

Chhattisgarh Swami Vivekanand Technical University, Bhilai

SCHEME OF TEACHING & EXAMINATION

BE (Information Technology) III Semester

Sl. No.	Board of Study	Subject Code	Subject Name	Periods per week			Scheme of Exam			Total Marks	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1	Appl. Mathematics	333351(14)	Mathematics-III	4	1	-	80	20	20	120	5
2	Appl. Mathematics	333352(14)	Discrete Structures	3	1	-	80	20	20	120	4
3	Info. Technology	333353(33)	Basic Electronics & Network Theory	3	1	-	80	20	20	120	4
4	Info. Technology	333354(33)	Concepts of IT & Web Technology	3	1	-	80	20	20	120	4
5	Info. Technology	333355(33)	Problem Solving & Logic Building using C	3	1	-	80	20	20	120	4
6	Info. Technology	333356(33)	Digital Electronics and Logic Design	3	1	-	80	20	20	120	4
7	Info. Technology	333361(33)	Basic Electronics & Network Theory Lab	-	-	3	40	-	20	60	2
8	Info. Technology	333362(33)	Problem Solving & Logic Building using C Lab)	-	-	3	40	-	20	60	2
9	Info. Technology	333363(33)	Digital Electronic and Logic Design Lab	-	-	3	40	-	20	60	2
10	Info. Technology	333364(33)	Web Technology Lab (HTML / DHTML/CSS/XML)	-	-	3	40	-	20	60	2
11	Humanities	333365(46)	Value Education	-	-	2	-	-	40	40	1
12			Library	-	-	1	-	-	-	-	-
			TOTAL	19	6	15	640	120	240	1000	34

L: Lecture, T: Tutorial, P: Practical, ESE: End Semester Exam, CT: Class Test, TA: Teachers Assessment

Note: Duration of all theory papers will be of Three Hours.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:	Bachelor of Engineering	Semester:	III
Branch:	Information Technology	Code:	333351(14)
Subject:	Mathematics – III	Total Tutorial Periods:	10
Total Theory Periods:	40	Assignments:	Two (Minimum)
Class Tests:	Two (Minimum)	Maximum Marks: 80	Minimum Marks: 28
ESE Duration:	Three Hours		

Course Objectives:

1. To make the students understand the Fourier series analysis is a powerful method where the formulas are integrals and to have knowledge of expanding periodic functions that explore variety of applications of Fourier series.
2. To provide knowledge of Laplace transform of elementary functions including its properties and applications to solve ordinary differential equations.
3. To provide a sound background of complex analysis to perform a thorough investigation of major theorems of complex analysis and to apply these ideas to a wide range of problems that includes the evaluation of both complex line integrals and real integrals.
4. To have a thorough knowledge of PDE which arise in mathematical descriptions of situations in engineering.
5. To study about a quantity that may take any of a given range of values that can't be predicted as it is but can be described in terms of their probability.

UNIT- I Fourier series: Expansion of function as Fourier series, Change of interval, Even and odd functions, Half-range Fourier series, Practical harmonic analysis.

UNIT-II Laplace Transformation: Laplace transform of elementary functions, Properties of Laplace transform, Laplace transform of derivatives and integrals, multiplication by t^n and division by t , Laplace transform of periodic functions. Inverse Laplace transform, Convolution theorem, Application of Laplace transform to solutions of ordinary differential equations.

UNIT- III Theory of Complex Variables: Limit, Derivative and Analytic functions; Cauchy-Riemann equations and its applications to flow problems; Complex Integration: Line and Contour integral, Cauchy integral theorem and Integral formula; Taylor series, Laurent series; singularities; Poles and their orders and residues; Evaluation of real definite integrals.

UNIT-IV Partial Differential Equation: Formation of partial differential equations, Equations solvable by direct integration, Lagrange's linear equations, Homogeneous linear differential equations with constant coefficients, Non-homogeneous linear equations, Solution of partial differential equations by the method of separation of variables.

UNIT-V Random variable: Discrete and continuous probability distributions, Mathematical expectation, Mean and Variance, Moments, Moment generating function, probability distribution, Binomial, Poisson and Normal distributions.

