solve computational problems.	BL2, BL3	Understand, Apply

Name of staff: Mrs. Alfiya Shahbad

Name of Subject: Object Oriented Programming

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Apply constructs- sequence, selection and iteration; classes and objects, inheritance, use of predefined classes from libraries while developing software.	BL1 BL2	Understand, Apply
2	Design object-oriented solutions for small systems involving multiple objects.	BL1 BL2 BL4 BL5	Understand, Apply, Evaluate, Create
3	Use virtual and pure virtual function and complex programming situations.	BL1 BL2	Understand, Apply
4	Apply object-oriented software principles in problem solving.	BL1 BL2 BL4	Understand, Apply, Evaluate
5	Analyze the strengths of object-oriented programming.	BL1 BL3	Understand, Analyze
6	Develop the application using object oriented programming language(C++).	BL1 BL2 BL4 BL5	Understand, Apply, Evaluate Create

Name of Subject: Name of staff: Mrs. Nilufar Zaman

Computer Graphics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Identify the basic terminologies of Computer Graphics and interpret the mathematical foundation of the concepts of computer graphics.	BL1 BL2	Understand, Apply
2	Apply mathematics to develop Computer programs for elementary graphic operations.	BL2 BL4	Apply, Evaluate
3	Illustrate the concepts of windowing and clipping and apply various algorithms to fill and clip polygons.	BL1 BL2 BL4	Understand, Apply, Evaluate
4	Understand and apply the core concepts of computer graphics, including transformation in two and three dimensions, viewing and projection.	BL1 BL2	Understand, Apply
5	Understand the concepts of color models, lighting, shading models and hidden surface elimination.	BL1 BL3	Understand, Analyze
6	Create effective programs using concepts of curves, fractals, animation and gaming.	BL1 BL2 BL4 BL5	Understand, Apply, Evaluate, Create

Name of staff: Mrs. Pratima Patil

Name of Subject: Digital Electronics & Logic Design

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Simplify Boolean Expression	BL1 BL2	Understand, Apply
2	Understanding functionalities and properties of Logic Families	BL1 BL2	Understand, Apply
3	Understanding applicability of Logic Families	BL1 BL2	Understand, Apply
4	Designing programmable logic devices	BL2 BL4	Apply, Evaluate
5	Develop simple real world application using ASM chart	BL2 BL4	Apply, Evaluate
6	Understanding basic concepts of microprocessor	BL1 BL2	Understand, Apply

Computer: Second Year Sem: II

Name of staff: Mr. D.G.Matale

Name of Subject: Engineering Mathematics III

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	SOLVE Linear Differential Equations, essential in modelling and design of computer based systems	2,3,5	understand, apply,evaluate
2	APPLY concept of Fourier Transform and Z transform and its application to continuous and discrete systems and image processing	2,3,5	understand, apply,evaluate
3	APPLY statistical methods like correlation and regression analysis and probability theory for data analysis and predictions in machine learning	1,2,3,4,5	remember, understand. apply, analyse , evaluate
4	SOLVE algebraic and transcetedal equations and system of linear equations using numerical techniques	2,3,5	understand, apply,evaluate
5	OBTAIN interpolating polynomials, numerical differential and integration, numerical solutions of ordinary differential equations used in modern scientific computing	2,3,5	understand, apply,evaluate

Name of staff: Mrs. Nilufar Zaman

Name of Subject: Data Structures & Algorithms

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Identify and articulate the complexity goals and benefits of a good hashing scheme for real- world applications.	BL1 BL2 BL5	Understand, Apply, Create
2	Apply non-linear data structures for solving problems of various domain.	BL2 BL4	Apply, Evaluate
3	Design and specify the operations of a nonlinear-based abstract data type and implement them in a high-level programming language.	BL2 BL4 BL5	Apply, Evaluate,Create
4	Analyze the algorithmic solutions for resource requirements and optimization	BL1 BL2	Understand, Apply
5	Use efficient indexing methods and multiway search techniques to store and maintain data.	BL2 BL4 BL5	Apply, Evaluate, Create
6	Use appropriate modern tools to understand and analyze the functionalities confined to the secondary storage	BL1 BL2 BL5	Understand, Apply, Create

Name of staff: Mrs.Alfiya Shahbad

Name of Subject: Software Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Analyze software requirements and formulate design solution for software.	BL1 BL2	Understand, Apply
2	Design applicable solutions in one or more application domains using software engineering approaches that integrate ethical, social, legal and economic concerns.	BL2 BL4	Apply, Evaluate
3	Apply new software models, techniques and technologies to bring out innovative and novelistic solutions for the growth of the society in all aspects and evolving into their continuous professional development.	BL2 BL4	Apply, Evaluate
4	Model and design User interface and component-level. Identify and handle risk management and software configuration management.	BL1 BL2 BL5	Understand, Apply, Create
5	Utilize knowledge of software testing approaches, approaches to verification and validation.	BL4	Understand, Apply
6	Construct software of high quality – software that is reliable, and that is reasonably easy to understand, modify and maintain efficient, reliable, robust and cost-effective software solutions.	BL1 BL2 BL5	Understand, Apply, Create

Name of staff: Mrs. Trupti Thite

Name of Subject: Microprocessor

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	learn Basic Programming Model and Applications Instruction Set of 80386,apply the assembly language programming to develop small real life embedded application.	BL1 BL2 BL4	Understand, Apply, Evaluate
2	Learn Systems Architecture and Memory Management of 80386	BL1 BL2	Understand, Apply
3	Understand Protection and Multitasking mechanisms in 80386	BL1 BL2	Understand, Apply
4	study Input output protections ,Exceptions and Interrupts handling in 80386	BL1 BL2	Understand, Apply
5	Understand Mode switching ,debugging in 80386	BL1 BL2	Understand, Apply
6	Learn 80386DX timing constraints,Signals, Bus Cycles and also 80387 Coprocessor	BL1 BL2	Understand, Apply

Name of staff: Mrs.S.S.Adagale

Name of Subject: Principals of Programming Languages

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Make use of basic principles of programming languages	BL1 BL2	Understand, Apply
2	Able to develop a program with Data representation and Computations	BL2 BL4	Apply, Evaluate
3	Able to develop programs using Object Oriented Programming language : Java	BL1 BL2 BL5	Understand, Apply, Create
4	Develop application using inheritance, encapsulation, and polymorphism	BL1 BL2 BL5	Understand, Apply, Create
5	Able to demonstrate Applet and Multithreading for robust application development	BL1 BL2 BL5	Understand, Apply, Create
6	Able to develop a simple program using basic concepts of Functional and Logical programming paradigm	BL1 BL2 BL5	Understand, Apply, Create

