



Cambridge Institute of Technology

First year : Common to all branches

Course outcomes of 2018 scheme

| Course Code | Course Name | Course Outcomes-On completion of this course the students will be able to |
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| 18MAT11 | Calculus and Linear Algebra | <p>CO1: Use partial derivatives to calculate rates of change of multivariate functions</p> <p>CO2: Analyze position, velocity, and acceleration in two or three dimensions using the calculus of vector valued functions</p> <p>CO3: Recognize and solve first-order ordinary differential equations, Newton's law of cooling</p> <p>CO4: Use reduction formula to evaluate complex trigonometric functions.</p> <p>CO5: Use matrices techniques for solving systems of linear equations in the different areas of Linear Algebra</p> |
| 18MAT21 | Advanced Calculus & Numerical Methods | <p>CO1: 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>CO2: Demonstrate various physical models through higher order differential equations and solve linear ODE.</p> <p>CO3: Construct a variety of PDE and its solution by exact method and separation variables.</p> <p>CO4: Explain the application of infinite series and obtain series solution of ODE.</p> <p>CO5: Apply the knowledge of numerical methods in modeling of various physical and engineering phenomena.</p> |

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| 18PHY12 | Engineering Physics | <p>CO1: Understand various types of oscillations and their implications, the role of Shock waves in various fields and recognize the elastic properties of materials for engineering applications.</p> <p>CO2: Realise the interrelation between time varying electric field and magnetic field, the transverse nature of the EM waves and their role in optical fiber communication.</p> <p>CO3: Compute Eigen values, eigen functions, momentum of atomic and subatomic particles using time independent 1-D Schrodinger wave equation.</p> <p>CO4: Apprehend theoretical background of Laser, construction and working of different types of laser and its application in different fields.</p> <p>CO5: Understand various electrical and thermal properties of materials like conductors, semiconductors and dielectrics using different theoretical models.</p> |
| 18ELE13 | BASIC ELECTRICAL ENGINEERING | <p>CO1: Analyse D.C and A.C. circuits.</p> <p>CO2: Explain the principles of operation and construction of single phase transformers.</p> <p>CO3: Explain the principle of operation and consruction of DC machines and synchronous machines.</p> <p>CO4: Explain the principle of operation and construction of three phase induction motors.</p> <p>CO5: Discuss concepts of electrical wiring , circuit protecting devices and earthing.</p> |
| 18CIV14 | Elements of civil engineering and mechanics | <p>CO1: Mention the applications of various fields of Civil Engineering.</p> <p>CO2: Compute the resultant of given force system subjected to various loads.</p> <p>CO3: Comprehend the action of Forces, Moments and other loads on systems of rigid bodies and compute the reactive forces that develop as a result of the external loads.</p> <p>CO4: Locate the Centroid and compute the Moment of Inertia of regular and built-up sections.</p> |

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| | | CO5 Express the relationship between the motion of bodies and analyse the bodies - up sections. |
| 18EGDL15 | Engineering Graphics | CO1: Prepare engineering drawings as per BIS conventions mentioned in the relevant codes. CO2: Produce computer generated drawings using CAD software. CO3: Use the knowledge of orthographic projections to represent engineering information I concepts and present the same in the form of drawings. CO4: Develop isometric drawings of simple objects reading the orthographic projections of those objects. CO5: Convert pictorial and isometric views of simple objects to orthographic views. |
| 18PHYL16 | ENGINEERING PHYSICS LAB | CO1: Apprehend the concepts of interference of light, diffraction of light, Fermi energy and magnetic effect of current. CO2: Understand the principles of operations of optical fibers and semiconductor devices such as photodiode and NPN transistor using simple circuits. CO3: Determine elastic moduli and moment of inertia of given materials with the help of suggested procedures. CO4: Recognise the Resonance concept and its practical applications. CO5: Understand the importance of measurement procedure, honest recording and representing the data, reproduction of final results. |
| 18ELEL17 | Basic Engineering Laboratory | CO1: Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory. CO2: Compare power factor of lamps. CO3: Determine impedance of an electrical circuit and power consumed in a 3 phase load. CO4: Determine earth resistance and understand two way and three way control of lamps. |