Text Books:

1. Higher Engg. Mathematics by Dr. B.S. Grewal– Khanna Publishers.
2. Advanced Engg. Mathematics by Erwin Kreyszig – John Wiley & Sons.

Reference Books:

1. Advanced Engg. Mathematics by R.K. Jain and S.R.K. Iyengar – Narosa Publishing House.
2. Applied Mathematics by P.N. Wartikar & J.N. Wartikar. Vol- II– Pune Vidyarthi Griha Prakashan, Pune.
3. Applied Mathematics for Engineers & Physicists by Louis A. Pipes- TMH.

COURSE OUTCOME:

After completion of this course the students will be able to apply Fourier series, Laplace transformation, Theory of complex variable, Partial differential equations and Random variable to Computer Science problems and solve them. Hands on these Mathematical topics will make them equipped to prepare for higher studies through competitive examinations.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:	Bachelor of Engineering	Semester:	III
Branch:	Information Technology	Code:	333352(14)
Subject:	Discrete Structures	Total Tutorial Periods:	10
Total Theory Periods:	40	Assignments:	Two (Minimum)
Class Tests:	Two (Minimum)	Maximum Marks: 80	Minimum Marks: 28
ESE Duration:	Three Hours		

Course Objectives:

1. To introduce a number of discrete mathematical structures found to be serving as tools in the development of theoretical computer science.
2. Course focuses on how discrete structures actually helped computer engineers to solve problems occurred in the development of programming languages.
3. Course highlights the importance of discrete structures towards simulation of a problem in computer science engineering.

UNIT- I MATHEMATICAL LOGIC & BOOLEAN ALGEBRA: Basic concept of mathematical logic, Statements, Connectives, Conditional and biconditional statements, Logical equivalence, Logical implication & quantifiers, Basic concept of Boolean Algebra, Properties of Boolean Algebra, Boolean functions, Disjunctive & conjunctive normal forms of Boolean functions, Applications of Boolean Algebra in switching circuits & logic circuits.

UNIT-II SET THEORY, RELATIONS, FUNCTIONS: Basic concept of set theory, Relations, Properties of relation in a set, Equivalence relation, Composition of relations, Partial order & total order relations, Lattices & Hasse diagram, Introduction to function, Inverse, Identity, Injective, Surjective & Bijective functions, Composition of functions and some special functions.

UNIT- III ALGEBRAIC STRUCTURES: Groups, Subgroups, Cosets, Lagrange's theorem, Isomorphism, Automorphism, Homomorphism, Codes & group codes, Rings, Integral domains and Fields.

UNIT-IV GRAPH THEORY: Introduction to graph theory, Walks, Paths & Circuits, Types of graphs, Shortest path problems, Eulerian and Hamiltonian graphs, Basic concept of tree: spanning tree, minimum spanning tree, search tree, rooted binary tree, Cut sets, Network flow, Matrix representation of graphs.

UNIT-V COMBINATORICS: Permutation and combination, Pigeon-hole principle, Mathematical induction, Principle of Inclusion and Exclusion, Generating function, Recurrence relation.

Text Books:

1. Elements of discrete mathematics by C.L. Liu, Tata McGraw-Hill, publications.
2. Discrete Mathematical structures, by Bernard Kolman, Robert C. Busby and Sharon Cutler Ross, Pearson Education.

Reference Books:

1. A Text Book of Discrete Mathematics, Swapan Kumar Sarkar, S. Chand & Company Ltd.
2. Graph theory with applications to engineering and computer science, by NarsinghDeo, Prentice Hall of India.
3. Discrete mathematics for computer scientists and mathematicians, by J.L. Mott, A. Kandel and T.P. Baker, Prentice Hall of India.
4. Discrete Mathematical Structures with applications to computer science, by J.P. Tremblay and R. Manohar, Tata McGraw-Hill.

