Godavari Foundation's

GODAVARI COLLEGE OF ENGINEERING AND POLYTECHNIC, JALGAON

Estd. 1999

Semester – I

Engineering Mathematics-I (24AF1000BS101)

Course Objectives:

1	To know the application of the matrix technique (Linear algebra) to find solutions of system of linear equations arising in many engineering problems.
2	To know and apply the concept partial derivatives and their applications to Maxima/ Minima, series expansion of multi valued functions.
3	To understand Computation of Jacobian of functions of several variables and their applications to engineering problems.

Course Outcomes:

After completion of this course, students will be able to

CO1	Apply the matrix technique (Linear algebra) to find solutions of system of linear Equations arising in many engineering problems.
CO2	Demonstrate the concept partial derivatives and their applications to Maxima/ Minima, series expansion of multi valued functions.
CO3	Compute Jacobian of functions of several variables and their applications to Engineering problems.
CO4	Identify and sketch of curves in various coordinate system.
CO5	Evaluate multiple integrals and their applications to area and volume.

Engineering Chemistry (24AF1CHEBS102)

Course Objectives:

1	To impart the knowledge of Chemistry in the area of Engineering and Technology
2	To capable the student to explain the importance of chemistry in various fields of Engineering.
3	To identify the concept of Chemistry to lay the ground work for subsequent studies.

Course Outcomes:

It is expected that by the end semester, student will develop the following competencies.

CO1	Students should be able to understand and explain the basic concepts of Water treatment and capable to explain softening processes and water characteristics..
CO2	Students should be able to explain analysis, Calorific value of fuel and explain lubricants, its properties and industrial importance.
CO3	Students should know the concepts of Electrochemistry and its importance.
CO4	Student should be able to understand and explain various instrumental methods of Analysis.
CO5	Student should be able to understand and explain properties and uses of engineering materials such as Cement, Gypsum plaster, Rubber etc.

Engineering Mechanics (24AF1EMES104)

Course Objectives:

1	To understand the resolving forces and moments for a given force system
2	To know and apply Conditions of static equilibrium to analyze given force system.
3	To compute Centre of gravity and Moment of Inertia of plane surfaces.
4	To compute the motion characteristics of a body/particle for a Rectilinear Motion.
5	To know and discuss relation between force and motion characteristics.

Course Outcomes:

Students with be able to:

CO1	Apply fundamental Laws of Engineering Mechanics.
CO2	Apply Conditions ofstatic equilibrium to analyze given force system.
CO3	Compute Centre of gravity and Moment of Inertia of plane surfaces.
CO4	Compute the motion characteristics of a body/particle for a Rectilinear Motion.
CO5	Know and discuss relation between force and motion characteristics.

Programming for Problem Solving (24AF1000ES106)

Course Objectives:

1	To develop logical skills and programming skills to solve basic and advanced computing problems.
2	To learn the c-programming language concepts for problem solving

Course Outcomes:

After completion of this course, students will be able to:

CO1	Gain a broad perspective about the uses of computers in engineering industry and C Programming.
CO2	Understand the use of Types, operators and expressions in programming.
CO3	Apply the knowledge of flow statements and functions for control based computational algorithms.
CO4	Understand the concepts of arrays ad pointers in C.
CO5	Apply the knowledge of structure in OS file management.

Workshop Practices (24AF1000VS108L)

Course Objectives:

1	To impart knowledge and skills to use tools, machines, equipment and measuring instruments
2	To develop general machining skills
3	To educate about safe handling of machines and tools
4	To develop a skill in dignity of labour, precision, safety at workplace, team working and development of right attitude.

Course Outcomes:

CO1	Prepare simple wooden joints and parts using wood working tools and machines
CO2	Apply the fitting and plumbing skills and produce a job with specified dimensions
CO3	Practice sheet metal tools and machine to develop the sheet metal articles
CO4	Practice age preparation for simple Lap, Butt and T joint using arc /gas/Resistance wedding equipment
CO5	Demonstrate machining processes including turning, facing, step turning, drilling and parting.

