



KMCT
POLYTECHNIC COLLEGE, KUTTIPPURAM

COURSE OUTCOMES OF REVISION 2021



Course Code: C101

Year of Study: 2021-22

Course Name: COMMUNICATION SKILLS IN ENGLISH

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C101.1	The learners listen to, identify and comprehend the main idea and supporting details of the listening passage.
C101.2	The learners apply different language functions and communicate effectively in the workplace and daily life
C101.3	The learners read, comprehend and analyze the ideas and concepts contained in articles, technical writings and narratives and express them in their own words
C101.4	The learners apply the different techniques of writing and compose technical, documents like reports, emails and so on.

Course Code: C102

Year of Study: 2021-22

Course Name: ENGINEERING MATHEMATICS I

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C102.1	Make use of complex numbers to solve mathematical problems. Extend the use of different forms of equations of straight lines in co-ordinate geometry.
C102.2	Solve mathematical problems related to trigonometry
C102.3	Utilize the concepts related to limits and derivatives to solve problems



C102.4	Apply the concepts of differentiation of composite function, parametric equation, implicit function and successive differentiation to solve mathematical problems..
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Course Code: 103

Year of Study: 2021-22

Course Name: APPLIED PHYSICS I

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C203.1	Apply laws of mechanics in rocket propulsion and recoil of gun.
C203.2	Apply concepts of circular motion and rotational motion
C203.3	Make use the concepts of energy, power, work, temperature and friction to solve problems
C203.4	Use the theorems of fluid dynamics in atomiser and airfoil

Course Code: C104

Year of Study: 2021-22

Course Name: APPLIED CHEMISTRY

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C104.1	Explain atomic structure and chemical bonding
C104.2	Explain atomic structure and chemical bonding
C104.3	Explain various engineering materials for domestic and industrial applications
C104.4	Apply the concept of Electrochemistry and corrosion to solve engineering problems



Course Code: C105

Year of Study: 2021-22

Course Name: ENGINEERING GRAPHICS

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C105.1	Illustrate basic elements of Drawing
C105.2	Construct Projections of points and lines
C105.3	Build Orthographic projections and Sectional views of object
C105.4	Develop Isometric Projections

Course Code: C106

Year of Study: 2021-22

Course Name: APPLIED CHEMISTRY LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C106.1	Quantitatively analyze solutions accurately.
C106.2	Standardize EDTA and analyze the hardness of water
C106.3	Determine the pH of solutions using different techniques
C106.4	Apply the principles of electrochemistry in quantitative analysis.



Course Code: C107

Year of Study: 2021-22

Course Name: INTRODUCTION TO IT SYSTEMS LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C107.1	Utilize the basic functions and features of computer, Operating System and Internet applications.
C107.2	Make use of Stand-alone and Cloud-based office tools to prepare documents, spreadsheets and presentations.
C107.3	Develop algorithms and flowcharts for solving simple problems.
C107.4	Develop Python programs to solve simple problems.

Course Code: C108

Year of Study: 2021-22

Course Name: Sports and Yoga

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C108.1	Apply warming up and warming down exercises in daily physical fitness activities
C108.2	Apply stretching rotation and flexibility exercises in daily physical fitness activities
C108.3	Make use of acquired yoga asanas skill and pranayama method in daily lifestyle
C108.4	Utilize the acquired weight training skills for the development of muscular strength and development. Utilize the acquired skills in playing sports and games.



Course Code: C109

Year of Study: 2021-22

Course Name: MATHEMATICS II

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C108.1	Make use of Determinants and Matrices in finding the solutions of a linear system.
C108.2	Identify the concept of scalar and vector quantities and apply it in engineering problems.
C108.3	Build the concept of integration as the inverse operation of differentiation.
C108.4	Apply integration techniques to solve different engineering problems and differential equations.

Course Code: C110

Year of Study: 2021-22

Course Name: APPLIED PHYSICS-II

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C110.1	Calculate the characteristics of waves.
C110.2	Compute the power of lens.
C110.3	Convert galvanometer into ammeter and voltmeter.
C110.4	Explain the basic principles of semiconductor physics, photoelectric effect, LASER action and nanoscience.