COURSE OUTCOME:

After completion of this course students will be -

1. Able to apply mathematical logic and Boolean algebra in switching circuits & logic circuits.
2. Familiar with set theory, relation and functions.
3. Familiar with algebraic structures, graph theory and combinatorics.
4. Able to solve problems in various fields in computer science, specially networking.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:	Bachelor of Engineering	Semester:	III
Branch:	Information Technology	Code:	333353(33)
Subject:	Basic Electronics & Network Theory		
Total Theory Periods:	40	Total Tutorial Periods:	10
Class Tests:	Two (Minimum)	Assignments:	Two (Minimum)
ESE Duration:	Three Hours	Maximum Marks: 80	Minimum Marks: 28

Course Objectives:

1. To understand basic electrical networks, associated circuit theorems.
2. To develop an idea about the semiconductor electronic devices which play very important role in field of computer hardware design which are frequently used in our day to day life.
3. To motivate our students to develop a sound foundation for forthcoming electronics subjects that are based on computer hardware and communication devices.
4. To learn the basic elements and working principles of Field Effect Transistor & its utilization in electronics circuits.

UNIT- I Basics of Networks: Circuit Elements, KVL, KCL, Network Theorems, Superposition, Thevenin's, Norton's, Max. Power Transfer Reciprocity, Network theorems and their applications in circuit analysis, Formulation of network equations, Source transformations, Two port networks, Open circuit Impedance and Short circuit Admittance parameters, hybrid parameters, and their inter-relations.

UNIT-II Diode and Its Applications: Diodes; Semiconductor Diodes, V-I Characteristics, Effect of Temperature on V-I Characteristics, Ideal Diode, Diode equation, Diode Resistance, Diode Capacitance: Transition and Diffusion Capacitance. Rectifying circuits and DC Power Supplies: Load line analysis of diode circuit, Half wave rectifier: Voltage regulation, Ripple factor, ratio of rectification, Transformer Utilization factor. Full wave rectifier, Bridge rectifier. Filter circuits for power supply: Inductor filter, Capacitor filter. Zener diode: Break down mechanism, Characteristics, Specifications, Voltage regulator circuit using zener diode.

UNIT- III Transistors: Transistor: Introduction, Construction, Types: npn and pnp, Current components. Transistor as an amplifier, Transistor Characteristics, Transistor Circuit Configuration: Common Base (CB) Configuration, Common Emitter (CE) Configuration, Common Collector Configuration (CC), Early Effect. Ebers-Moll Model, Maximum Voltage Ratings.

UNIT-IV Stability of Transistors: Transistor Biasing and Thermal stabilization: The operating point, Bias stability, Stability factor, Emitter bias, Collector – to – base bias, Voltage divider bias with emitter bias, Emitter bypass capacitor. Bias compensation.

UNIT-V Field Effect Transistors: Field Effect Transistor (FET): Introduction, Construction, Operation, V-I Characteristics, Transfer Characteristics, Drain Characteristics, Small-Signal Model. Metal Oxide Semiconductor Field Effect Transistor (MOSFET): Introduction, Construction, Operation and characteristics, Depletion MOSFET, Enhancement MOSFET.

Text Books:

1. Integrated Electronics: Analog & Digital Circuit Systems – Jacob Millman&Halkias, TMH.
2. Network Analysis by M.E. Van Valkenbarg,

Reference Books:

1. Electronic Devices and Circuit Theory – Boylestad&Nashelsky, 8th Ed. PHI.
2. Electronic Devices & Circuit Analysis – K. Lal Kishore, BS Publications
3. Electronic Devices & Circuits – Allen Mottershead, PHI.
4. Circuit Theory Analysis & Synthesis by A Chakraborty (DhanpatRai& Co. Pvt. Ltd, New Delhi)

COURSE OUTCOME:

1. Students will be able to acknowledge about the fundamental of semiconductor devices, communication hardware devices and basics of computer hardware.
2. They will learn about the different electronics circuits which play very important role in our day to day life.
3. Recognize basic electronics components and devices used for different electronic functions.
4. Be able to design analog and digital electronic circuits at block level.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:	Bachelor of Engineering	Semester:	III
Branch:	Information Technology	Code:	333354(33)
Subject:	Concepts of IT & Web Technology		
Total Theory Periods:	40	Total Tutorial Periods:	10
Class Tests:	Two (Minimum)	Assignments:	Two (Minimum)
ESE Duration:	Three Hours	Maximum Marks: 80	Minimum Marks: 28

Course Objectives:

1. To provide students basic ideas regarding computer as a functional system.
2. To provide knowledge about the hardware and the software components of a computer system
3. To familiarize with the concept of internet and its applications
4. To skill them with professional knowledge of desktop publishing practices using different types of software packages.

