

	<b>ASHOKRAO MANE GROUP OF INSTITUTIONS, VATHAR.</b>	
	<b>FORMAT</b>	
	Doc. No.: AMGOI-ACAD-FRM-11	Rev. No.: 00
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	<b>Course Outcome</b>	

**A.Y.2019-20**

<b>Subject code</b>	<b>Subject Name</b>
<b>C101</b>	<b>Engineering Mathematics-I</b>
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
<b>C102</b>	<b>Communication Skills</b>
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
<b>C103</b>	<b>Engineering Physics</b>
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.
<b>C104</b>	<b>Engineering Graphics</b>
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.
<b>C105</b>	<b>Basic Civil and Mechanical Engineering</b>
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.
<b>C106</b>	<b>Energy and Environment Engineering</b>
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.
<b>C107</b>	<b>Communication Skills Laboratory</b>
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
<b>C108</b>	<b>Engineering Physics Laboratory</b>
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.

<b>C109</b>	<b>Engineering Graphics Laboratory</b>
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.
<b>C110</b>	<b>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).</b>
C110.1	At the end of the <b>Industrial Training</b> , 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 <b>industrial</b> 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
<b>C111</b>	<b>Workshop Practices</b>
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.
<b>C112</b>	<b>Engineering Mathematics-II</b>
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
<b>C113</b>	<b>Engineering Mechanics</b>
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.
<b>C114</b>	<b>Engineering Chemistry</b>
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.
<b>C115</b>	<b>Basic Electrical and Electronics Engineering</b>
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.
<b>C116</b>	<b>Mini Project</b>
C116.1	Students will be able to practice acquired knowledge within the chosen area of technology for <b>project</b> development.
C116.2	Identify, discuss and justify the technical aspects of the chosen <b>project</b> with a comprehensive and systematic approach
<b>C117</b>	<b>Computer Programming in C</b>
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
<b>C118</b>	<b>Engineering Mechanics Laboratory</b>

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.
<b>C119</b>	<b>Engineering Chemistry Laboratory</b>
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.
<b>C120</b>	<b>Computer Programming Laboratory</b>
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