Course Code: C11

Year of Study: 2021-22

Course Name: ENVIRONMENTAL SCIENCE

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C106.1	Explain the ecosystem and terminology involved in it
C106.2	Explain air, water, soil and noise pollution, and control measures and acts.
C106.3	Explain different renewable energy resources and efficient process of harvesting.
C106.4	Explain solid Waste Management, ISO 14000 & Environmental Management and conduct a case study on any one environmental problem / application of sustainable energy resources

Course Code: C112

Year of Study: 2021-22

Course Name:ENGINEERING MECHANICS

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C112.1	Identify the force systems for given conditions by applying the basics of mechanics
C112.2	Apply conditions of static equilibrium to determine unknown force(s) of different structural elements.
C112.3	Solve problems involving rigid bodies by applying the properties of distributed areas and masses.
C112.4	Determine structural behavior of materials under various loading conditions.



Course Code: C113

Year of Study: 2021-22

Course Name: MANUFACTURING TECHNOLOGY

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C113.1	Explain manufacturing process and the relevance of foundry in manufacturing
C113.2	Identify and explain different types of casting and metal working processes.
C113.3	Describe metal joining process and the areas of applications of a particular joining process.
C113.4	Explain the principle and concepts of forging & press working.

Course Code: C114

Year of Study: 2021-22

Course Name: COMMUNICATION SKILLS IN ENGLISH LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C106.1	Use words, phrases and sentences accurately and with correct pronunciation in real life situations.
C106.2	Listens to and comprehends the substance and central idea of simple narratives and descriptions.
C106.3	Use apt language functions while making statements, asking questions, giving instructions, and reporting events.
C106.4	Narrate simple experiences and series of events to convey its essence and intention and present ideas coherently, confidently and with clarity in debates, discussions and interviews.



Course Code: C115

Year of Study: 2021-22

Course Name: APPLIED PHYSICS LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C115.1	Select appropriate measuring tools and make measurements with accuracy and precision.
C115.2	Apply and illustrate the concepts of mechanics and properties of matter through experiments
C115.3	Experiment with lens, prism and glass slab to realize the basic laws of ray optics.
C115.4	Make use of V- I characteristics of conductors and semiconductors to determine the resistance of materials.

Course Code: C116

Year of Study: 2021-22

Course Name: ENGINEERING MECHANICS LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C116.1	Identify the force systems for given conditions by applying the basics of mechanics.
C116.2	Determine unknown forces of different engineering systems.
C116.3	Infer centre of gravity and mass moment of inertia.
C116.4	Determine strains in mutually perpendicular directions under axial tension. Determine the co-efficient of friction on a plane through experimentation



Course Code: C117

Year of Study: 2021-22

Course Name: BASIC CAD LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C117.1	Illustrate the use of computer aided drafting software.
C117.2	Identify various commands used in CAD.
C117.3	Apply knowledge to draw simple two-dimensional drawings and sections using CAD
C117.4	Construct Isometric drawing of simple objects

Course Code: C118

Year of Study: 2021-22

Course Name: ENGINEERING WORKSHOP PRACTICE

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C118.1	Identify the safety precautions, tools and devices required to make carpentry joints
C118.2	Make use of various tools, machines, instruments and power tools used in the Fitting shop to make fitting joints
C118.3	Make use of various tools, machines, instruments and power tools used in the Welding shop to make welding joint.
C118.4	Utilize different sheet metal tools and measuring instruments to make sheet metal joints.
C118.5	Make use of various tools and accessories to practice electrical wiring, motor connection and soldering



Course Code: C201

Year of Study: 2022-23

Course Name: STRENGTH OF MATERIALS

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C201.1	Explain stress and strain values and find the changes in axial, lateral and volumetric dimensions. Find thermal stresses in bodies of uniform section and composite sections.
C201.2	Solve the shear force and bending moment at any section of beam and draw the S.F. & B.M diagrams of UDL and Point loads.
C201.3	Show the deflection of beams, theory of columns and struts.
C201.4	Comparison of solid and hollow shafts, define and solve the stress and deflection of the closed coil helical spring. Illustratethe stresses on thin cylinders.