- UNIT- I COMPUTER FUNDAMENTALS:**Brief history of computers, Technical evolution of computers, Computer pioneers, Categories / types of computers, Computer hardware, Computer software, CPU and its components; Mother board, Microprocessor, Expansion slots, Input / Output ports, Memory; Types of computer memory, Memory modules viz. SIMM, DIMM, EDO, RDRAM, SDRAM, DDR RAM, etc. Communication pathways, Computer registers.
- UNIT-II INPUT, OUTPUT (HARD/SOFT) COPY DEVICES, STORAGE DEVICES:**Input concepts, Input devices viz. Keyboard, Mouse, Joystick, Track ball, Touch screen, Light pen, MICR, OMR, OBR, OCR, Voice input, Smart cards, Bar code readers, Digitizer, Scanner, etc. Graphic display devices: DVST, Graphical input devices, three dimensional input devices; Voice output systems. Hard copy devices viz. Printer, Types of printers, Features of printers; Plotter, Types of plotters, Features of plotters; Types of cards (brief) viz. CGA, MGA/MDA, EGA, VGA, SVGA, etc. Storage devices viz. Fixed disk or Hard disk, Floppy diskette. Types of monitors: CRT Monitor, color monitor, LCD, LED, PLASMA displays.
- UNIT- III OPERATING SYSTEMS AND MS-DOS :**Functions of operating system (only list), Boot loader (Windows and Unix) Compiler, Assembler, Interpreter, Debugger, Loader, and Linker; Machine language, Assembly language, High level languages, Fourth generation languages; Booting process (with BIOS & POST), Auto executing programs, Setting parameters of config.sys; Internal and external commands of MS-DOS along with their syntax and different options.
- UNIT-IV HTML:** Introduction to HTML, SGML, DTD (Document Type Definition), Basic HTML Elements, Tags and usages, HTML Standards, Issues in HTML.
DHTML: Introduction Cascading Style Sheets: Syntax, Class Selector, Id Selector, DOM (Document Object Model) & DSO (Data Source Object).
- UNIT-V SOFTWARE PACKAGES:**
Electronic Spreadsheet, Word processing software, other pre-written software packages, Data communication packages, Desktop publishing standards and practices, Introduction to Open Source Software.

Text Books:

1. Information Technology Today, S. Jaiswal, Revised Edition, Galgotia.
2. Computers Today, S. K. Basandra, Updated Edition, Galgotia.

Reference Books:

1. ISTE Learning Material, Computer Installation and Trouble Shooting, M. Radhakrishnan, D.Balasubramaniam
2. CHIP Special, Basics in Computing, www.chip-india.com
3. Microsoft MS-DOS User's guide(manual), Version 6.2 or above. Getting started Microsoft Windows(manual), 98 or higher version.

1. **COURSE OUTCOME:** Able to identify thrust areas of computer usage, how computers work, and gain basic knowledge of technological trends, social issues, and career opportunities relative to computers in society.
2. Acquaint with proper up-keep of computer processor, its peripherals, and storage media.
3. Able to use the knowledge of the Windows operating system and Windows explorer as well as how to perform essential functions using a graphical user interfaces.
4. Able to implement the knowledge of DTP using special features of word processors, electronic spreadsheets & software and create professional-looking documents through record keeping, data manipulation, number-crunching and charting activities in lab exercises and assignments.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**
Branch: **Information Technology**
Subject: **Problem Solving & Logic Building using C**

Semester: **III**
Code: **333355(33)**

Total Theory Periods: **40** Total Tutorial Periods: **10**
Class Tests: **Two (Minimum)** Assignments: **Two (Minimum)**
ESE Duration: **Three Hours** **Maximum Marks: 80** **Minimum Marks: 28**

Course Objectives:

1. To differentiate and understand low-level and high-level programming languages
2. To understand modular programming concepts
3. To understand the use of rich set of data types in C appropriate to specific programming problems.
4. Demonstrate the use of various operators
5. Demonstrate the use of the various control flow constructs.
6. Use arrays & pointers to efficiently to design C program to solve problems.
7. Demonstrate creation and use of own data types.

