



Cambridge Institute of Technology

First year : Common to all branches

Course outcomes of 2021 scheme

Course Code	Course Name	Course Outcomes-On completion of this course the students will be able to
21MAT11	CALCULUS AND DIFFERENTIAL EQUATIONS	<p>CO1. Apply the knowledge of calculus to solve problems related to polar curves and its applications in determining the bentness of a curve.</p> <p>CO2. Learn the notion of partial differentiation to calculate rate of change of multivariate functions and solve problems related to composite functions and Jacobian.</p> <p>CO3. Solve first-order linear/nonlinear ordinary differential equations analytically using standard methods.</p> <p>CO4. Demonstrate various models through higher order differential equations and solve such linear ordinary differential equations.</p> <p>CO5. Test the consistency of a system of linear equations and to solve them by direct and iterative methods.</p>
21MAT21	ADVANCED CALCULUS AND NUMERICAL METHODS	<p>CO1. Apply the concept of change of order of integration and change of variables to evaluate multiple integrals and their usage in computing the area and volume.</p> <p>CO2. Illustrate the applications of multivariate calculus to understand the solenoidal and irrotational vectors and also exhibit the inter dependence of line, surface and volume integrals.</p> <p>CO3. Formulate physical problems to partial differential equations and to obtain solution for standard practical PDE's.</p> <p>CO4. Apply the knowledge of numerical methods in modelling of various physical and engineering phenomena.</p>

S. Hand
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		CO5.Solve first order ordinary differential equations arising in engineering problems.
21PHY12/22	Engineering Physics Course Code	CO1. Interpret the types of mechanical vibrations and their applications, the role of Shock waves in various fields. CO 2. Demonstrate the quantization of energy for microscopic system. CO 3. App[y LASER and Optical fibers in opto electronic system. CO4. Illustrate merits of quantum free electron theory and applications of Hall effect. CO5. Analyse the importance of XRD and Electron Microscopy in Nano material characterization.
21ELE13/23	BASIC ELECTRICAL ENGINEERING	CO1: Analyse basic DC and AC electric circuits. CO2: Explain the working principles of transformers and electrical machines. CO3: Explain the concepts of electric power transmission and distribution of power. CO4: Understand the wiring methods, electricity billing, and working principles of circuit protective devices and personal safety measures.
21CIV14/24	ELEMENTS OF CIVIL ENGINEERING AND MECHANICS	CO1. Understand the various fields of civil engineering. CO2. Compute the resultant of a force system and resolution of a force. CO3. Comprehend the action for forces, moments, and other types of loads on rigid bodies and compute the reactive forces. CO4. Locate the centroid and compute the moment of inertia of regular and built-up sections. CO5. Analyze the bodies in motion.


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21EVN15/2 5	Engineering Visualization	CO 1. Understand and visualize the objects with definite shape and dimensions CO 2. Analyze the shape and size of objects through different views CO 3. Develop the lateral surfaces of the object CO 4. Create a 3D view using CAD software. CO 5. Identify the interdisciplinary engineering components or systems through its graphical representation.
21PHYL16/2 6	ENGINEERING PHYSICS LABORATORY	CO1. Understand the measuring techniques CO2. Operate different instruments and be capable to analyse the experimental results. CO3. Construct the circuits and their analysis.
21ELE17/27	BASIC ELECTRICAL ENGINEERING LABORATORY	CO1: verify KCL and KVL and maximum power transfer theorem for DC circuits. CO2: compare power factors of different types of lamps. CO3: demonstrate the measurement of the impedance of an electrical circuit and power consumed by a 3-phase load. CO4: analyze two-way and three-way control of lamps. CO5: Explain the effects of open and short circuits in simple circuits. CO6: Interpret the suitability of earth resistance measured.

21EGH18	Communicative English Course Code	CO1. Understand and apply the Fundamentals of Communication Skills in their communication skills. CO 2. Identify the nuances of phonetics, intonation and enhance pronunciation skills. CO 3. To impart basic English grammar and essentials of language skills as per present requirement. CO 4. Understand and use all types of English vocabulary and language proficiency. CO 5. Adopt the Techniques of Information Transfer through presentation.
21CHE12/2 2	ENGINEERING CHEMISTRY Course Code	CO1: Discuss the electrochemical energy systems such as electrodes and batteries. CO2: Explain the fundamental concepts of corrosion, its control and surface modification methods namely electroplating and electroless plating CO3: Enumerate the importance, synthesis and applications of polymers. Understand properties and application of nanomaterials. CO4: Describe the principles of green chemistry, understand properties and application alternative fuels.