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| 18CHE12 | Engineering Chemistry | <p>CO1: Use of free energy in equilibria, rationalize bulk properties and processes using thermodynamic considerations, electrochemical energy system.</p> <p>CO2: Causes and effects of corrosion of metals and control of corrosion. Modification of surface properties of metals to develop resistance to corrosion, wear, tear, impact etc. by electroplating and electroless plating.</p> <p>CO3: Production and consumption of energy for industrialization of country and living standards of people. Electrochemical and concentration cells. Classical, modern batteries and fuel cells. Utilization of solar energy for different useful forms of energy.</p> <p>CO4: Environmental pollution, waste management and water chemistry.</p> <p>CO5: Different techniques of instrumental methods of analysis. Fundamental principles of nano material.</p> |
| 18CPS13/23 | C Programming for Problem Solving | <p>CO1: Illustrate simple algorithms from the different domains such as mathematics, physics, etc.</p> <p>CO2: Construct a programming solution to the given problem using C.</p> <p>CO3: Identify and correct the syntax and logical errors in C programs.</p> <p>CO4: Modularize the given problem using functions and structures.</p> |
| 18ELN14/24 | Basic Electronics | <p>CO1: Describe the operation of diodes, BJT, FET, and Operational Amplifiers.</p> <p>CO2: Design and explain the construction of rectifiers, regulators, amplifiers and oscillators.</p> <p>CO3: Describe general operating principles of SCRs and its application.</p> <p>CO4: Explain the working and design of fixed voltage IC regulator using 7805 and astable oscillator using Timer IC 555.</p> |

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| | | <p>CO5: Explain the different number system and their conversions and construct simple combinational and sequential logic circuits using Flip-Flops.</p> <p>CO6: Describe the basic principles of operations of communication system and mobile phones.</p> |
| 18EME15/25 | ELEMENTS OF MECHANICAL ENGINEERING | <p>CO1: Identify different sources of energy their conversion process.</p> <p>CO2: Explain the working principles of hydraulic turbines, pumps, IC engines and refrigeration</p> <p>CO3: Recognize various metal joining process and power transmission elements.</p> <p>CO4: Understand the property of common engineering materials and their applications in engineering industry</p> <p>CO5: Discuss the working the conventional machine tools, machining processes, tools and accessories.</p> <p>CO6: Describe the advanced manufacturing systems.</p> |
| 18CHEML16/26 | CHEMISTRY LAB | <p>CO1: Handling different types of instruments for analysis of materials using small quantities of materials involved for quick and accurate results.</p> <p>CO2: Carrying out different types of titrations for estimation of concerned in materials using comparatively more quantities of materials involved for good results.</p> |
| 18CPL17/27 | C Programming Laboratory | <p>CO1: Write algorithms, flowcharts and program for simple problems.</p> <p>CO2: Correct syntax and logical errors to execute a program.</p> <p>CO3: Write iterative and wherever possible recursive programs.</p> <p>CO4: Demonstrate use of functions, arrays, strings, structures and pointers in problem solving.</p> |

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| 18EGH18 | Technical English-I | <p>CO1: Use grammatical English and essentials of language skills and identify the nuances of phonetics, intonation and flawless pronunciation.</p> <p>CO2: Implement English vocabulary at command and language proficiency.</p> <p>CO3: Identify common errors in spoken and written communication.</p> <p>CO4: Understand and improve the nonverbal communication and kinesics.</p> <p>CO5: Perform well in the campus recruitment, engineering and all other general competitive examinations.</p> |
| 18EGH28 | Technical English-II | <p>CO1: Identify common errors in spoken and written communication.</p> <p>CO2: Get familiarized with English vocabulary and language proficiency.</p> <p>CO3: Improve nature and style of sensible writing and acquire employment at workplace communication skills.</p> <p>CO4: Improve their Technical Communications Skills through Technical Reading and Writing Practices.</p> <p>CO5: Perform well in campus recruitment, engineering and all, other general competitive examinations,</p> |



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