- UNIT- I** Introduction: Computer systems, Hardware & software concepts.
Problem Solving: Algorithm / pseudo code, flowchart, program development steps, Computer Languages: machine, symbolic, and high -level languages, Creating and running programs: Writing, editing, compiling, linking, and executing.
Basics of C: Structure of a C program, identifiers, basic data types and sizes. Constants, variables, arithmetic, relational and logical operators, increment and decrement operators, conditional operator, assignment operators, expressions, type conversions, conditional expressions, precedence and order of evaluation, Sample programs.
- UNIT-II** Bit-wise Operators: logical, shift, rotation, masks.
Selection – Making Decisions: Two - way selection: if - else, null else, nested-if, examples, Multi- way selection: switch, else-if, examples.
Strings: concepts, C strings.
Iterative: Loops -while, do-while and for statements, break, continue, initialization and updating, event and counter controlled loops, looping applications: Summation, powers, smallest and largest.
- UNIT- III** Arrays: Arrays-concepts, declaration, definition, accessing elements, storing elements, Strings and string manipulations, 1-D arrays, 2-D arrays and character arrays, string manipulations, multidimensional arrays, array applications: Matrix Operations, checking the symmetry of a Matrix.
Functions -Modular programming: Function basics, parameter passing, storage classes (extern, auto, register, static), scope rules, block structure, user defined functions, standard library functions, recursive functions. Recursive solutions for Fibonacci series and Towers of Hanoi. Header files, C pre-processor. Examples C programs on Passing 1-D arrays and 2-D arrays to functions.
- UNIT-IV** Pointers: Pointers concepts, initialization of pointer variables, pointers and function arguments, passing by address – dangling memory, address arithmetic, Character pointers and functions, pointers to pointers, pointers and multidimensional arrays, dynamic memory management functions, command line arguments.
- UNIT-V** Enumerated, Structure and Union: Derived types – structures, structure declaration, definition and initialization of structures, accessing structures, nested structures, arrays of structures, structures and functions, pointers to structures, self referential structures, unions, typedef, bit-fields, program applications.
File Handling: Input and output – concept of a file, text files and binary files, Formatted I/O, file I/O operations, example programs.

Text Books:

1. “The C –Programming Language” by B.W. Kernighan, Dennis M. Ritchie, PHI “
2. “Programming in C” by E. Balagurusamy (TMH)

Reference Books:

1. “C Programming: A Problem - Solving Approach” by Forouzan, E. V. Prasad, Giliberg, Cengage, 2010.
2. “Programming in C” by Stephen G. Kochan, 3/e Pearson, 2000
3. “C Programming Laboratory Handbook For Beginners” by Sidnal, Wiley India.

Course Outcomes:

After completion of the course study, students will be able to-

1. Use and differentiate between basic concepts of computer hardware and software.
2. Use data representation for the fundamental data types in C and perform conversions between binary-hexadecimal-decimal date representations.
3. Read, understand and trace the execution of programs written in C language
4. Analyze problems and design algorithms in pseudo code.
5. Write C program for a given algorithm using modular approach

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:	Bachelor of Engineering	Semester:	III
Branch:	Information Technology	Code:	333356(33)
Subject:	Digital Electronics & Logic Design		
Total Theory Periods:	40	Total Tutorial Periods:	10
Class Tests:	Two (Minimum)	Assignments:	Two (Minimum)
ESE Duration:	Three Hours	Maximum Marks:	80
		Minimum Marks:	28

Course Objectives:

1. To study various number systems, knowledge of these number systems is essential in core computer science subjects.
2. To explore brief idea about the different digital circuits which are used to develop the digital devices.
3. Understand the concepts of Memories, Programmable Logic Devices & Digital ICs.
4. To motivate the students to develop their logic to design new digital circuits usable for hardware design.
5. To motivate our students to use these digital circuits in integrated circuit design using VLSI.

