


| | | |
|-----------------------------------------------------------------------------------|-----------------------------------------------------|----------------------|
|  | ASHOKRAO MANE GROUP OF INSTITUTIONS, VATHAR. | |
| | FORMAT | |
| | Doc. No.: AMGOI-ACAD-FRM-11 | Rev. No.: 00 |
| | PAGE 1 of 1 | Rev. Dt.: 05/01/2013 |
| | Course Outcome | |

A.Y. 2018-19

| Subject code | Subject Name |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C101 | Engineering Mathematics-I |
| C101.1 | Develop an ability to find the rank, inverse, Eigen values and Eigen vectors of a matrix and consistency of linear equations using the concepts of rank |
| C101.2 | Find the nth order derivatives of functions, series expansions of functions containing a single variable |
| C101.3 | Find the partial derivatives of functions using ordinary laws of partial differentiation |
| C101.4 | Apply the concepts of partial differentiation to find the percentage error in the measurement of quantities, series expansions and maxima and minima of functions containing two variables |
| C101.5 | Evaluate the double and triple integrals and apply the same to calculate area, volume, surface area, moment of inertia, centre of gravity, etc. |
| C101.6 | Check the ordinary, absolute and conditional convergence of the infinite series by |
| | |
| C102 | Communication Skills |
| C102.1 | Student demonstrates critical and innovative thinking |
| C102.2 | Student displays competence in oral, written, and visual communication by applying communication theories |
| C102.3 | Student uses professional communication skills to utilize the opportunities |
| C102.4 | Responds effectively to cultural communication difference, communicates ethically by demonstrating positive group communication exchanges |
| | |
| C103 | Engineering Physics |
| C103.1 | Explain the production of waves. |
| C103.2 | Describe the terms like interference, polarization, and explain the optical phenomenon in laser and fiber optics. |
| C103.3 | Explain the terms in modern physics for nuclear and quantum physics. |
| C103.4 | Explain the crystal structure. |
| C103.5 | Compare the magnetic and superconducting materials. |
| C103.6 | Classify the different types of materials. |
| | |

| | |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| C104 | Engineering Graphics |
| C104.1 | To draw various geometrical constructions. |
| C104.2 | Explain difference between first angle and third angle method and also able draw orthographic projection by referring pictorial view. |
| C104.3 | Will able to project lines and planes on various principle planes and auxiliary plane. |
| C104.4 | Discuss various types of solids and its projections when it inclined to both planes. |
| C104.5 | Able to draw isometric view by referring orthographic view. |
| C104.6 | Able to draw various sections of solids and developments. |
| | |
| C105 | Basic Civil and Mechanical Engineering |
| C105.1 | Identify various Civil Engineering materials and choose suitable material among various options. |
| C105.2 | Apply principles of surveying to solve engineering problem. |
| C105.3 | Identify various Civil Engineering structural components and select appropriate structural system among various options. |
| C105.4 | Explain and define various properties of basic thermodynamics, materials and manufacturing processes. |
| C105.5 | Know and discuss the working principle of various power consuming and power developing devices. |
| | |
| C106 | Energy and Environment Engineering |
| C106.1 | Develop an ability to understand the power systems with various parts. |
| C106.2 | Apply the knowledge of power plants and their use in actual practice. |
| C106.3 | Apply the knowledge & Techniques for Safety & Power conservations. |
| C106.4 | Apply the concepts of Environmental saving techniques for social betterments. |
| C106.5 | To decide & recommend the use of power plant as per the load and energy sources available. |
| | |
| C107 | Communication Skills Laboratory |
| C107.1 | Student demonstrates critical and innovative thinking |
| C107.2 | Student displays competence in oral, written, and visual communication by applying communication theories |
| C107.3 | Student uses professional communication skills to utilize the opportunities |
| C107.4 | Responds effectively to cultural communication difference, communicates ethically by demonstrating positive group communication exchanges |
| | |
| C108 | Engineering Physics Laboratory |
| C108.1 | Explain the production of waves. |
| C108.2 | Describe the terms like interference, polarization, and explain the optical phenomenon in laser and fiber optics. |