Computer: Third Year Sem: I

Name of staff: Mrs.Amruta Dange

Name of Subject: Theory of Computation

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Understand formal language, translation logic, essentials of translation, alphabets, language representation and apply it to design Finite Automata and its variants	BL1 BL2	Understand, Apply
2	Construct regular expression to present regular language and understand pumping lemma for RE	BL1 BL2	Understand, Apply
3	Design Context Free Grammars and learn to simplify the grammar	BL2 BL4	Apply, Evaluate
4	Construct Pushdown Automaton model for the Context Free Language	BL2 BL4	Apply, Evaluate
5	Devise Turing Machine for the different requirements outlined by theoretical computer science	BL1 BL2 BL5	Understand, Apply, Create
6	Analyze different classes of problems, and study concepts of NP completeness	BL1, BL2, BL4, BL5	Understand, Apply, Evaluate, Create

Name of staff: Dr. Nikita Kulkarni

Name of Subject: Database Management Systems

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Analyze and design Database Management System using ER model	BL4, BL6	Analyze, design
2	Implement database queries using database languages	BL3	Implement
3	Normalize the database design using normal forms	BL6	Normalize (formaulate)
4	Apply Transaction Management concepts in real-time situations	BL3	Apply
5	Use NoSQL databases for processing unstructured data	BL3	Use
6	Differentiate between Complex Data Types and analyze the use of appropriate data types	BL4	Differentiate

Name of staff: Mrs.Alfiya Shahbad

Name of Subject: Software Engineering & Project Management

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Decide on a process model for a developing a software project	BL1 BL2	Understand, Apply
2	Classify software applications and Identify unique features of various domains	BL2 BL4	Apply, Evaluate
3	Design test cases of a software system.	BL2 BL4	Apply, Evaluate
4	Understand basics of IT Project management.	BL1, BL2, BL5	Understand, Apply, Create
5	Plan, schedule and execute a project considering the risk management.	BL4	Understand, Apply
6	Apply quality attributes in software development life cycle.	BL1, BL2, BL5	Understand, Apply, Create

Name of staff: Mrs. Pratima Patil

Name of Subject: Information Systems & Engineering Economics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Designing various forms of the information systems	BL6	Design
2	Understanding various applications in organization	BL1 BL2	Understand, Apply
3	Identifying managerial issues relating to information systems	BL1 BL2	Understand, Apply
4	To identify and evaluate various options in Information System.	BL1 BL2	Understand, Apply
5	Prepare students to analyze cost/revenue data	BL4, BL6	Analyze, design
6	Prepare students to do economic analyses in the decision making process	BL1 BL2	Understand, Apply

Name of staff: Mrs. Alfiya Shahbad

Name of Subject: Computer Networks

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Summarize fundamental concepts of Computer Networks, architectures, protocols and technologies	BL1 BL2	Understand, Apply
2	Illustrate the working and functions of data link layer	BL1 BL2	Understand, Apply
3	Analyze the working of different routing protocols and mechanisms	BL4	Analyze
4	Implement client-server applications using sockets	BL1 BL2 BL4 BL5	Understand, Apply, Evaluate, Create
5	Illustrate role of application layer with its protocols, client-server architectures	BL1 BL2	Understand, Apply
6	Comprehend the basics of Network Security	BL1 BL2	Understand, Apply

Computer: Third Year Sem: II

Name of staff: Mrs. Pratima Patil

Name of Subject: Design & Analysis of Algorithms

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Formulate the problems	BL1 BL2	Understand, Apply
2	Analyze the asymptotic performance of algorithms	BL4	Analyze
3	Decide and apply algorithmic strategies to solve given problem	BL1 BL2	Understand, Apply
4	Find optimal solution by applying various methods	B3	Understand & apply
5	Develop algorithmic strategies	B3	Understand & apply
6	Improve Problem Solving capability	BL4	Analyze

Name of staff: Mr. D.A.Jakkan

Name of Subject: Embedded System & IoT

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Implement an architectural design for IoT for specified requirement	B1	Study , design
2	Solve the given societal challenge using IoT	B4	Analyze
3	Choose between available technologies and devices for stated IoT challenge	B3	Understand & apply
4	IoT Protocols and Security	B4	applying
5	Web of Things and Cloud of Things	B5	implementing
6	IoT Physical Servers, Cloud Offerings	B6	Understand & apply

Name of staff: Mrs. V.A.Gadekar

Name of Subject: Software Modelling Design

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Analyze the problem statement (SRS) and choose proper design technique for designing webbased/ desktop application	BL1	Analyze
2	Design and analyze an application using UML modeling as fundamental tool	BL2	Design & analyze
3	Apply design patterns to understand reusability in OO design	BL2	Understand & apply
4	Decide and apply appropriate modern tool for designing and modelin	BL3	Understand , apply & create
5	Decide and apply appropriate modern testing tool for testing web-based/desktop application	BL4	Understand & apply

Name of staff: Mrs. Sushadevi Adagale

Name of Subject: Web Technology

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	analyze and develop Front End Tools	BL1, BL2, BL4, BL5	Understand, Apply, Evaluate, Create
2	analyze and web development and design methodology	BL1, BL2, BL4, BL5	Understand, Apply, Evaluate, Create
3	develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management	BL1, BL2, BL4, BL5	Understand, Apply, Evaluate, Create
4	analyze and develop Web Services	BL1, BL2, BL4, BL5	Understand, Apply, Evaluate, Create

Name of staff: Mrs. Vanita Gadekar

Name of Subject: System Programming & Operating System

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Analyze and synthesize system software	BL1	Analyze
2	Design & implement system software	BL2	Design
3	Implement operating system functions.	BL2	Implement
4	Use tools like LEX & YACC.	BL3	Use & Evaluate

Computer: Final Year Sem: I

Name of staff: Mrs. Amruta Dange

Name of Subject: High Performance Computing

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Describe Different parallel architecture, inter-connect networks, Programming Models	BL1	Describe
2	Develop an efficient parallel algorithm to solve given problem	BL2	Develop
3	Analyze and measure performance of modern parallel computing systems	BL4	Analyze
4	Build the logic to parallelize the programming task	BL4	Build