UNIT-I Overview of Boolean algebra and Logic gates: Codes: Binary codes: Weighted & Non-weighted codes, Sequential codes, self complementing codes, Cyclic codes, 8-4-2-1 BCD code, Excess-3 code, Gray code: Binary to Gray and Gray to binary code conversion, Error detecting code, Error correcting code, 7-bit Hamming code, ASCII code, EBCDIC code. Binary Arithmetic, Boolean Algebra, Minimization of Switching Function, Demorgan's Theorem, Karnaugh's Map Method, Quine-McCluskey's Method (Tabular Method). Basic and Universal logic Gates, Realization of switching functions using gates.

UNIT-II Digital Logic Families: Transistor Inverter: Basic Concepts of RTL and DTL; TTL: Open collector gates, TTL subfamilies, IIL, ECL; MOS Logic: CMOS Logic, Dynamic MOS Logic, Interfacing: TTL to ECL, ECL to TTL, TTL to CMOS, CMOS to TTL, and Comparison among various logic families.

UNIT-III Combinational Circuits: Adder & Subtractor: Half adder, Full adder, Half-subtractor, Full-subtractor, Parallel Binary adder, Look Ahead carry adder, Serial adder, BCD adder. Code converter, Parity bit generator/Checker, Comparator. Decoder: 3-line to 8-line decoder, 8-4-2-1 BCD to Decimal decoder, BCD to Seven segment decoder. Encoder: Octal to binary and Decimal to BCD encoder. Multiplexer: 2-input multiplexer, 4-input multiplexer. Demultiplexer: 1-line to 4-line, study of Multiplexer as Universal Logic Function Generator.

UNIT-IV Sequential Circuits: Flip-Flops and their conversion, Excitation Tables. Introduction to registers and counters: Synchronous and Asynchronous counters and Designing of sequential circuits: code converter and counters. Mod-k and divide by K counters, Counter applications.

UNIT-V Memories and Machines: Finite State Machine, Mealy Machine, Moore Machine, Introduction to various semiconductor memories and designing of ROM and PLA & PAL.

Text Books:

1. R. P. Jain: "Modern Digital electronics", TMH
2. B. Somanathan Nair, "Digital Electronics & Logic Design", Prentice-Hall of India

Reference Books:

1. R J Tocci, "Digital System principles and Applications"
2. "Digital Electronics" by A.K. Maini, Wiley India.
3. M.M. Mano: "Digital design", PHI.
4. Millman Taub, "Pulse, Digital and Switching Waveforms" TMH
5. M.M. Mano: "Digital logic and computer design", PHI.
6. Floyd: "Digital fundamentals", UBS.

Course Outcomes:

After completion of this course, students will be able to -

1. Acknowledge about the fundamentals of digital circuit design.
2. Understand the operation of Latch circuits & Flip flops.
3. Take interest to designing & develop ICs in VLSI industries.
4. Learn operation of different Semiconductor Memories.

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**
Branch: **Information Technology**
Subject: **Basic Electronics & Network Theory
Laboratory**

Semester: **III**
Code: **333361(33)**

Total Lab Periods: **48**
Maximum Marks: **40**

Batch Size: **30**
Minimum Marks: **20**

List of Experiments: (At least Ten experiments are to be performed by each student)

1. To draw the characteristics of a semi conductor diode and to find cut-in voltage, reverse resistance, static resistance and dynamic resistance.
2. To draw the characteristics of a zener diode .
3. To design a half wave rectifier and to determine its efficiency and ripple factor.
4. To design a- full wave rectifier and determine the ripple factor and efficiency with and without filter.
5. To draw the characteristics of FET using BFW – 10.
6. To draw the characteristics of CE configuration of a transistor amplifier.
7. To draw the characteristics of CB configuration of a transistor amplifier.
8. To draw the characteristics of CC configuration of a transistor amplifier.
9. To design a Zener regulator circuit and to find the regulation characteristics.
10. To draw the load line of a transistor amplifier under CE configuration.
11. To design and verify the self bias circuit operation.
12. To design and verify the voltage divider biasing circuit.
13. To verify the effect of emitter bypass capacitor.
14. To calculate and verify "Z" parameters of a two port network.
15. To calculate and verify "Y" parameters of a two port network.
16. To calculate and verify "H" parameters of a two port network.

