

CGPA Booster

Time Table Semester - 1

Date	Day	Shift 1 (7 - 8: 20Pm)	Shift 2 (8: 40 -10 Pm)
27/09/2021	Monday	C (Unit - 1, part 1)	Maths (Ch-1, part 1)
28/09/2021	Tuesday		MEC (Chapter -1)
29/09/2021	Wednesday	C (Unit - 1, part 2)	Maths (Ch-1, part 2)
30/09/2021	Thursday		Maths (Ch-2, part 1)
1/10/2021	Friday	C (Unit - 2, part 1)	MEC (Chapter -2)
2/10/2021	Saturday		Maths (Ch-2, part 2)
3/10/2021			
4/10/2021	Monday	C (Unit - 2, part 2)	Maths (Ch-3, part 1)
5/10/2021	Tuesday	Mec (ch- 3)	C (Unit - 3, part 1)
6/10/2021	Wednesday		Maths (Ch-3, part 2)
7/10/2021	Thursday	C (Unit - 3, part 2)	

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CSE101:COMPUTER PROGRAMMING

L:2 T:0 P:2 Credits:3

Course Outcomes: Through this course students should be able to

- discuss problem solving through programming in C language
- write their own programs using standard language conventions irrespective of the underlying compilation environment
- discuss the mechanism of code reusability by creating their own libraries of functions
- complete use of pointers with functions and implementation of basic data structures
- relate the theoretical knowledge and insights gained to formulate working code
- validate the logic building and code formulation by designing code capable of passing various test cases

Unit I **Basics and introduction to C** : Program development in C, structured programming using algorithm and flow chart, The C character set, Identifiers and keywords, Data types, Constants and variables, Expressions, Arithmetic operators, Unary, Relational, Logical, Assignment and conditional operators, Bitwise operators.

Unit II **Control structures and Input/Output functions** : If, If else, Switch case statements, While, For, Do-while loops, Break and continue statements, Goto, Return, Type conversion and type modifiers, Designing structured programs in C, Formatted and unformatted Input/Output functions like printf(), scanf(), puts(), gets() etc.

Unit III **User defined functions,Storage classes**: Function prototypes, Function definition, Function call including passing arguments by value and passing arguments by reference, Math library functions, Recursive functions, Scope rules (local and global scope), Storage classes in C namely auto, extern, register, static storage classes.

Unit IV **Arrays in C** : Declaring and initializing arrays in C, Defining and processing 1D and 2D arrays, Array applications, Passing arrays to functions, inserting and deleting elements of an array, Searching including linear and binary search methods, Sorting of array using bubble sort

Unit V **Pointers, Dynamic memory allocation**: Pointer declaration and initialization, Types of pointers - dangling , wild, null, generic (void), Pointer expressions and arithmetic, Pointer operators, Operations on pointers, Passing pointer to a function, Pointer and one dimensional array, Dynamic memory management functions (malloc, calloc, realloc and free),

Unit VI **Strings,Derived types including structures and unions** : Defining and initializing strings, Reading and writing a string, Processing of string, Character arithmetic, String manipulation functions and library functions of string, Declaration of a structure, Definition and initialization of structures, Accessing structures, Structures and pointers, Nested structures, Declaration of a union.

Text Books:

1. PROGRAMMING IN C by ASHOK N. KAMTHANE, PEARSON

References:

1. PROGRAMMING IN ANSI C by E. BALAGURUSAMY, MCGRAW HILL EDUCATION
2. C HOW TO PROGRAM by PAUL DEITEL AND HARVEY DEITEL, PRENTICE HALL

MTH165:MATHEMATICS FOR ENGINEERS

Course Outcomes: Through this course students should be able to

CO1 :: recall the concepts of matrices and its application to solve the system of linear equations.

CO2 :: review the basic concept of calculus of one variable.

CO3 :: apply the concept of calculus to evaluate extreme values of functions.

CO4 :: describe calculus of multivariate functions and their applications.

CO5 :: evaluate surface and volume integral using multiple integral.

CO6 :: describe the concept of Fourier series and its application.