Course Code: C202

Year of Study: 2022-23

Course Name: MATERIAL SCIENCE AND METROLOGY

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C202.1	Explain crystal structure, classification of engineering materials, types of steels and ferrous alloys
C202.2	Explain the failure and testing of engineering materials and heat treatment processes.
C202.3	Explain the static and dynamic characteristics of measuring instruments and also to make use of various force/torque measurement techniques.
C202.4	Explain the different types of measuring instrument and select suitable measuring device for a particular application and discuss the significance of machine tool inspection/testing.



Course Code: C203

Year of Study: 2022-23

Course Name: MACHINE TOOLS

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C203.1	Describe the concept of mechanics of metal cutting in manufacturing operations and explain lathe machinery, its parts with various operations performed in it.
C203.2	Describe the concept of mechanics of metal cutting in manufacturing operations and explain lathe machinery, its parts with various operations performed in it.
C203.3	Describe the significance of milling, grinding machines (types, parts cutting tools, operations performed) and other super finishing operations.
C203.4	Explain the principle of NC and CNC machines and significance of lubricants/cutting fluids used in machining process.

Course Code: C204

Year of Study: 2022-23

Course Name: FUNDAMENTALS OF ELECTRICAL ENGINEERING

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C204.1	Solve simple electrical circuits using the fundamental concept of circuit parameters and basic laws
C204.2	Explain the working principle of electric motors and their applications in mechanical engineering
C204.3	Illustrate various electric heating and welding equipment used for mechanical manufacturing process
C204.4	Summarize the applications of electronics in mechanical engineering.



Course Code: C205

Year of Study: 2022-23

Course Name: : MACHINE DRAWING

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C205.1	To outline the use and development of fastening devices and its assembly
C205.2	Illustrate tolerances and level of surface finish of machine elements
C205.3	Develop drawings of various machine elements, components and part details
C205.4	Outline and apply the concept and method of developing production drawings.

Course Code: C206

Year of Study: 2022-23

Course Name: MATERIAL TESTING AND METALLOGRAPHY LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C206.1	Apply theoretical knowledge of material testing to conduct tension test on UTM for ductile and brittle material
C206.2	Apply theoretical knowledge of material testing to find out the hardness of various treated and untreated steels using Vickers hardness tester & Brinell hardness tester
C206.3	Apply theoretical knowledge of material testing to conduct Impact test and torsion test
C206.4	To study the Microstructure of Low, Medium & High carbon steels by sample preparation using Disc polishing (fine polishing) and to find cracks in casting by conducting visual inspection, die penetrant test and magnetic particle test (NDT).



Course Code: C207

Year of Study: 2022-23

Course Name: MECHANICAL WORKSHOP III

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C207.1	Perform machining operations on lathe and shaper
C207.2	Apply technical skill to practice fitting operations and use of various gauges
C207.3	Perform fabrication works by making semi- permanent joints in metal sheets and Practice welding operations
C207.4	Apply technical skill to perform smithy and foundry work

Course Code: C208

Year of Study: 2022-23

Course Name: ELECTRICAL AND ELECTRONICS LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C208.1	Select appropriate instruments and methods for measuring voltage, current, resistance and power in a given circuit
C208.2	Develop simple circuits in open conduit system for domestic and motor wiring
C208.3	Compute performance characteristics of AC motor and single-phase transformer using direct loading method
C208.4	Construct rectifier circuits using the knowledge of various electronic components



Course Code: C209

Year of Study: 2022-23

Course Name: ADVANCED CADD LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C209.1	Draw various fastening devices by choosing proper tools in the software.
C209.2	Prepare detailed drawing of a complex component in a fast and effective manner
C209.3	Implement GD&T symbols and surface finish symbols in a CAD drawing.
C209.4	Identify the basic concepts of 3D modeling in a software environmen

Course Code: C210

Year of Study: 2022-23

Course Name: THERMAL ENGINEERING

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C210.1	Explain the concepts in thermodynamics and laws of thermodynamics.
C210.2	Describe air standard efficiency of thermodynamic cycles and performance testing of IC engines
C210.3	Explain the properties of steam and working principle of boilers and turbines.
C210.4	Explain different modes of Heat transfer and working of heat exchangers and compressors.



Course Code: C211

Year of Study: 2022-23

Course Name: FLUID MECHANICS & HYDRAULIC MACHINERY

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C211.1	Explain fluid properties and pressure measurement techniques.
C211.2	Apply conservation laws to fluid flow over notches and, through pipes and orifices.
C211.3	Describe the construction, working and performance testing of hydraulic turbines.
C211.4	Describe the construction, working and performance testing of hydraulic pumps.

Course Code: C212

Year of Study: 2022-23

Course Name: AUTOMOBILE ENGINEERING

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C212.1	Describe the classification and basic structure of an automobile, Basic engine component, Cooling systems, Lubrication systems, Fuelsystems, Ignition systems and Governing systems.
C212.2	Explain the Transmission system in Automobiles
C212.3	Explain the working of Ignition, suspension, steering and braking system of Automobile
C212.4	Compare Electric, Hybrid-Electric and Plug in Hybrid vehicles, Emission Control and review Indian motor vehicle Act.



Course Code: C213

Year of Study: 2022-23

Course Name: COMMUNITY SKILLS IN INDIAN KNOWLEDGE SYSTEM.

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C213.1	Identify knowledge, skills, and practices followed traditionally.
C213.2	Explain process, methods and implements followed traditionally.
C213.3	Identify improvements in process and tools to enhance productivity and living standards of the community.
C213.4	Make use of socially relevant technologies in the field of water, waste, energy management for the community.

Course Code: C214

Year of Study: 2022-23

Course Name: INDUSTRIAL ENGINEERING

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C214.1	Describe the functions of PPC, different types of plant layout and plant maintenance
C214.2	Apply method study and work measurement techniques in job standardization.
C214.3	Interpret the control charts used in quality control.
C214.4	Explain the risks involved in acceptance sampling, components of selling price of a product and the depreciation of assets.



Course Code: C215

Year of Study: 2022-23

Course Name: THERMAL ENGINEERING LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C215.1	Apply theoretical knowledge in evaluating the performance of IC engines
C215.2	Determination of viscosity, calorific value, flash point and fire point of fuels.
C215.3	Demonstrate performance test on Heat exchangers
C215.4	Conduct performance test on air compressors

Course Code: C216

Year of Study: 2022-23

Course Name: FLUID MECHANICS LAB

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C216.1	Describe the methods for pressure measurement and determine the metacentric height of floating body.
C216.2	Measure various properties such as pressure, velocity, flow rate using various instruments and perform the experiments to understand Bernoulli's theorem and its applications.
C216.3	Distinguish various pipe fittings and determine coefficient of friction and minor losses in pipe flow.
C216.4	Determine the co-efficient of discharge of Notches and Hydraulic co-efficients of orifice based on experiments.



Course Code: C217

Year of Study: 2022-23

Course Name: MECHANICAL WORKSHOP IV

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C217.1	Perform machining operations on lathe and shaper
C217.2	Apply technical skill to practice fitting operations and use of various gauges
C217.3	Perform fabrication works by making semi- permanent joints in metal sheets and Practice welding operations
C217.4	Apply technical skill to perform smithy and foundry work

Course Code: C218

Year of Study: 2022-23

Course Name: Minor Project

On completion of the course, student will be able to:

COURSE CODE	COURSE OUTCOMES
C218.1	Apply housekeeping standards as part of lean manufacturing for workplace maintenance.
C218.2	Plan procedures for maintenance and preventive maintenance of equipment, tools, machineries, etc.
C218.3	Choose methods for calibration of measuring and test equipment.
C218.4	Employ skills acquired to solve problems of social significance or to simplifying day to day tasks.