List of Equipments/Machines required:

Circuit components, Breadboard, Hook-up wire, Power supply, CRO, Function generator

Recommended Books:

1. Laboratory Manual for Electronic Devices and Circuits, 4 thEd., David A. Bell, PHI

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**
Branch: **Information Technology**
Subject: **Problem solving & Logic building using C
Laboratory**
Total Lab Periods: **48**
Maximum Marks: **40**

Semester: **III**
Code: **333362(33)**
Batch Size: **30**
Minimum Marks: **20**

List of Experiments: (At least Ten experiments are to be performed by each student)

1. Write a C program to take the radius of a sphere as input and print the volume and surface area of that sphere.
2. Write a C program to take a 5-digit number as input and calculate the sum of its digits.
3. Write a C program to take three sides of a triangle as input and verify whether the triangle is an isosceles, scalene or an equilateral triangle.
4. Write a C program that will take 3 positive integers as input and verify whether they form a Pythagorean triplet or not.
5. Write a C program to print all prime numbers between a given range of numbers.
6. Write a C program to define a function that will take an integer as argument and return the sum of digits of that integer
7. Write a C program to define a macro that can calculate the greater of two of its arguments. Use this macro to calculate the greatest of 4 integers.
8. Write a C program to define a recursive function that will print the reverse of its integer argument.
9. Write a C program to print the sum of first N even numbers using recursive function.
10. Write a C program to sort an array using Bubble sort technique.
11. Write a C program that will take the elements of two integer arrays of 5 element each, and insert the common elements of both the array into a third array (Set intersection)
12. Write a C program to take 5 names as input and print the longest name.
13. Write a C program to define a structure *Student* that will contain the *roll number*, *name* and *total marks* of a student. The program will ask the user to input the details of 5 students and print the details of all the students whose total marks is greater than a given value.
14. Write a C program to define a union *Contact* that will contain the members *Mobile no* and *E-mail id*. Now define a structure *Employee* that will contain *name*, *UID*, *PhNo*, *emailId* and a variable of type *Contact* as members. The program will ask the user to give the details of five Employees including contact details. Print the details of all the Employees.
15. Write a C program that will ask the user to input a file name and copy the contents of that file into another file.
16. Write a C program that will take any number of integers from the command line as argument and print the sum of all those integers.
17. Write a C program to process sequential file for payroll data.
18. Write a C program to process random file of library data.

REQUIRED SOFTWARE/ SOFTWARE TOOL:

- Linux Operating System and/ or Windows Operating System
- Turbo C/C++ IDE.

Recommended Book:

- 1) C Programming Laboratory by Dr. Nandini S. Sidnal, Wiley India, 2012

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:	Bachelor of Engineering	Semester:	III
Branch:	Information Technology	Code:	333363(33)
Subject:	Digital Electronics and Logic Design Laboratory		
Total Lab Periods:	48	Batch Size:	30
Maximum Marks:	40	Minimum Marks:	20

List of Experiments: (At least Ten experiments are to be performed by each student)

1. To study the characteristics and operations of TTL Inverters, OR, AND, NOR and NAND gate using ICs.
2. To study NAND and NOR gates as a universal logic.
3. To study and prove Demorgan's Theorem .
4. To design half and Full adder circuits using logic gates.
5. To design half and full subtractor circuits using logic gates.
6. To study the binary parallel adder.
7. To design 4 bit magnitude comparator circuits.
8. To study the 7 segment decoder.
9. To design 4:16 decoder using two 3:8 decoder and four 2:4 decoder
10. To design 16: 1 multiplexer using 4:1 Multiplexer.
11. To study various types of flip flops using logic gates and ICs.
12. To design Mode-N and divide by K counter.
13. To construct a 4 bit binary to gray converter and vice versa using IC 7486 .
14. To study Up-Down counter.
15. To study programmable shift registers.