Name of staff: Mrs. Vanita Gadekar

Name of Subject: Artificial Intelligence and Robotics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Identify and apply suitable Intelligent agents for various AI applications	BL1	Identify and apply
2	Design smart system using different informed search / uninformed search or heuristic approaches.	BL2	Understand & Design
3	Identify knowledge associated and represent it by ontological engineering to plan a strategy to solve given problem.	BL3	Understand & Identify
4	Apply the suitable algorithms to solve AI problems	BL4	Understand & Apply

Name of staff: Mrs. Pratima Patil

Name of Subject: Data Analytics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Develop problem solving abilities using mathematics	BL2	Understand & Design
2	Study of different algorithmic examples in distributed, concurrent and parallel environments	BL2	Understand & Design
3	Write case studies in Business Analytic and Intelligence using mathematical models	BL4	Understand & Apply
4	Present a survey on applications for Business Analytic and Intelligence	BL4	Understand & Apply
5	Provide problem solutions for multi-core or distributed, concurrent/Parallel environments	BL4	Understand & Apply

Name of staff: Mrs. Sushadevi Adagale

Name of Subject: Data Mining & Warehousing

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Apply basic, intermediate and advanced techniques to mine the data	BL4	Understand & Apply
2	Analyze the output generated by the process of data mining	BL4	Understand & Apply
3	Explore the hidden patterns in the data	BL2	Understand & Design
4	Optimize the mining process by choosing best data mining techniques	BL2	Understand & Design

Name of staff: Mrs. Nilufar Zaman

Name of Subject: Software Testing & Quality Assurance

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Describe fundamental concepts in software testing such as manual testing, automation testing and software quality assurance.	BL1 BL2	Understand, Apply
2	Design and develop project test plan, design test cases, test data, and conduct test operations	BL1 BL2 BL5	Understand, Apply, Create
3	Apply recent automation tool for various software testing for testing software	BL1 BL2 BL4	Understand, Apply, Evaluate
4	Apply recent automation tool for various software testing for testing software	BL1 BL2 BL4	Understand, Apply, Evaluate
5	Apply and analyze effectiveness Software Quality Tools	BL1 BL2	Understand, Apply

Computer: Final Year Sem: II

Name of staff: Mrs. Pratima Patil

Name of Subject: Machine Learning

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Distinguish different learning based applications	BL2	Understand
2	Apply different preprocessing methods to prepare training data set for machine learning.	BL3	Apply
3	Design and implement supervised and unsupervised machine learning algorithm.	BL3	Design
4	Implement different learning models	BL3	Design
5	Learn Meta classifiers and deep learning concepts	BL2	Understand

Name of staff: Dr. Nikita Kulkarni

Name of Subject: Information & Cyber Security

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Gauge the security protections and limitations provided by today's technology.	BL2	Gauge (Compute)
2	Identify information security and cyber security threats.	BL2	Identify
3	Analyze threats in order to protect or defend it in cyberspace from cyber-attacks.	BL4	Analyze
4	Build appropriate security solutions against cyber-attacks.	BL6	Build (Create)

Name of staff: Mrs. Vanita Gadekar

Name of Subject: Soft Computing & Optimization Algorithm

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	Apply soft computing methodologies, including artificial neural networks, fuzzy sets, fuzzy logic, fuzzy inference systems and genetic algorithms	BL1	Understand & Apply
2	Design and development of certain scientific and commercial application using computational neural network models, fuzzy models, fuzzy clustering applications and genetic algorithms in specified applications.	BL2	Design & develop

Name of staff: Mrs. Nilufar Zaman

Name of Subject: Cloud Computing

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Keyword
1	To understand the basics of Cloud Computing Environment	BL1 BL4	Understand, Evaluate
2	To understand the data storage	BL1 BL4	Understand, Evaluate
3	To install the cloud environment and do the analysis	BL1, BL2, BL4, BL5	Understand, Apply, Evaluate, Create
4	To explore the future trends of cloud	BL1 BL2	Understand, Apply

E&TC: Second Year Sem: I

Name of staff: Mrs. Trupti.G.Thite

Name of Subject: Electronic Circuits

Sr. No.	Course Outcomes
1	learn the physics, characteristics and parameters of MOSFET towards its application as amplifier.
2	Design MOSFET amplifiers, with and without feedback, & MOSFET oscillators, for given
3	Analyze and assess the performance of linear and switching regulators, with their variants, towards applications in regulated power supplies
4	Explain internal schematic of Op-Amp and define its performance parameters.
5	Design, Build and test Op-amp based analog signal processing and conditioning circuits towards various real time applications.
6	Understand and compare the principles of various data conversion techniques and PLL with their

Name of staff: Ms. Kranti Patil

Name of Subject: Electrical Circuits Circuits

Sr. No.	Course Outcomes
1	Analyze the simple DC and AC circuit with circuit simplification techniques.
2	Formulate and analyze driven and source free RL and RC circuits.
3	Formulate & determine network parameters
4	Explain construction, working and applications of DC Machines / Single Phase & Three Phase AC Motors
5	Explain construction, working and applications of special purpose motors & understand motors used in electrical vehicles.
6	: Analyze and select a suitable motor for difren application

Name of staff: Mr. D.A.Jakkan

Name of Subject: Data Structure

Sr. No.	Course Outcomes
1	Solve mathematical problems using C programming language.
2	Implement sorting and searching algorithms and calculate their complexity.
3	Develop applications of stack and queue using array.
4	Demonstrate applicability of Linked List.
5	Demonstrate applicability of nonlinear data structures - Binary Tree with respect to its time complexity.
6	Apply the knowledge of graph for solving the problems of spanning tree and shortest path algorithm.

Name of staff: Ms. Anuradha Kondhalkar

Name of Subject: Engineering Mathematics - III

Sr. No.	Course Outcomes
1	Solve higher order linear differential equation using appropriate techniques for modelling, analyzing of electrical circuits and control systems
2	Apply concept of Fourier transform and its applications to continuous & discrete systems, signal & image processing and communication systems.
3	Apply concept of Z-transform and its applications to continuous & discrete systems, signal & image processing and communication systems.
4	Obtain Interpolating polynomials, numerically differentiate and integrate functions, numerical solutions of differential equations using single step and multi-step iterative methods used in
5	Perform vector differentiation & integration, analyze the vector fields and apply to electro-magnetic fields & wave theory.
6	Analyze Complex functions, Conformal mappings, Contour integration applicable to electrostatics, digital filters, signal and image processing.

Name of staff: Mr. Gulame M.B.

Name of Subject: Digital Circuits

Sr. No.	Course Outcomes
1	Identify and prevent various hazards and timing problems in a digital design
2	Use the basic logic gates and various reduction techniques of digital logic circuit.
3	Analyze, design and implement combinational logic circuits.
4	Analyze, design and implement sequential circuits
5	Differentiate between Mealy and Moore machines.
6	Analyze digital system design using PLD.

E&TC: Second Year Sem: II

Name of staff: Mr. D.A.Jakkan

Name of Subject: Object Oriented Programming

Sr. No.	Course Outcomes
1	Describe the principles of object oriented programming.
2	Apply the concepts of data encapsulation, inheritance in C++.
3	Understand Operator overloading and friend functions in C++.
4	Apply the concepts of classes, methods inheritance and polymorphism to write programs C++.
5	Apply Templates, Namespaces and Exception Handling concepts to write programs in C++.
6	Describe and use of File handling in C++.

Name of staff: Gulame M.B.

Name of Subject: Signals & Systems

Sr. No.	Course Outcomes
1	Identify, classify basic signals and perform operations on signals.
2	Identify, Classify the systems based on their properties in terms of input output relation and in terms of impulse response and will be able to determine the convolution between to signals.
3	Analyze and resolve the signals in frequency domain using Fourier series and Fourier Transform
4	Resolve the signals in complex frequency domain using Laplace Transform, and will be able to apply and analyze the LTI systems using Laplace Transforms.
5	Define and Describe the probability, random variables and random signals. Compute the probability of a given event, model, compute the CDF and PDF.

Name of staff: Ms. Kranti D. PAtil

Name of Subject: Control Systems

Sr. No.	Course Outcomes
1	Determine and use models of physical systems in forms suitable for use in the analysis and design of control systems
2	Determine the (absolute) stability of a closed-loop control system.
3	Perform time domain analysis of control systems required for stability analysis.
4	Perform frequency domain analysis of control systems required for stability analysis.
5	Apply root-locus, Frequency Plots technique to analyze control systems.
6	Express and solve system equations in state variable form

Name of staff: Ms. Deepthi Kulkarni

Name of Subject: Principles of Communication Systems

Sr. No.	Course Outcomes
1	To compute & compare the bandwidth and transmission power requirements by analyzing time and frequency domain spectra of signal required for modulation schemes under study.
2	Describe and analyze the techniques of generation, transmission and reception of Amplitude Modulation Systems.
3	Explain generation and detection of FM systems and compare with AM systems
4	Exhibit the importance of Sampling Theorem and correlate with Pulse Modulation technique (PAM, PWM, and PPM).
5	Characterize the quantization process and elaborate digital representation techniques (PCM, DPCM, DM and ADM).
6	Illustrate waveform coding, multiplexing and synchronization techniques and articulate their importance in baseband digital transmission

E&TC: Third Year Sem: I

Name of staff: Mrs. Trupti.G.Thite

Name of Subject: Microcontrollers

Sr. No.	Course Outcomes
1	Understand the fundamentals of microcontroller and programming.
2	Interface various electronic components with microcontrollers
3	Analyze the features of PIC 18F XXXX.
4	Describe the programming details in peripheral support.
5	Develop interfacing models according to applications.
6	Evaluate the serial communication details and interfaces.

Name of staff: Ms. Deepthi Kulkarni

Name of Subject: Digital Communication

Sr. No.	Course Outcomes
1	Apply the statistical theory for describing various signals in a communication system.
2	Understand and explain various digital modulation techniques used in digital communication systems
3	Understand performance in presence of AWGN noise
4	Describe and analyze the digital communication system with spread spectrum modulation.
5	Analyze a communication system using information theoretic approach.
6	Use error control coding techniques to improve performance of a digital communication system.

Name of staff: Ms. K.D. Patil

Name of Subject: Electromagnetic Field Theory

Sr. No.	Course Outcomes
1	Apply the basic electromagnetic principles and determine the fields (E & H) due to the given source.
2	Apply boundary conditions to the boundaries between various media to interpret behavior of the fields on
3	State, Identify and Apply Maxwell's equations (integral and differential forms) in both the forms (Static,
4	Formulate, Interpret and solve simple uniform plane wave (Helmholtz Equations) equations, and analyze
5	Interpret and Apply the transmission line equation to transmission line problems with load impedance to
6	Carry out a detailed study, interpret the relevance and applications of Electromagnetics

Name of staff: Ms. Saste Supriya

Database Management

Sr. No.	Course Outcomes
1	Ability to implement the underlying concepts of a database system.
2	Design and implement a database schema for a given problem-domain using data model.
3	Formulate, using SQL/DML/DDDL commands, solutions to a wide range of query and update problems.
4	Implement transactions, concurrency control, and be able to do Database recovery.
5	Able to understand various Parallel Database Architectures and its applications.
6	Able to understand various Distributed Databases and its applications

Name of staff: Mr. Gulame M.B.

Name of Subject: Digital Signal Processing (Elective -I)

Sr. No.	Course Outcomes
1	Interpret and process discrete/ digital signals and represent DSP system.
2	Analyze the digital systems using the Z-transform techniques.
3	Implement efficient transform and its application to analyze DT signals.
4	Design and implement IIR filters.
5	Design and implement FIR filters.
6	Apply DSP techniques for speech/ biomedical/ image signal processing.

E&TC: Third Year Sem: II

Name of staff: Ms. K.D. Patil

Name of Subject: Power Electronics

Sr. No.	Course Outcomes
1	Design & implement a triggering / gate drive circuit for a power device
2	Understand, perform & analyze different controlled converters.
3	Evaluate battery backup time & design a battery charger.
4	Design & implement over voltage / over current protection circuit.

Name of staff: Mr. Gulame M.B.

Name of Subject: Information Theory Coding Techniques and Communication Networks

Sr. No.	Course Outcomes
1	Understand working of waveform coding techniques and analyse their performance.
2	Perform information theoretic analysis of communication system
3	Design a data compression scheme using suitable source coding technique.
4	Design a channel coding scheme for a communication system.
5	Understand and apply fundamental principles of data communication and networking.
6	Apply flow and error control techniques in communication networks.

Name of staff: Mr. Supriya Saste

Name of Subject: Business Management

Sr. No.	Course Outcomes
1	Get overview of Management Science aspects useful in business.
2	Get motivation for Entrepreneurship
3	Get Quality Aspects for Systematically Running the Business
4	To Develop Project Management aspect and Entrepreneurship Skills.

Name of staff: Ms. Saste Supriya

Name of Subject: Advanced Processors

Sr. No.	Course Outcomes
1	Describe the ARM microprocessor architectures and its feature.
2	Interface the advanced peripherals to ARM based microcontroller
3	Design embedded system with available resources.
4	Use of DSP Processors and resources for signal processing applications.

Name of staff: Mr. Jakkan D.A.

Name of Subject: System Programming and Operating System

Sr. No.	Course Outcomes
1	linker, loaders and compiler.
2	To get acquainted with software tools for program development.
3	To explore memory allocation methods, input output devices and file system w. r. t. various operating system.
4	schemes in operating system.

E&TC: Final Year Sem: I

Name of staff: Mr. D.A.Jakkan

Name of Subject: CNS

Sr. No.	Course Outcomes
1	Understand fundamental underlying principles of computer networking
2	Describe and analyze the hardware, software, components of a network and their interrelations.
3	Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies.
4	Have a basic knowledge of installing and configuring networking applications.
5	Specify and identify deficiencies in existing protocols, and then go onto select new and better protocols.
6	Have a basic knowledge of the use of cryptography and network security.

Name of staff: Mrs. Trupti G. Thite

Name of Subject: Internet of Things

Sr. No.	Course Outcomes
1	Understand the various concepts, terminologies and architecture of IoT systems.
2	Use sensors and actuators for design of IoT.
3	Understand and apply various wireless Technologies for design of IoT systems
4	Understand and apply various IP protocols for design of IoT systems
5	Use various techniques of data storage and analytics in IoT
6	Understand various applications of IoT

Name of staff: Mr. M.B. Gulame

Name of Subject: VLSI Design & Technology

Sr. No.	Course Outcomes
1	Write effective HDL coding for digital design.
2	Apply knowledge of real time issues in digital design.
3	Model digital circuit with HDL, simulate, synthesis and prototype in PLDs.
4	Design CMOS circuits for specified applications.
5	Analyze various issues and constraints in design of an ASIC
6	Apply knowledge of testability in design and build self test circuit.

Name of staff: Ms. Kranti Patil

Name of Subject: Radiation and Microwave Techniques

Sr. No.	Course Outcomes
1	Differentiate various performance parameters of radiating elements.
2	Analyze various radiating elements and arrays.
3	Apply the knowledge of waveguide fundamentals in design of transmission lines.
4	Design and set up a system consisting of various passive microwave components.
5	Analyze tube based and solid state active devices along with their applications.
6	Measure various performance parameters of microwave components.

Name of staff: Mr. D.A. Jakkan

Name of Subject: Electronic Product Design

Sr. No.	Course Outcomes
1	Understand various stages of hardware, software and PCB design.
2	Importance of product test & test specifications.
3	Special design considerations and importance of documentation.

E&TC: Final Year Sem: II

Name of staff: Mrs. Trupti G. Thite

Name of Subject: Wireless Sensor Networks (Elective-IV)

Sr. No.	Course Outcomes
1	Understand various concepts and terminologies used in WSN
2	Learn importance and use of radio communication and link management in WSN
3	Understand various wireless standards and protocols associated with WSN
4	Recognize importance of localization and routing techniques used in WSN
5	Understand techniques of data aggregation and importance of security in WSN
6	Examine the issues involved in design and deployment of WSN

Name of staff: Ms. Supriya Saste

Name of Subject: Mobile Communication

Sr. No.	Course Outcomes
1	Apply the concepts of switching technique and traffic engineering to design multistage networks.
2	Explore the architecture of GSM.
3	Differentiate thoroughly the generations of mobile technologies.
4	Differentiate thoroughly the generations of mobile technologies.

Name of staff: Ms. Kranti D. Patil

Name of Subject: Broadband Communication Systems

Sr. No.	Course Outcomes
1	To comprehend the three primary components of a fiber optic communication system.
2	To comprehend the three primary components of a fiber optic communication system. To understand the system design issues and the role of WDM components in advanced light
3	Perform Link power budget and Rise Time Budget by proper selection of components and check its viability
4	To understand the basics of orbital mechanics and the look angles from ground stations to the satellite.
5	To apply subject understanding in Link Design.
6	Perform Satellite Link design for Up Link and Down Link.

Name of staff: Mr. Gulame M.B.

Name of Subject: Audio Video Engineering

Sr. No.	Course Outcomes
1	Apply the fundamentals of Analog Television and Colour Television standards.
2	Explain the fundamentals of Digital Television, DTV standards and parameters.
3	Study and understand various HDTV standards and Digital TV broadcasting systems and acquainted with different types of analog, digital TV and HDTV systems.
4	The learners will be groomed up to understand different channel allocations, difference between various systems present in this world, their transmission and reception techniques.
5	The students will get overview of fundamentals of Audio systems and basics of Acoustics
6	Understand acoustic fundamentals and various acoustic systems.

Mechanical : Second Year Sem : I

Name of staff: Mr. A. C. Shaikh

Name of Subject: Solid Mechanics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	DEFINE various types of stresses and strain developed on determinate and indeterminate members.	1 and 2	Knowledge, understand
2	DRAW Shear force and bending moment diagram for various types of transverse loading and support.	3,4,5 and 6	Apply, analyze, evaluate and create
3	COMPUTE the slope & deflection, bending stresses and shear stresses on a beam.	3,4 and 5	Apply, analyze and evaluate
4	CALCULATE torsional shear stress in shaft and buckling on the column.	3,4 and 5	Apply, analyze and evaluate
5	APPLY the concept of principal stresses and theories of failure to determine stresses on a 2-D element.	3,4 and 5	Apply, analyze and evaluate
6	UTILIZE the concepts of SFD & BMD, torsion and principal stresses to solve combined loading application based problems.	3,4,5 and 6	Apply, analyze, evaluate and create

Name of staff: Mr. K. M. Kulkarni

Name of Subject: Solid Modeling & Drafting

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	UNDERSTAND basic concepts of CAD system, need and scope in Product Lifecycle Management	2	Understand
2	UTILIZE knowledge of curves and surfacing features and methods to create complex solid geometry	4, 5 & 6	Analyze, Evaluate & Create
3	CONSTRUCT solid models, assemblies using various modeling techniques & PERFORM mass property analysis, including creating and using a coordinate system	4, 5 & 6	Analyze, Evaluate & Create
4	APPLY geometric transformations to simple 2D geometries	4 & 5	Analyze & Evaluate
5	USE CAD model data for various CAD based engineering applications viz. production drawings, 3D printing, FEA, CFD, MBD, CAE, CAM, etc.	1	Knowledge
6	USE PMI & MBD approach for communication	1	Knowledge

Name of staff: Dr. K. B. Gavali

Name of Subject: Engineering Materials and Metallurgy

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	COMPARE crystal structures and ASSESS different lattice parameters.	1	Knowledge
2	CORRELATE crystal structures and imperfections in crystals with mechanical behavior of materials	3	Apply
3	DIFFERENTIATE and DETERMINE mechanical properties using destructive and non-destructive testing of materials	1	Knowledge
4	IDENTIFY & ESTIMATE different parameters of the system viz., phases, variables, component, grains, grain boundary, and degree of freedom. etc	4	Analyse
5	ANALYSE effect of alloying element & heat treatment on properties of ferrous & nonferrous alloy	4	Analyse
6	SELECT appropriate materials for various applications	2,6	Understand, Apply

Name of staff: Mr. D..A.Baitule

Name of Subject: Engineering Thermodynamics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	DESCRIBE the basics of thermodynamics with heat and work interactions.	1	Knowledge
2	APPLY laws of thermodynamics to steady flow and non-flow processes.	3	Apply
3	APPLY entropy, available and non available energy for an Open and Closed System,	3	Apply
4	DETERMINE the properties of steam and their effect on performance of vapour power cycle.	4	Analyse
5	ANALYSE the fuel combustion process and products of combustion.	4	Analyse
6	SELECT various instrumentations required for safe and efficient operation of steam generator.	2,6	Understand ,Apply

Name of staff: Mr. D.A. Jakkan

Name of Subject: Electrical and Electronics Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Apply programming concepts to Understand role of Microprocessor and Microcontroller in embedded systems	2	Study & Understand
2	Develop interfacing of different types of sensors and other hardware devices with Atmega328 based Arduino Board	2	Understand & Implement
3	Understand the operation of DC motor, its speed control methods and braking	1	Study & Understand
4	Distinguish between types of three phase induction motor and its characteristic features	1	Analyze & Evaluate
5	Explain about emerging technology of Electric Vehicle (EV) and its modular subsystems	2	Study & Understand
6	Choose energy storage devices and electrical drives for EVs	2	Study & Understand

Mechanical : Second Year Sem : II

Name of staff: Mr. D.G. Matale

Name of Subject: Engineering Mathematics - III

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	SOLVE higher order linear differential equations and its applications to model and analyze mass spring systems.	2,3,5	understand. apply,evaluate
2	APPLY Integral transform techniques such as Laplace transform and Fourier transform to solve differential equations involved in vibration theory, heat transfer and related mechanical engineering applications	2,3,5	understand. apply,evaluate
3	APPLY Statistical methods like correlation, regression in analyzing and interpreting experimental data applicable to reliability engineering and probability theory in testing and quality control.	1,2,3,4,5	remember, understand. apply, analyse , evaluate
4	PERFORM Vector differentiation & integration, analyze the vector fields and APPLY to fluid flow problems.	1,2,3,4,5	remember, understand. apply, analyse , evaluate
5	SOLVE Partial differential equations such as wave equation, one and two dimensional heat flow equations.	2,3,4,5	understand. apply, analyse , evaluate

Name of staff: Mr. D.B. Dukale

Name of Subject: Kinematics of Machinery

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	APPLY kinematic analysis to simple mechanisms	3	Apply
2	ANALYZE velocity and acceleration in mechanisms by vector and graphical method	5 & 6	Evaluate & Create
3	SYNTHESIZE a four bar mechanism with analytical and graphical methods	5 & 6	Evaluate & Create
4	APPLY fundamentals of gear theory as a prerequisite for gear design	5 & 6	Evaluate & Create
5	CONSTRUCT cam profile for given follower motion	5 & 6	Evaluate & Create
6	STUDY mechanisms in Automation Systems	1	Knowledge

Name of staff: Mr S.L.Konde

Name of Subject: Applied Thermodynamics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	DETERMINE COP of refrigeration system and ANALYZE psychrometric processes.	3	Apply
2	DISCUSS basics of engine terminology,air standard, fuel air and actual cycles.	2 & 5	Understand & Evaluate
3	IDENTIFY factors affecting the combustion performance of SI and CI engines.	2 & 5	Understand & Evaluate
4	DETERMINE performance parameters of IC Engines and emission control.	2 & 5	Understand & Evaluate
5	EXPLAIN working of various IC Engine systems and use of alternative fuels.	2 & 5	Understand & Evaluate
6	CALCULATE performance of single and multi stage reciprocating compressors and DISCUSS rotary positive displacement compressors	5	Evaluate

Name of staff: Mr. D. A. Baitule
 Name of Subject: Fluid Mechanics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	DETERMINE various properties of fluid	4	Analyse
2	APPLY the laws of fluid statics and concepts of buoyancy	3	Apply
3	IDENTIFY types of fluid flow and terms associated in fluid kinematics	1	Knowledge
4	APPLY principles of fluid dynamics to laminar flow	1	Knowledge
5	ESTIMATE friction and minor losses in internal flows and DETERMINE boundary layer formation over an external surface	5,3	Evaluate,Apply
6	CONSTRUCT mathematical correlation considering dimensionless parameters, also ABLE to predict the performance of prototype using model laws	6	Create

Name of staff: Mr.M.A.Bhandare
 Name of Subject: Manufacturing Processes

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	SELECT appropriate moulding, core making and melting practice and estimate pouring time, solidification rate and DESIGN riser size and location for sand casting process	3	Apply
2	UNDERSTAND mechanism of metal forming techniques and CALCULATE load required for flat rolling	2 & 5	Understand & Evaluate
3	DEMONSTRATE press working operations and APPLY the basic principles to DESIGN dies and tools for forming and shearing operations	2 & 5	Understand & Evaluate
4	CLASSIFY and EXPLAIN different welding processes and EVALUATE welding characteristics	2 & 5	Understand & Evaluate
5	DIFFERENTIATE thermoplastics and thermosetting and EXPLAIN polymer processing techniques	2 & 5	Understand & Evaluate
6	UNDERSTAND the principle of manufacturing of fibre-reinforce composites and metal matrix composites	5	Evaluate

Mechanical : Third Year Sem : I

Name of staff: Mr.A.C. Shaikh

Name of Subject: Design of Machine Elements-I

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	To identify and understand failure modes for mechanical elements and design of machine elements based on strength.	1, 2 and 6	Knowledge, understand and create
2	To design Shafts, Keys and Coupling for industrial applications.	3,4,5 and 6	Apply, analyze, evaluate and create
3	To design machine elements subjected to fluctuating loads.	3,4,5 and 6	Apply, analyze, evaluate and create
4	To design Power Screws for various applications.	3,4,5 and 6	Apply, analyze, evaluate and create
5	To design fasteners and welded joints subjected to different loading conditions.	3,4,5 and 6	Apply, analyze, evaluate and create
6	To design various Springs for strength and stiffness.	3,4,5 and 6	Apply, analyze, evaluate and create

Name of staff: Mr.D.A Baitule

Name of Subject: Heat Transfer

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Analyze the various modes of heat transfer and implement the basic heat conduction equations for steady one dimensional thermal system.	4,1	Knowledge, Analyse
2	Implement the general heat conduction equation to thermal systems with and without internal heat generation and transient heat conduction.	6,2	Create, Understand
3	Analyze the heat transfer rate in natural and forced convection and evaluate through experimentation investigation.	4	Analyse
4	Interpret heat transfer by radiation between objects with simple geometries.	2	Understand
5	Analyze the heat transfer equipment and investigate the performance.	4	Analyse

Name of staff: Name of staff: Mr. D.B.Dukale

Name of Subject: Theory of Machines-II

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Student will be able to understand fundamentals of gear theory which will be the prerequisite for gear design	2,3 &6	Understand , Apply & Create
2	Student will be able to perform force analysis of Spur, Helical, Bevel, Worm and Worm gear	2,3 &6	Understand , Apply & Create
3	The student to analyze speed and torque in epi-cyclic gear trains which will be the prerequisite for gear box design	2,3 &6	Understand , Apply & Create
4	Student will be able to design cam profile for given follower motions and understand cam Jump phenomenon, advance cam curves	2,3 &6	Understand , Apply & Create
5	The student will synthesize a four bar mechanism with analytical and graphical methods	2,3 &6	Understand , Apply & Create
6	a. The student will analyze the gyroscopic couple or effect for stabilization of Ship Aeroplane and Four wheeler vehicle	2,3 &6	Understand , Apply & Create
	b. Student will choose appropriate drive for given application (stepped / step-less)		

Name of staff: Mr. D.D. Kumbhkarna

Name of Subject: Turbo Machines

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Apply thermodynamics and kinematics principles to turbo machines	5 & 6	Evaluate & Create
2	Analyze the performance of turbo machines	5 & 6	Evaluate & Create
3	Ability to select turbo machine for given application	5 & 6	Evaluate & Create
4	Predict performance of turbo machine using model analysis	5 & 6	Evaluate & Create
5	Study the Centrifugal Pumps	1	Knowledge
6	Study the Centrifugal & Axial Compressor	1	Knowledge

Name of staff: Mr. M.A.Bhandare

Name of Subject: Metrology and Quality Control

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand the methods of measurement, selection of measuring instruments / standards of measurement, carryout data collection and its analysis	2,3 &6	Understand , Apply & Create
2	Explain tolerance, limits of size, fits, geometric and position tolerances and gauge design	2,3 &6	Understand , Apply & Create
3	Understand and use/apply Quality Control Techniques/ Statistical Tools appropriately	2,3 &6	Understand , Apply & Create
4	Develop an ability of problem solving and decision making by identifying and analyzing the cause for variation and recommend suitable corrective actions for quality improvement	2,3 &6	Understand , Apply & Create
5	Study Statistical quality control	1	Knowledge
6	Study Total Quality Management	1	Knowledge

Mechanical : Third Year Sem : II

Name of staff: Mr K. M. Kulkarni

Name of Subject: Numerical Method and Optimization

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Use appropriate Numerical Methods to solve complex mechanical engineering problems.	2,3,5 & 6	Understand, Apply, Evaluate & Create
2	Formulate algorithms and programming.	2,3,5 & 6	Understand, Apply, Evaluate & Create
3	Use Mathematical Solver.	2,3,5 & 6	Understand, Apply, Evaluate & Create
4	Generate Solutions for real life problem using optimization techniques.	2,3,5 & 6	Understand, Apply, Evaluate & Create
5	Analyze the research problem	2,3,5 & 6	Understand, Apply, Evaluate & Create
6	Generate Solutions for Numerical Integration	2,3,5 & 6	Understand, Apply, Evaluate & Create

Name of staff: Mr.A.C. Shaikh

Name of Subject: Design of Machine Element II

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	To understand and apply principles of gear design to spur gears and industrial spur gear boxes.	2,3 & 6	Understand , Apply & Create
2	To become proficient in Design of Helical and Bevel Gear.	3,4,5 and 6	Apply, analyze, evaluate and create
3	To develop capability to analyse Rolling contact bearing and its selection from manufacturer's Catalogue.	3,4,5 and 6	Apply, analyze, evaluate and create
4	To learn a skill to design worm gear box for various industrial applications.	3,4,5 and 6	Apply, analyze, evaluate and create
5	To inculcate an ability to design belt drives and selection of belt, rope and chain drives.	3,4,5 and 6	Apply, analyze, evaluate and create
6	To achieve an expertise in design of Sliding contact bearing in industrial applications.	3,4,5 and 6	Apply, analyze, evaluate and create

Name of staff: Mr.D.A Baitule

Name of Subject: Refrigeration and Air Conditioning

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Illustrate the fundamental principles and applications of refrigeration and air conditioning system	1,4	Knowledge, Analyse
2	Obtain cooling capacity and coefficient of performance by conducting test on vapour compression refrigeration systems	2,6	Create, Understand
3	Present the properties, applications and environmental issues of different refrigerants	2	Understand
4	Calculate cooling load for air conditioning systems used for various	3,4	Analyse,Apply
5	Operate and analyze the refrigeration and air conditioning systems.	6	Create

Name of staff: Mr.M.N.Chandan

Name of Subject: Mechatronics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	CO1. DEFINE key elements of mechatronics, principle of sensor and its characteristics.	1	Knowledge
2	CO2. UTILIZE concept of signal processing and MAKE use of interfacing systems such as ADC, DAC, and Digital I/O.	3	Apply
3	CO3. DETERMINE the transfer function by using block diagram reduction technique.	1	Knowledge
4	CO4. EVALUATE Poles and Zero, frequency domain parameter for mathematical modeling for mechanical system.	4	Analyse
5	CO5. APPLY the concept of different controller modes to an industrial application.	4	Analyse
6	CO6. DEVELOP the ladder programming for industrial application.	2,6	Understand ,Apply

Mechanical : Final Year Sem : I

Name of staff: Mr. M. N. Chandan

Name of Subject: Hydraulics & Pneumatics

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand working principle of components used in hydraulic & pneumatic systems	2	Understand
2	Identify various applications of hydraulic & pneumatic systems	1	Knowledge
3	Selection of appropriate components required for hydraulic and pneumatic systems	3	Apply
4	Analyse hydraulic and pneumatic systems for industrial/mobile applications	4	Analyse
5	Design a system according to the requirements	6	Design
6	Develop and apply knowledge to various applications	3 and 6	Apply and Design

Name of staff: Mr. K. M. Kulkarni

Name of Subject: CAD/CAM & Automation

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Apply homogeneous transformation matrix for geometrical transformations of 2D CAD entities for basic geometric transformations	4 & 5	Analyze & Evaluate
2	Use analytical and synthetic curves and surfaces in part modeling	4 , 5 & 6	Analyze , Evaluate & Create
3	Do real times analysis of simple mechanical elements like beams, trusses, etc. and comment on safety of engineering components using analysis software	4 , 5 & 6	Analyze , Evaluate & Create
4	Generate CNC program for Turning / Milling and generate tool path using CAM software	2	Understand
5	Demonstrate understanding of various rapid manufacturing techniques and develop competency in designing and developing products using rapid manufacturing technology	1	Knowledge
6	Understand the robot systems and their applications in manufacturing industries	1	Knowledge

Name of staff: Mr. V. D. Kolate

Name of Subject: Dynamics of Machinery

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Apply balancing technique for static and dynamic balancing of multi cylinder inline and radial engines.	3	Apply
2	Estimate natural frequency for single DOF undamped & damped free vibratory systems.	3	Estimate
3	Determine response to forced vibrations due to harmonic excitation, base excitation and excitation due to unbalance forces.	3	Determine
4	Estimate natural frequencies, mode shapes for 2 DOF undamped free longitudinal and torsional vibratory systems.	3	Estimate
5	Describe vibration measuring instruments for industrial / real life applications along with suitable method for vibration control.	2	Describe
6	Explain noise, its measurement & noise reduction techniques for industry and day today life problems.	2	Explain

Name of staff: Mr. N. R. Patil

Name of Subject: Heating Ventilation & Air Conditioning

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Determine the performance parameters of trans-critical & ejector refrigeration systems	3	Estimate
2	Estimate thermal performance of compressor, evaporator, condenser and cooling tower.	3	Estimate
3	Describe refrigerant piping design, capacity & safety controls and balancing of vapour compressor system.	2	Describe
4	Explain importance of indoor and outdoor design conditions, IAQ, ventilation and air distribution system.	2	Explain
5	Estimate heat transmission through building walls using CLTD and decrement factor & time lag methods with energy-efficient and cost-effective measures for building envelope.	4,5,6	Analyze , Evaluate & Create
6	Estimate heat transmission through building walls using CLTD and decrement factor & time lag methods with energy-efficient and cost-effective measures for building envelope.	4,5,6	Analyze , Evaluate & Create

Name of staff: Mr. K. P. Pawar

Name of Subject: Automobile Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	To compare and select the proper automotive system for the vehicle.	2	compare
2	To analyse the performance of the vehicle.	4	analyse
3	To diagnose the faults of automobile vehicles.	3	diagnose
4	To apply the knowledge of EVs, HEVs and solar vehicles	3	apply

Mechanical : Final Year Sem : II

Name of staff: Mr. D. A. Baitule

Energy Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Describe the power generation scenario, the layout components of thermal power plant and analyze the improved Rankin cycle, Cogeneration cycle	1,4	Knowledge, Analyse
2	Analyze the steam condensers, recognize the an environmental impacts of thermal power plant and method to control the same	4	Analyse
3	Recognize the layout, component details of hydroelectric power plant and nuclear power plant	2	Understand
4	Realize the details of diesel power plant, gas power plant and analyze gas turbine power cycle	2	Understand
5	Emphasize the fundamentals of non-conventional power plants	4,2	Analyse
6	Describe the different power plant electrical instruments and basic principles of economics of power generation.	1,4	Knowledge, Analyse

Name of staff: Mr.V.D.Kolate

Name of Subject: Mechanical System Design

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Understand the difference between component level design and system level design	2	Understand
2	Design of mechanical systems pressure vessels for the specifications stated/formulated.	6	Design / Creating
3	Design of mechanical systems machine tool gear boxes for the specifications stated/formulated.	6	Design / Creating
4	Design of mechanical systems material handling systems for the specifications stated/formulated.	6	Design / Creating
5	Learn optimum design principles and apply it to mechanical components	1,3	Learn, Apply
6	Handle system level projects from concept to product	1-6	Remebering to Creating

Name of staff: Mr.M.A.Bhandare

Name of Subject: Industrial Engineering

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Apply the Industrial Engineering concept	3	Apply
2	Understand, analyze and implement different concepts involved in method study	1 & 2	Knowledge & Understand
3	Design and Develop different aspects of work system and facilities	1 & 6	Knowledge & Create
4	Understand and Apply Industrial safety standards, financial management practices	1 & 2	Knowledge & Understand
5	Undertake project work based on modeling & simulation area	1 & 6	Knowledge & Create
6	Study Engineering Economy, Human Resource and Industrial Safety	1	Knowledge

Name of staff: Mr.N.R.Patil

Name of Subject: Advanced Manufacturing Process

Sr. No.	Course Outcomes	Blooms Taxonomy	
		Level	Descriptor
1	Classify and analyze special forming processes	2,3	Classify and analyze
2	Analyze and identify applicability of advanced joining processes	2,3	Analyze and identify
3	Understand and analyze the basic mechanisms of hybrid non-conventional machining techniques	2,3	Understand and analyze
4	Select appropriate micro and nano fabrication techniques for engineering applications	2	Select appropriate micro
5	Understand and apply various additive manufacturing technology for product development	1,2	Understand and apply
6	Understand material characterization techniques to analyze effects of chemical composition, composition variation, crystal structure, etc.	1	Understand