Unit I

Linear Algebra : Review of matrices, Elementary operations of matrices, Rank of a matrix, Linear dependence and independence of vectors, Solution of Linear system of equations, Inverse of matrices, Eigen values and Eigen vectors, Properties of Eigen values, Cayley-Hamilton theorem

Unit II

Differential and integral calculus : General rules of differentiation, Derivatives of standard functions, Derivatives of Parametric forms, Derivatives of implicit functions, Logarithmic differentiation,, properties of indefinite integral, Methods of integration-By Parts, Methods of integration-By Partial fractions, Properties of definite integral

Unit III

Application of derivatives : Rolle's theorem, Mean value theorems, Taylor's theorems with remainders, Maclaurin theorems with remainders, indeterminate forms, L' Hospital's rule, maxima and minima.

Unit IV

Multivariate functions : Functions of two variables, Limits and Continuity, Partial derivatives, Total derivative and differentiability, Chain rule, Euler's theorem for Homogeneous functions, Maxima and Minima, Lagrange method of multiplier

Unit V

Multiple Integrals : Double integrals, change of order of integration, Triple integrals, change of variables, Application of double integrals to calculate area and volume, Application of triple integrals to calculate volume.

Unit VI

Fourier series : Introduction and Euler's formulae, Conditions for a Fourier Expansion and Functions having points of discontinuity, Change of interval, Even and odd functions, Half Range series, Parseval's Formula, Complex form of Fourier Series

Text Books:

1. ADVANCED ENGINEERING MATHEMATICS by R.K.JAIN, S.R.K. IYENGER, NAROSA PUBLISHING HOUSE

References:

1. HIGHER ENGINEERING MATHEMATICS by B.S. GREWAL, KHANNA PUBLISHERS
2. MATHEMATICS TEXT BOOK FOR CLASS XII PART I by -, NCERT
3. MATHEMATICS TEXT BOOK FOR CLASS XII PART II by -, NCERT

MEC103:ENGINEERING GRAPHICS

Course Outcomes: Through this course students should be able to

CO1 :: Visualize the knowledge of basic geometries, geometric tools, shapes and procedures used in engineering drawing.

CO2 :: Represent detailed conceptual knowledge about the dimensioning, specifications and conventions.

CO3 :: Understand the concept of projection and acquire visualization skills, projection of points.

CO4 :: Understand the concept to draw the basic views related to projections of Lines.

CO5 :: Understand different concepts of sectioning and 3-D representations of objects.

CO6 :: Sketch the different concepts of isometric projections.

Unit I

Introduction to Engineering Drawing : Principles of Engineering Graphics and their significance, Drawing instruments, Lettering in vertical Gothic letters using single stroke, Dimensioning, Different types of lines used in engineering drawing, Plane and Diagonal Scale, Basics of BIS norms

Unit II

Projection of Points and Lines : Projection of Points, Projection of line perpendicular to HP, Projection of line perpendicular to VP, Projection of line parallel to HP and VP, Projection of line inclined to HP and parallel to VP, Projection of line inclined to VP and parallel to HP, Horizontal and Vertical traces of line

Unit III

Orthographic Projections : Method of obtaining Orthographic Projections in First angle and third angle projection., Principles of orthographic projections

Unit IV

Sectional views : Sectioning webs and ribs, Importance of sectioning, Types of section including full section, offset section and half section

Unit V

Isometric Projections : Principles of Isometric Projections, Isometric Scale, Terminology, Isometric view of step, inclined, oblique, cylindrical blocks, Isometric Dimensioning

Unit VI

Development of Surfaces : Methods of development, Parallel line development of cylinder and prism, Radial line development of cone and pyramid

Text Books:

1. ENGINEERING DRAWING WITH AN INTRODUCTION TO AUTOCAD by DHANANJAY A JOLHE, MCGRAW HILL EDUCATION

References:

1. ENGINEERING GRAPHICS BY AMAR PHATAK by AMAR PHATAK, DREAMTECH PRESS

2. ENGINEERING DRAWING by M.B.SHAH,BC RANA, PEARSON

3. ENGINEERING GRAPHICS by K C JOHN, PRENTICE HALL

4. ENGINEERING DRAWING by N.D. BHAT & M. PANCHAL, CHAROTAR PUBLISHING HOUSE PVT. LTD.

5. ENGINEERING DRAWING AND DESIGN by JENSEN, HELSEL AND SHORT, MCGRAW HILL EDUCATION

ECE131: BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Course Outcomes: Through this course students should be able to

CO1 :: understand the fundamental behaviour of circuit elements and solve dc networks by different circuit reduction techniques

CO2 :: understand the fundamental behaviour and notations of AC circuits and solve AC circuit problems

CO3 :: discuss the working principles and applications of transformers and motors

CO4 :: analyze the working of various semiconductor devices and its applications

CO5 :: analyze the working of operational amplifiers and filters in electronic devices

CO6 :: analyze the applications of IOT and embedded system in various fields

Unit I

Fundamentals of D.C. circuits : resistance, inductance, capacitance, voltage, current, power and energy concepts, ohm's law, Kirchhoff's laws, basic method of circuit analysis, intuitive method of circuit analysis- series and parallel simplification, voltage division rule, current division rule, star-delta transformation, mesh and nodal analysis, introduction to dependent and independent sources, network theorems- superposition theorem, Thevenin's theorem, Norton's theorem, maximum power transfer theorem

Unit II

Fundamentals of A.C. circuits : alternating current and voltage, concept of notations (i , v , I , V), definitions of amplitude, phase, phase difference, RMS value and average value of an AC signal, complex representation of impedance, steady state analysis of ac circuits consisting of RL, RC and RLC (series), resonance in series RLC circuit, power factor and power calculation in RL, RC and RLC circuits, three-phase circuits- numbering and interconnection (delta or mesh connection) of three phases, relations in line and phase voltages and currents in star and delta

Unit III

Fundamentals of electrical machines : Fleming's left hand and right hand rule, mutual inductance and mutual coupling phenomena in transformer, transformer – working, concept of turns ratio and applications, transformer on DC, instrument transformers, auto-transformer, dc machines- working principles, classification, starting, speed control and applications of dc motors, working principle of single and three phase induction motors, applications of ac motors

Unit IV

Fundamentals of semiconductor devices and digital circuits : digital abstraction- voltage levels and the static discipline, boolean logic, combinational gates, fan-in and fan-out of gates, noise margin in details, pn junction and zener diode characteristics and analysis, testing of diodes and its applications, basic operation and testing of BJT, MOSFET representation and its characteristics, handling of integrated circuits-ESD phenomena

Unit V

Fundamentals of filters and operational amplifier : filter examples- band-pass filter, low-pass filter, high-pass filter, operational amplifier abstraction- device properties of the operational amplifier, simple op amp circuits – virtual ground concept, inverting and non-inverting op-amp, op-amp as an adder and subtractor, op-amp RC circuits – op-amp integrator, op-amp differentiator, op-amp as a comparator and its application in anti-lock braking systems

Unit VI

Fundamentals of embedded system and its application in industrial processes : comparison of microprocessor and micro-controller, types of processors : SOC, ASIC, DSP and FPGA, introduction to embedded system, examples of real-time applications of embedded system : GPOS and RTOS, cyber physical world, role of IOT and cloud computing in condition monitoring of plant processes, health care, agriculture, manufacturing, automobiles and smart grid

Text Books:

1. FOUNDATIONS OF ANALOG AND DIGITAL ELECTRONIC CIRCUITS by AGARWAL, ANANT, AND JEFFREY H. LANG., ELSEVIER

References:

1. FUNDAMENTALS OF ELECTRICAL ENGINEERING AND ELECTRONICS by B.L.THERAJA, S. CHAND & COMPANY

2. INTRODUCTION TO ELECTRONICS by EARL GATES, DELMAR - CENGAGE LEARNING

3. BASIC ELECTRICAL ENGINEERING by D.C. KULSHRESTHA, MC GRAW HILL

4. INTRODUCTION TO EMBEDDED SYSTEMS by K. V. SHIBU, MC GRAW HILL