S. H. Prasad
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		CO5: Illustrate the fundamental principles of water chemistry, applications of volumetric and analytical instrumentation.
21PSP23/13	PROBLEM-SOLVING THROUGH PROGRAMMING	<p>CO1. Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.</p> <p>CO 2. Apply programming constructs of C language to solve the real world problem</p> <p>CO 3. Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting</p> <p>CO 4. Explore user-defined data structures like structures, unions and pointers in implementing solutions</p> <p>CO 5. Design and Develop Solutions to problems using modular programming constructs using functions</p>
21ELN14/24	BASIC ELECTRONICS & COMMUNICATION ENGINEERING	<p>CO 1. Describe the concepts of electronic circuits encompassing power supplies, amplifiers and oscillators.</p> <p>CO 2. Present the basics of digital logic engineering including data representation, circuits and the microcontroller system with associated sensors and actuators.</p> <p>CO 3. Discuss the characteristics and technological advances of embedded systems.</p> <p>CO 4. Relate to the fundamentals of communication engineering spanning from the frequency spectrum to the various circuits involved including antennas.</p> <p>CO 5. Explain the different modes of communications from wired to wireless and the computing involved</p>


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21EME15/2 5	ELEMENTS OF MECHANICAL ENGINEERING	CO 1. Understand basic concepts of mechanical engineering in the fields of energy and its utilization, materials technology, manufacturing techniques, and transmission systems through demonstrations. CO 2. Understand the application of energy sources in Power generation and utilization, Engineering materials, manufacturing, and machining techniques leading to the latest advancements and transmission systems in day to day activities. CO 3. Apply the skills in developing simple mechanical elements and processes
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S. Indranath
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21CHEL16/26	ENGINEERING CHEMISTRY LABORATORY Course	<p>CO1 Determine the pKa and coefficient of Viscosity of a given organic liquid.</p> <p>CO2 Estimate the amount of substance present in the given solution using Potentiometer Conductometric and Colorimetric.</p> <p>CO3 Determine the total hardness and chemical oxygen demand in the given solution by volumetric analysis method.</p> <p>CO4. Estimate the percentage of Nickel, copper and Iron in the given analyte solution by titration method. CO5. Demonstrate flame photometric estimation of sodium & potassium and the synthesis of nanomaterials by Precipitation method.</p>
21CPL27/1 7	COMPUTER PROGRAMMING LABORATORY	<p>CO 1. Define the problem statement and identify the need for computer programming.</p> <p>CO 2. Make use of C compiler, IDE for programming, identify and correct the syntax and syntactic errors in programming</p> <p>CO 3. Develop algorithm, flowchart and write programs to solve the given problem</p> <p>CO 4. Demonstrate use of functions, recursive functions, arrays, strings, structures and pointers in problem solving.</p> <p>CO 5. Document the inference and observations made from the implementation.</p>
21EGH28	Professional Writing Skills in English Course	<p>CO 1. To understand and identify the Common Errors in Writing and Speaking.</p> <p>CO 2. To Achieve better Technical writing and Presentation skills.</p> <p>CO 3. To read Technical proposals properly and make them to Write good technical reports.</p> <p>CO 4. Acquire Employment and Workplace communication skills.</p> <p>CO 5. To learn about Techniques of Information Transfer through presentation in different level.</p>
21SFH19/2 9	Scientific Foundations of Health Course Code	<p>CO 1: To understand Health and wellness (and its Beliefs)</p> <p>CO 2: To acquire Good Health & It's balance for positive mindset</p> <p>CO 3: To inculcate and develop the healthy lifestyle habits for good health.</p> <p>CO 4: To Create of Healthy and caring relationships to meet the requirements of MNC and LPG world</p> <p>CO 5: To adopt the innovative & positive methods to avoid risks from harmful habits in their campus & outside the campus.</p>

		CO 6: To positively fight against harmful diseases for good health through positive mindset.
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K.R. PURAM, BENGALURU - 560 036.