| | |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C108.3 | Explain the terms in modern physics for nuclear and quantum physics. |
| C108.4 | Explain the crystal structure. |
| C108.5 | Compare the magnetic and superconducting materials. |
| C108.6 | Classify the different types of materials. |
| | |
| C109 | Engineering Graphics Laboratory |
| C109.1 | To draw various geometrical constructions. |
| C109.2 | Explain difference between first angle and third angle method and also able draw orthographic projection by referring pictorial view. |
| C109.3 | Will able to project lines and planes on various principle planes and auxiliary plane. |
| C109.4 | Discuss various types of solids and its projections when it inclined to both planes. |
| C109.5 | Able to draw isometric view by referring orthographic view. |
| C109.6 | Able to draw various sections of solids and developments. |
| | |
| C110 | Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in first semester and second Semester or in at one time). |
| C110.1 | At the end of the Industrial Training , students should be able to improve their knowledge and skills |
| C110.2 | relevant to their areas of specialization and at the same time able to relate, apply and adapt relevant knowledge, concepts and theories within an industrial organization, practice and ethics. |
| C110.3 | Capability to acquire and apply fundamental principles of engineering. |
| C110.4 | Knack to be a multi-skilled engineer with good technical knowledge, management, leadership and entrepreneurship skills. |
| C110.5 | Ability to identify, formulate and model problems and find engineering solution based on a systems approach |
| C110.6 | Capability and enthusiasm for self-improvement through continuous professional development and life-long learning |
| C110.7 | Awareness of the social, cultural, global and environmental responsibility as an engineer |
| | |
| C111 | Workshop Practices |
| C111.1 | Discuss safety precautions, measuring instrument working and materials used in industry. |
| C111.2 | Decide the operation sequence, measuring instrument and tools required to prepare various jobs in workshop. |
| C111.3 | Produce jobs in fitting, sheet metal, carpentry and welding as per given drawing. |
| | |
| C112 | Engineering Mathematics-II |
| C112.1 | Comprehend the geometrical meaning and properties of the complex numbers |

| | |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C112.2 | Find the solutions of the differential equations of the first order and first degree, and apply the same to mechanical and electrical systems |
| C112.3 | Find the solutions of linear differential equations with constant coefficients |
| C112.4 | Make the Fourier series expansions of functions in various ranges, and apply the same in harmonic analysis |
| C112.5 | Understand the differentiation of scalar and vector point functions, and apply the same to find components of velocity and acceleration |
| C112.6 | Apply the concepts of gradient of a scalar point function, divergence of a vector point function, curl of a vector point function, line integral, surface integral and volume integral in respect of various problems pertaining to science and engineering |
| | |
| C113 | Engineering Mechanics |
| C113.1 | Use fundamental knowledge to solve problems of mechanics. |
| C113.2 | Solve numerical of mechanics for bodies at rest. |
| C113.3 | Solve numerical of mechanics for bodies in motion. |
| C113.4 | Communicate and document about application and effects of forces. |
| | |
| C114 | Engineering Chemistry |
| C114.1 | Understand and explain the basic concepts of Water treatment and capable to explain softening processes and water Characteristics. |
| C114.2 | Understand and explain the basic concepts of Phase rule and capable to explain Phase diagram of One and Two Component system and their applications. |
| C114.3 | Recognize the concept of Metallurgy and concepts of Electrochemistry and its importance. |
| C114.4 | Classify and explain various types of coals and lubricants, its physical and chemical properties and industrial importance. |
| C114.5 | Understand fundamentals of aromatic and heterocyclic compounds, physical, chemical properties and their industrial uses. |
| C114.6 | Explain Different basic concepts of Electrochemistry. |
| | |
| C115 | Basic Electrical and Electronics Engineering |
| C115.1 | To know and apply basic ideas and principles of electrical engineering. |
| C115.2 | To Identify protection equipment and energy storage devices. |
| C115.3 | To differentiate electrical and electronics domains and explain the operation of diodes and transistors. |
| C115.4 | To acquire knowledge of digital electronics |
| C115.5 | To design simple combinational and sequential logic circuits. |
| | |
| C116 | Mini Project |
| C116.1 | Students will be able to practice acquired knowledge within the chosen area of technology for project development. |
| C116.2 | Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach |

| | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| | |
| C117 | Computer Programming in C |
| C117.1 | To obtain the knowledge of programming |
| C117.2 | To develop program using basic elements like control statements, Array and Strings |
| C117.3 | To solve memory access problems |
| C117.4 | To understand about code reusability with help of user defined functions |
| C117.5 | To study basics of String Handling |
| C117.6 | To develop program for preprocessors |
| | |
| C118 | Engineering Mechanics Laboratory |
| C118.1 | Use fundamental knowledge to solve problems of mechanics. |
| C118.2 | Solve numerical of mechanics for bodies at rest. |
| C118.3 | Solve numerical of mechanics for bodies in motion. |
| C118.4 | Communicate and document about application and effects of forces. |
| | |
| C119 | Engineering Chemistry Laboratory |
| C119.1 | Understand and explain the basic concepts of Water treatment and capable to explain softening processes and water Characteristics. |
| C119.2 | Understand and explain the basic concepts of Phase rule and capable to explain Phase diagram of One and Two Component system and their applications. |
| C119.3 | Recognize the concept of Metallurgy and concepts of Electrochemistry and its importance. |
| C119.4 | Classify and explain various types of coals and lubricants, its physical and chemical properties and industrial importance. |
| C119.5 | Understand fundamentals of aromatic and heterocyclic compounds, physical, chemical properties and their industrial uses. |
| C119.6 | Explain Different basic concepts of Electrochemistry. |
| | |
| C120 | Computer Programming Laboratory |
| C120.1 | To obtain the knowledge of programming |
| C120.2 | To develop program using basic elements like control statements, Array and Strings |
| C120.3 | To solve memory access problems |
| C120.4 | To understand about code reusability with help of user defined functions |
| C120.5 | To study basics of String Handling |
| C120.6 | To develop program for preprocessors |