List of Equipments /Machine Required:

- Logic gate trainer
- Digital ICs Trainer
- Various ICs 7400,7402,7404,7408,7432,7486,74138,74151,74155 etc.

Recommended Books:

M.M. Mano : "Digital Logic and Computer Design"

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program: **Bachelor of Engineering**
Branch: **Information Technology**
Subject: **Web Technology Laboratory**
Total Lab Periods: **48**
Maximum Marks: **40**

Semester: **III**
Code: **333364(33)**
Batch Size: **30**
Minimum Marks: **20**

List of Experiments: (At least Ten experiments are to be performed by each student)

1. To Develop and demonstrate a XHTML document that illustrates the use external style sheet, ordered list, table, borders, padding, color, and the tag.
2. To Develop and demonstrate a XHTML file that includes JavaScript script for the following problems:
 - a) Input: A number n obtained using prompt, Output: The first n Fibonacci numbers
 - b) Input: A number n obtained using prompt, Output: A table of numbers from 1 to n and their squares using alert
3. To Develop and demonstrate a XHTML file that includes Javascript script that uses functions for the following problems:
 - a) Parameter: A string, Output: The position in the string of the left-most vowel
 - b) Parameter: A number, Output: The number with its digits in the reverse order
4. To Develop and demonstrate, using Javascript script, a XHTML document that collects the RollNo (the valid format is: A digit from 1 to 4 followed by two upper-case characters followed by two digits followed by two upper-case characters followed by three digits; no embedded spaces allowed- e.g. 1AB23CD356, 1GC13CS345) of the user. Event handler must be included for the form element that collects this information to validate the input. Messages in the alert windows must be produced when errors are detected.
5. To Modify the above program to get the current semester also (restricted to be a number from 1 to 8)
6. To Develop and demonstrate, using JavaScript script, a XHTML document that contains three short paragraphs of text, stacked on top of each other, with only enough of each showing so that the mouse cursor can be placed over some part of them. When the cursor is placed over the exposed part of any paragraph, it should rise to the top to become completely visible.
7. To Modify the above document so that when a paragraph is moved from the top stacking position, it returns to its original position rather than to the bottom
8. To Design an XML document to store information about a student in an engineering college affiliated to CSVTU. The information must include RollNo, Name, Name of the College, Branch, Year of Joining, and e-mail id. Make up sample data for 5 students. Create a CSS style sheet and use it to display the document.
9. To Create an XSLT style sheet for one student element of the above document and use it to create a display of that element.
10. To Write a Perl program to display various Server Information like Server Name, Server Software, Server protocol, CGI Revision etc.
11. To Write a Perl program to accept UNIX command from a HTML form and to display the output of the command executed.
12. To Write a Perl program to accept the User Name and display a greeting message randomly chosen from a list of 4 greeting messages.
13. To Write a Perl program to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings.
14. To Write a Perl program to display a digital clock which displays the current time of the server.
15. To Write a Perl program to insert name and age information entered by the user into a table created using MySQL and to display the current contents of this table.
16. To Write a PHP program to store current date-time in a COOKIE and display the "Last visited on" date-time on the web page upon reopening of the same page.
17. To Write a PHP program to store page views count in SESSION, to increment the count on each refresh, and to show the count on web page.
18. To Create a XHTML form with Name, Address Line 1, Address Line 2, and E-mail text fields. On submitting, store the values in MySQL table. Retrieve and display the data based on Name.
19. Using PHP and MySQL, develop a program to accept book information viz. Accession number, title, authors, edition and publisher from a web page and store the information in a database and to search for a book with the title specified by the user and to display the search results with proper headings.

List of Equipments/Machine/Software required:

Dual Core/Core I3 PC, Ubuntu/Fedora/Debian or any Open Source operating System, