



BHARATI VIDYAPEETH'S

COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Engineering Physics

Course Outcomes:

At the end of successful completion of the course, the student will be able to

1. Explain the concepts of diffraction and polarization for engineering applications.
2. Explain basics of lasers and optical fibers and their use in some applications.
3. Illustrate the basic requirement of acoustical good hall and solve problems on Sabine's formula.
4. Apply the knowledge of Quantum Mechanics to solve related problem.
5. Apply peculiar properties of crystallography to solve engineering problems.
6. Comprehend use of concepts of physics and some properties of nanomaterials and their application.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I

Course Name: Engineering Mathematics-I

Course Outcomes (CO'S):

After completion of this course Students will be able to:

1. Calculate roots of complex numbers, separation into real and imaginary parts of complex numbers by using De-Moivre's Theorem.
2. Apply Taylor's and Maclaurin's series to find expansion of functions.
3. Find partial derivatives and use it to find Maxima and minima, Jacobian.
4. Solve the system of linear equations by using matrix method.
5. Calculate Eigen values and Eigen vectors of matrix and higher powers of matrix using Cayley Hamilton theorem.
6. Solve linear simultaneous equations by using numerical methods.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Basic Electrical Engineering

Course Outcomes:

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

1. Analyze and solve basic DC circuits using Ohm's and Kirchoff's laws.
2. Compare and analyze electric and magnetic circuits.
3. Analyze single-phase AC circuits and calculate power and resonance.
4. Analyze 3-phase Star/Delta circuits.
5. Explain single phase transformer and single phase motor.
6. Describe Earthing, Protection devices and Batteries.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Basic Civil Engineering

Course Outcomes (CO's):

At the end of the course, the students will be able to:

1. Explain the role of Civil Engineers in infrastructure development.
2. Identify and explain the various building components, construction materials, and services.
3. Apply the linear, angular measurement and levelling techniques.
4. Explain the components and need of water supply, drainage, and hydraulic systems.
5. Describe the modes of transport, types and structure of road.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Engineering Graphics

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

1. Draw the neat drawings of Engineering Curves.
2. Understand the Projection of Point, Straight lines, Plane.
3. Understand the Projection of Solids.
4. Construct neat Sketch of Orthographic Projection.
5. Construct neat Sketch of Isometric Drawings.
6. Develop lateral surfaces of solid cut sections and their projections.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I

Course Name: Professional Communication-I

Course Outcomes (COs):

At the end of successful completion of the course, the student will be able to:

1. Communicate effectively in various formal and informal situations minimizing the barriers.
2. Construct grammatically correct sentences and use contextual words in English.
3. Use phonetically transcription to pronounce words correctly.
4. Use different formats of formal written skills.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Engineering Chemistry

Course Outcomes (COs):

At the end of successful completion of the course, the student will be able to:

1. Select the properties of metallic and advanced material.
2. Explain the basic principles of instrumental methods for chemical Analysis.
3. Select water treatment process to solve engineering problem.
4. Make use of relevant fuel in engineering application.
5. Make use of corrosion preventive method.
6. Use various types of polymers in engineering field.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: II

Course Name: Engineering Mathematics II

Course Outcomes:

After completion of this course Students will be able to:

1. Solve ordinary differential equations of first order and first degree.
2. Apply Ordinary differential equation of first order and first degree to solve simple electric circuit problems, Newton's law of cooling and find orthogonal trajectories of given curves.
3. Solve ordinary differential equations of first order and first degree numerically.
4. Find Numerical Solutions of Algebraic and Transcendental Equations.
5. Evaluate definite integrals by using special functions.
6. Evaluate double integrals and use it to find area enclosed by plane curves, mass of plane lamina.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Basic Electronics Engineering

Course Outcomes:

After the completion of the course the student should be able to:

1. Understand passive semiconductor devices applications.
2. Understand active semiconductor devices applications.
3. Analyze different biasing circuits and low frequency response of an amplifier.
4. Gain knowledge about fundamentals of Operational amplifiers and various applications.
5. Apply fundamental techniques of digital design.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Basic Mechanical Engineering

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

1. Understand the basic concepts of thermodynamics and I.C. Engine.
2. Understand principle of energy conversion system and power plants.
3. Understand and identify power transmission devices with their functions.
4. Identify and elaborate different mechanisms and mobility systems.
5. Identify and elaborate different manufacturing process.
6. Describe the scope of mechanical engineering in multidisciplinary industries.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I & II

Course Name: Engineering Mechanics

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

1. Identify and explain different types of force systems and laws of forces.
2. Analyze and draw the free body diagram of objects and determine the support reactions of determinate beams using conditions of Equilibrium.
3. Analyze the motion of particle or object to solve the problems of rectilinear and projectile motions in kinematics
4. Apply the concepts of Newton's laws of motion, D'Alembert's principles to solve problems related in dynamics.
5. Explain the concepts of stress-strain and engineering properties of materials.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: I

Course Name: National Service Scheme (NSS)

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

1. Understand the community in which they work and relation to
Community.
2. Identify the needs & problems of the Community and involve them in problem solving process.
3. Develop capacity to meet emergencies and natural disasters.
4. Acquire leadership qualities and democratic attitude.
5. Practice national integration and social harmony.
6. Utilize their knowledge in finding practical solutions to individual and community problems.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1, SEM: I

Course Name: Skill Enhancement Course-I

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

Mechanical Engineering Group

1. Describe the methods, operations and processes used in Smithy, fitting, Plumbing.
2. Use the techniques, skills, and modern engineering tools necessary in fitting, smithy and plumbing operations.

Civil Engineering Group

1. Study of different building materials and drawings.
2. Use surveying equipment's to measure distance and levels.

Electrical Engineering Group

1. Understand the electrical tools and equipment's/components.
2. Utilize the know-how of basic electrical concepts in wiring installation.

Computer Science and Engineering Group

1. Understand Basics of Computer Engineering.
2. Apply skills to analyze I/O devices.

Electronics and Telecommunication Engineering Group.

1. Use the different commands, functions, arrays required for programming in MATLAB.
2. Apply the knowledge of programming to plot graph and write program for simple applications.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1, SEM: I

Course Name: Programming Languages-I

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

1. Understand basic Programming concepts.
2. Design C Programs using various Operators.
3. Apply programming logic using Conditional and looping statements in C.
4. Understand fundamentals of Arrays and Strings in C.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1,

SEM: II

Course Name: Professional Communication–II

Course Outcomes (COs):

At the end of successful completion of the course, the student will be able to:

1. Construct Technical paragraph writing.
2. Understand the role of behavioral skills in career building.
3. Deliver presentation effectively.
4. Develop expected career skills.



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COLLEGE OF ENGINEERING, KOLHAPUR

Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1, SEM: II

Course Name: Skill Enhancement Course-II

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

Mechanical Engineering Group

1. Understand report of procedures followed for a given task in welding, carpentry, and sheet metal work.
2. Learn the techniques, skills, and modern engineering tools necessary for welding, carpentry and sheet metal work.

Civil Engineering Group

1. Demonstrate identification and reading ability of elements in building drawing.
2. Use surveying equipment's to measure distance and levels.

Electrical Engineering Group

1. Demonstrate the knowledge of theorems/laws to analyze the simple electrical circuits.
2. Apply the knowledge of RL and RLC circuits for the measurement of active and reactive power.

Computer Science and Engineering Group

1. Understand Basics of Computer Engineering.
2. Apply skills to analyze memory hierarchy and compilers.

Electronics and Telecommunication Engineering Group.

1. Use proper soldering technique, fault finding in circuit board components connection.
2. Apply skills to simulate a simple electronics circuit and design a printed circuit board.



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Name of Department: General Engineering: (F.Y. B. Tech) NEP2.1, SEM: II

Course Name: Indian Knowledge Systems (IKS)

Course Outcomes:

At the end of successful completion of the course, the student will be able to:

1. Understand the concept of the Indian Knowledge System and its importance.
2. Understand the relevance of Traditional knowledge in different domains.