Communication Skills (24AF1000VS109)

Course Objectives:

1	Groom the students to use correct English
2	Enhance the linguistic abilities with the help of language learning skills LSRW
3	Revision of basic grammar units in English
4	Prepare the students for competitive examinations and the examinations required for higher studies in Indian and foreign universities
5	Ability to develop well-worded communications and resumes
6	Improve listening, note-taking and observational skills

Course Outcomes:

CO1	Students would be more confident while using English
CO2	Engage in analysis of speeches or discourses and several articles
CO3	Identify and control anxiety while delivering speech
CO4	Write appropriate communications(Academic/Business)
CO5	Prepared to take the examinations like GRE/TOFEL/IELTS
CO6	Identify and control the tone while speaking
CO7	Develop the ability to plan and deliver the well-argued presentations

Yoga Education (24AF1000CC111)

Course Objectives:

1	To learn Message of Vedas and Upanishads
2	To learn Four Streams of Yoga,
3	To learn Shaddarshanas or the SIX systems of Indian Philosophy,
4	To understand Life and message of spiritual masters and Indian Culture
5	To understand Anatomy and Physiology, Yoga and Exercise Physiology

Course Outcomes:

After completion of this course, students will be able to:

CO1	Learn Message of Vedas and Upanishads.
CO2	Learn Four Streams of Yoga
CO3	Learn Shaddarshanas or the SIX systems of Indian Philosophy.
CO4	Understand Life and message of spiritual masters and Indian Culture.
CO5	Understand Anatomy and Physiology, Yoga and Exercise Physiology.

Engineering Mathematics-II (24AF1000BS201)

Course Objectives:

1	To know and discuss the need and use of complex variables to find roots, to separate complex quantities, and to establish a relation between circular and hyperbolic functions
2	To understand and solve first and higher-order differential equations and apply them as a mathematical modeling in electric and mechanical systems.
3	To determine Fourier series representation of periodic functions over different intervals.
4	To demonstrate the concept of vector differentiation and interpret the physical and geometrical meaning of gradient, divergence &curl in various engineering streams
5	To know and apply the principles of vector integration to transform line integral to surface integral, surface to volume integral &vice versa using Gree‘s, Stoke‘s and Gauss divergence theorems.

Course Outcomes:

After completion of this course, students will be able to:

CO1	Discuss the need and use of complex variables to find roots, separate complex quantities, and to establish relation between circular and hyperbolic functions..
CO2	Solve first and higher order differential equations and apply them as mathematical modeling in electric and mechanical systems.
CO3	Determine Fourier series representation of periodic functions over different intervals.
CO4	Demonstrate the concept of vector differentiation and interpret the physical and geometrical meaning of gradient, divergence &curl in various engineering streams..
CO5	Apply the principles of vector integration to transform line integral to surface integral, surface to volume integral &vice versa using Green‘s, Stoke‘s and Gauss divergence theorems.

Engineering Physics (24AF2PHYBS202)

Course Objectives:

1	To provide a firm grounding in the basic physics principles and concept to resolve many Engineering and Technological problems.
2	To understand and study the Physics principles behind the developments of engineering materials.

Course Outcomes:

After completion of this course, students will be able to:

CO1	Familiar with the principles of acoustic design of a hall and also methods of production of ultrasonic and its applications in various fields and also understand the concept of dielectric and polarization types.
CO2	Acquire the basic knowledge of interference, polarization. Students are able to understand the light propagation in fibre and use of Laser in Science and Engineering.
CO3	Apply the knowledge of quantum mechanics to set Schrödinger‘s equations
CO4	Understand key principle and application of nuclear physics. Identify planes in crystal and characteristics measurements of cubic system.
CO5	Assimilate wide scope of advanced materials in modern developments and its role in emerging innovating applications.

Engineering Graphics (4AF2EGRES204)

Course Objectives:

1	To prepare you to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
2	To prepare you to communicate effectively
3	To prepare you to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Course Outcomes:

CO1	Understand the basics of engineering graphics and its applications.
CO2	Describe the common terms used in design and drawing.
CO3	Construct the positions of line for given conditions
CO4	Visualize the 2D and 3D views of the object
CO5	Ability to apply orthographic, sectional, auxiliary and isometric view in engineering drawing
CO6	Understand the geometries of development of engineering projects

Basic Electrical and Electronics Engineering (24AF1000ES206L)

Course Objectives:

1	To equip the students with an understanding of the fundamental principles of DC and AC electrical circuits.
2	To introduce the working principles and applications of fundamental electronic devices and circuits.
3	To identify various measurement instruments and their use in electric and electronic measurements.

Course Outcomes:

After completion of this course, students will be able to:

CO1	Apply fundamental concepts and circuit laws to solve simple DC and AC circuits
CO2	Interpret the construction and working of different types of electrical machines
CO3	Analyze building blocks of basic dc power supply.
CO4	Outline the principle of BJT as an amplifier.
CO5	Apply the knowledge of measuring instruments in electronic instrumentation system.

Basic Civil and Mechanical Engineering (24AF2CMEES208)

Course Objectives:

1	To identify various Civil Engineering materials and choose suitable material among various options.
2	To know and apply principles of surveying to solve engineering problem
3	To identify various Civil Engineering structural components and select appropriate structural system among various options
4	To Explain and define various properties of basic thermodynamics, materials and manufacturing processes.
5	To know and discuss the working principle of various power consuming and power developing devices.

Course Outcomes:

Students will be able to:

CO1	Identify various Civil Engineering materials and choose suitable material among various options.
CO2	Apply principles of surveying to solve engineering problem
CO3	Identify various Civil Engineering structural components and select appropriate structural system among various options
CO4	Explain and define various properties of basic thermodynamics, materials and manufacturing processes.
CO5	Know and discuss the working principle of various power consuming and power developing devices

Energy and Environmental Engineering(24AF1EEEES209)

Course Objectives:

1	To impart the knowledge of Environmental education to the students of Engineering and Technology.
2	To explain basic concepts of sources, causes, effects and control measures of environmental pollution.
3	To impart the knowledge of energy sources and power generation
4	To understand the role of individual for the protection of Environment.

Course Outcomes:

Student should able to:

CO1	Know and understand about components and segments of environment, ecosystem and its types
CO2	Understand power consuming and power developing devices for the effective utilization
CO3	Understand and to explain types of Energies such as wind energy, solar energy,

	hydro energy etc.
CO4	Understand and explain various types of air pollution, their effects and control measures.
CO5	Know the various types of water pollution, sources, waste water treatment, effect of water pollution on health and soil pollution

Design Thinking(24AF1000VS211)

Course Objectives:

The objective of this Course is to provide the new ways of creative thinking and Learn the innovation cycle of Design Thinking process for developing innovative products which useful for a student in preparing for an engineering career.

Course Outcomes:

After completion of this course, students will be able to:

CO1	Compare and classify the various learning styles and memory techniques and apply them in their engineering education.
CO2	Analyze emotional experience and Inspect emotional expressions to better understand users while designing innovative products.
CO3	Develop new ways of creative thinking and learn the innovation cycle of Design Thinking process for developing innovative products.
CO4	Propose real-time innovative engineering product designs and Choose appropriate frameworks, strategies, techniques during prototype development.
CO5	Perceive individual differences and its impact on everyday decisions and further create a better customer experience.

Health and Wellness (24AF1000CC212C)

Course Objectives:

1	To systematically addresses the issues of health, adjustment and well-being.
2	To provide insights from the field of psychology to make your life more satisfying and meaningful.

Course Outcomes:

Students will be able to:

CO1	Learn how to deal with mental distress and disorders.
CO2	Understand and enhance positive mental health and wellbeing particularly in the field of psychology.
CO3	Gain happiness and well-being theory and research to enrich the understanding of both negative and positive side of human behavior.

General Meteorology (24AF1000IK210)

Course Objectives:

1	To give an overview of science of meteorology.
2	Be aware of the working of world meteorological organization and different met communications/telecommunication network in India.
3	To make aware of effect of physical geography and earth's interior on meteorology.

Course Outcomes:

Students will be able to:

CO1	Remember various components of world meteorological organizations.
CO2	Understand the met communications, telecommunications network in India and channels used in IAF.
CO3	Understand the effect of physical geography, motions of the earth and on meteorological process.
CO4	Apply the knowledge of earth's interior to analyse the meteorological phenomena.
CO5	Evaluate the measurement of time in prospective of meteorology.