

Mahatma Education Society's

Pillai HOC College of Engineering and Technology, Rasayani

Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEC101

Course Name: Engineering Mathematics-I

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC101.1	Illustrate the basic concepts of Complex numbers.
FEC101.2	Apply the knowledge of complex numbers to solve problems in hyperbolic functions and logarithmic function.
FEC101.3	Illustrate the basic principles of Partial differentiation.
FEC101.4	Illustrate the knowledge of Maxima, Minima and Successive differentiation.
FEC101.5	Apply principles of basic operations of matrices, rank and echelon form of matrices to solve simultaneous equations.
FEC101.6	Illustrate SCILAB programming techniques to the solution of linear and simultaneous algebraic equations.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEC102

Course Name: Engineering Physics-I

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC102.1	Illustrate the fundamentals of quantum mechanics and its application.
FEC102.2	Illustrate the knowledge of crystal planes, X-ray diffraction and its application.
FEC102.3	Illustrate the knowledge of Fermi level in semiconductors and applications of semiconductors in electronic devices.
FEC102.4	Illustrate the knowledge of interference in thin films and its various applications.
FEC102.5	Illustrate the basic knowledge of superconductors and super capacitors.
FEC102.6	Illustrate the knowledge of engineering materials and applications.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEC301

Course Name: Engineering Chemistry-I

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC103.1	Explain the concept of microscopic chemistry in terms of atomic and molecular orbital theory and relate it to diatomic molecules.
FEC103.2	Describe the concept of aromaticity and interpret it with relation to specific aromatic systems.
FEC103.3	Illustrate the knowledge of various types of intermolecular forces and relate it to real gases.
FEC103.4	Interpret various phase transformations using thermodynamics.
FEC103.5	Illustrate the knowledge of polymers, fabrication methods, conducting polymers in various industrial fields.
FEC103.6	Analyze the quality of water and suggest suitable methods of treatment.

Pillai HOC College of Engineering and Technology, Rasayani

Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEC104

Course Name: Engineering Mechanics

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC104.1	Illustrate the concept of force, moment and apply the same along with the concept of equilibrium in two and three dimensional systems with the help of free body diagram.
FEC104.2	Demonstrate the understanding of centroid and its significance and locate the same.
FEC104.3	Correlate real life applications to specific type of friction and estimate required force to overcome friction
FEC104.4	Establish relation between displacement, velocity and acceleration of a particle and analyse the motion by plotting the relation.
FEC104.5	Illustrate different types of motions and establish Kinematic relations for rigid body
FEC104.6	Analyse particales in motion using force and acceleration, work-energy, impulse-momentum principles.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEC105

Course Name: Basic Electrical Engineering

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC105.1	Apply various network theorems to determine circuit response / behaviour.
FEC105.2	Evaluate and analyse single phase circuits.
FEC105.3	Evaluate and analyse three phase AC circuits.
FEC105.4	Understand the constructional features and operation of single phase transformer.
FEC105.5	Illustrate the working principle of three phase machine.
FEC105.6	Illustrate the working principle of single phase machine.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEL101

Course Name: Engineering Physics-I

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL101.1	Illustrate the basic concepts of Complex numbers.
FEL101.2	Apply the knowledge of complex numbers to solve problems in hyperbolic functions and logarithmic function.
FEL101.3	Illustrate the basic principles of Partial differentiation.
FEL101.4	Illustrate the knowledge of Maxima, Minima and Successive differentiation.

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Pillai HOC College of Engineering and Technology, Rasayani

Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEL102

Course Name: Engineering Chemistry-I

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL102.1	Determine Chloride content and hardness of water sample.
FEL102.2	Determine free acid pH of different solutions.
FEL102.3	Determine metal ion concentration.
FEL102.4	Synthesize polymers, biodegradable plastics.
FEL102.5	Determine Viscosity of oil.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEL103

Course Name: Engineering Mechanics

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL103.1	Verify equations of equilibrium of coplanar concurrent force system
FEL103.2	Verify Law of Moment or varignon's theorem
FEL103.3	Find support reactions of beam
FEL103.4	Evaluate coefficient of friction between the different surfaces in contact
FEL103.5	Demonstrate the types of collision/impact and determine corresponding coefficient of restitution

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEL104

Course Name: Basic Electrical Engineering

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL104.1	Apply various network theorems to determine circuit response / behaviour.
FEL104.2	Evaluate and analyse three phase AC circuits.
FEL104.3	Understand the constructional features and operation of single phase transformer.
FEL104.4	Illustrate the working principle of single phase DC machine.

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Pillai HOC College of Engineering and Technology, Rasayani

Department of Applied Sciences and Humanities

Class / Sem: F.E. / I

Course Code: FEL105

Course Name: Basic Workshop practice-I

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL105.1	Develop the necessary skill required to handle/use different fitting tools
FEL105.2	Develop skill required for hardware maintenance
FEL105.3	install an operating system and system drives'
FEL105.4	identify the network components and perform basic networking and crimping'
FEL105.5	prepare the edges of jobs and do simple arc welding
FEL105.6	Develop the necessary, skill required to handle use different plumping tools''
FEL105.7	Demonstrate the turning operation with the help of a simple job

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Pillai HOC College of Engineering and Technology, Rasayani

Department of Applied Sciences and Humanities

Class / Sem: F.E. / II

Course Code: FEC201

Course Name: Engineering Mathematics-II

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC201.1	solve various types of First Order differential equation
FEC201.2	solve various types of Higher Order Differential equation
FEC201.3	Illustrate the concepts of Beta and Gamma function, DUIS and rectification.
FEC201.4	Apply the concepts of Double integral
FEC201.5	Apply the concept of Triple integral
FEC201.6	Apply the principles of Numerical Method for solving differential equation and numerical integration analytically and using Scilab also

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / II

Course Code: FEC202

Course Name: Engineering Physics-II

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC202.1	Illustrate the knowledge of diffraction through slits and its applications.
FEC202.2	Illustrate the working principle of various lasers and their applications in different fields, the concepts of optical fibre and its applications in communication system.
FEC202.3	Illustrate the fundamentals of electrodynamics with required mathematical concepts.
FEC202.4	Illustrate the fundamentals of relativity.
FEC202.5	Illustrate the knowledge of synthesis, characterisation and applications of nanomaterials.
FEC202.6	Illustrate the knowledge of working principles of various sensors.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / II

Course Code: FEC203

Course Name: Engineering Chemistry-II

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC203.1	Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques.
FEC203.2	Illustrate the concept of emission spectroscopy and describe the phenomena of Fluorescence and Phosphorescence in relation to it.
FEC203.3	Explain the concept of electrode potential and Nernst theory and relate it to electrochemical cells.
FEC203.4	Identify different types of corrosion and suggest control measures in industries
FEC203.5	Illustrate the principles of green chemistry and study environmental impact.
FEC203.6	Explain the knowledge of determining the quality of fuel and quantify the oxygen required for combustion of fuel.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / II

Course Code: FEC204

Course Name: Engineering Graphics

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC204.1	Apply the basic principles of projections in Projection of Lines and Planes
FEC204.2	Apply the basic principles of projections in Projection of Solids
FEC204.3	Apply the basic principles of sectional views in Section of solids
FEC204.4	Apply the basic principles of projections in converting 3D view to 2D drawing
FEC204.5	Read a given drawing
FEC204.6	Visualize an object from the given two view

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / II

Course Code: FEC205

Course Name: Professional Communication and Ethics- I

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEC205.1	Listen and comprehend all types of spoken discourse successfully.
FEC205.2	Speak fluently and make effective professional presentations.
FEC205.3	Read large quantities of text in a short time to comprehend, summarise and evaluate content.
FEC205.4	Draft precise business letters, academic essays and technical guidelines.
FEC205.5	Dress finely and conduct themselves with panache in social, academic and professional situations.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / II

Course Code: FEL201

Course Name: Engineering Physics-II

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL201.1	Perform the experiments based on diffraction through slits using Laser source and analyze the results.
FEL201.2	Perform the experiments using optical fibre to measure numerical aperture of a given fibre.
FEL201.3	Perform the experiments on various sensors and analyze the result.

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Department of Applied Sciences and Humanities

Class / Sem: F.E. / II

Course Code: FEL202

Course Name: Engineering Chemistry-II

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL202.1	Determine moisture and ash content of coal
FEL202.2	Analyze flue gas
FEL202.3	Determine Saponification and acid value of oil
FEL202.4	Determine flash point of a lubricating oil
FEL202.5	Synthesize a drug and a biofuel.
FEL202.6	Determine Na/K and emf of Cu-Zn system

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Class / Sem: F.E. / II

Course Code: FEL203

Course Name: Engineering Graphics

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL203.1	Apply the basic principles of projections in 2D drawings using a CAD software
FEL203.2	Create, Annotate, Edit and Plot drawings using basic AutoCAD commands and features
FEL203.3	Apply the concepts of layers to create drawing
FEL203.4	Apply basic AutoCAD skills to draw different views of a 3D object
FEL203.5	Apply basic AutoCAD skills to draw the isometric view from the given two views

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Class / Sem: F.E. / II

Course Code: FEL204

Course Name: C programming

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL204.1	Translate given algorithms to a program.
FEL204.2	Correct syntax and logical errors in a program
FEL204.3	Write iterative as well as recursive programs
FEL204.4	Represent data in arrays, strings and structures and manipulate them through a program.
FEL204.5	Declare pointers and demonstrate call by reference concept

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Class / Sem: F.E. / II

Course Code: FEL206

Course Name: Basic Workshop practice-II

The students will be able to:

Course Outcome Code	Course Outcome Statements
FEL206.1	Develop the necessary skill required to handle/use different carpentry tools.
FEL206.2	Identify and understand the safe practices to adopt in electrical environment.
FEL206.3	Demonstrate the wiring practices for the connection of simple electrical load
FEL206.4	Design, fabricate and assemble PCB
FEL206.5	Develop the necessary skill required to handle/use different masons tools
FEL206.6	Develop the necessary skill required to use different sheet metal and brazing tools
FEL206.7	Able to demonstrate the operation, forging with the help of a simple job.