



TSSM's
Padmabhooshan Vasantdada Patil Institute of Technology, Bavdhan, Pune-21

Course Outcome

Department of First Year Engineering:

Semester –I

CO of the Course “Engineering Mathematics-I”

- CO1 Explain the solution of system of linear equations by matrix method, orthogonality of linear transformation and Eigen values, Eigen vectors, essential in various engineering problems.
- CO2 Explain the solution of algebraic equation by De-Moivre's theorem and separate functions of complex variable into real and imaginary parts.
- CO3 Explain convergence and divergence of an infinite series and find n^{th} derivative of product of functions by Leibnitz's theorem.
- CO4 Find Taylor's and Maclaurian series expansion of differentiable functions and evaluate the limit of indeterminate forms using L'Hospital Rule
- CO5 Find Partial and Total derivative of functions of several variables.
- CO6 Apply the concept of Partial and Total derivative to find stationary values, error and approximate values of function. Also, examine functional dependency by Jacobian.

CO of the Course “Engineering Physics”

- CO1 To Explain the basic concept to resolve many engineering and technological problem.
- CO2 To utilize different methodologies to analyze problems in engineering.
- CO3 To Utilize different techniques for measurement, calculation, control and analysis of engineering problems.
- CO4 To apply knowledge of physics for recent trends and advances in technological development.
- CO5 To explain physical properties of different materials over micro and nanoscale level.



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- CO6 To apply basic knowledge of physics for developing mathematical and analytical abilities to solve engineering problems with high precision.

CO of the Course “Engineering Chemistry”

- CO1 Student will be able to apply different methodologies for analysis of water, techniques for softening of water and concept of green chemistry in synthesis of various chemical compounds.
- CO2 Student will be able to utilize analytical methods for analysis of various chemical compounds.
- CO3 Student will be able to identify different types of polymer, their preparation methods, properties and applications in various fields.
- CO4 Student will be able to analyze quality of fossil and derived fuels on the basis of their composition.
- CO5 Student will be able to explain the importance of carbon and hydrogen compounds in the development of modern technologies.
- CO6 Student will be able to explain causes for corrosion and its preventive methods.

CO of the Course “Basic Civil and Environmental Engineering”

- CO1 **To understand role of civil engineers in different areas of civil engineering with interdisciplinary approach.**
- CO2 To study different construction materials and components of a structure.
- CO3 To study different types of maps and modern surveying tools and techniques.
- CO4 To understand concept of environment and the role of civil engineers in sustainable development.
- CO5 To study various principles of building planning and concept of green building.
- CO6 To classify energy and environmental pollution.



Course Outcome

CO of the Course “Basic Electronics Engineering”

- CO1 Describe electronic circuits like rectifier, filter, voltage regulator, clipper, clamper.
- CO2 Explain the concept of biasing, configuration and application of BJT.
- CO3 Summarize parameters and applications of operational amplifier.
- CO4 Discuss logic gates and its applications.
- CO5 Describe and differentiate various power devices and transducers.
- CO6 Discuss importance of electronic communication system with different transmission media and modulation techniques such as AM and FM.

CO of the Course “Basic Electrical Engineering”

- CO1 Demonstrate and measurement of resistance with the variation of temperature, importance of insulation resistance, classification and evaluation of energy consumption through energy conversion.
- CO2 Summarize the fundamentals of electromagnetism, compare electrical and magnetic circuit, and make use of magnetic circuit concepts to solve the numerical.
- CO3 Apply the concepts of electromagnetic induction to analyze the principle of transformer and summarize the concepts of electrostatics.
- CO4 Extend the concept of electromagnetic induction for generation of ac and its representation for practical analysis of ac circuits
- CO5 Illustrate the concepts of single and three phase ac circuits along with the phasor diagrams.



Course Outcome

- CO6 Simplify the networks and provide the solution by applying Kirchhoff's laws and theorems

CO of the Course "Engineering Graphics"

- CO1 Identify reference, principal, auxiliary planes and utilize fundamentals of engineering drawing to draw and interpret projection of lines.
- CO2 Apply concept of reference and auxiliary plane method for projection of different shapes of planes.
- CO3 Apply concepts of projections to draw the projections of solids resting on horizontal planes.
- CO4 Apply basics of engineering drawing to draw various types of engineering curves and development of lateral surfaces of solids.
- CO5 Identify and draw orthographic views of given pictorial view.
- CO6 Perceive two dimensional engineering drawings for imagining and constructing three dimensional engineering drawing.

CO of the Course "Fundamentals of Programming Language-I"

- CO1 Explain Fundamentals of computer, open source operating system, software development life cycle and use of different program planning tools.
- CO2 Illustrate basics of C programming language.
- CO3 Design and develop programs using control structures and pointers.
- CO4 Design and develop program using advanced 'C' concepts.



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Course Outcome

Semester –II

CO of the Course “Engineering Mathematics-II”

- CO1 Understand the concept of differential equation and various methods of solution of first order first degree Differential equation.
- CO2 Modeling and evaluation of various physical system: Newton’s law of cooling, Electrical circuits, rectilinear motion, mass spring system, heat transfer etc.
- CO3 To find Fourier series of continuous and discrete system and to evaluate integrals using advanced techniques such as reduction formulae.
- CO4 To evaluate integrals using advanced techniques such as Beta-Gamma function and Error function and trace the approximate shape of curves and measure the arc length of various Curves
- CO5 Find equation of sphere, cone and Cylinder.
- CO6 Find area, volume, mean and RMS values, mass, moment of inertia and centre of gravity using multiple integrals.

CO of the Course “Engineering Mechanics”

- CO1 Able to classify & analyze the force system.
- CO2 Able to find the position of C.G. & centroid of various geometrical figures.
- CO3 Able to analyze rectilinear & curvilinear motions with constant & variable acceleration & its applications.
- CO4 Able to apply equilibrium equations for co-planar & non-coplanar forces.
- CO5 Able to analyze various two force members & to apply coulombs law of friction to various engineering problems.



Course Outcome

CO of the Course “Fundamentals of Programming Language-II”

- CO1 Design program involving structure and union.
- CO2 Apply the concept of OOPs in data structure.
- CO3 Built webpage using HTML.
- CO4 Use modern engineering tool to develop Android app.
- CO5 Develop skill to program for embedded system.

CO of the Course “Basic Mechanical Engineering”

- CO1 To acquire the knowledge of mechanical engineering.
- CO2 Identify the scope of mechanical engineering with multi disciplinary industries.
- CO3 Identify the common machine elements with their functions and applications
- CO4 To evaluate the concept of design and steps involved in design process
- CO5 To identify different manufacturing processes.
- CO6 To specify conventional machine tools and identify basic operations on the machines.
- CO7 To know the basic concepts of thermodynamics applied to industrial applications.
- CO8 To know laying principles of energy conservation and conversion of energy.
- CO9 To identify different power producing devices and power consuming devices.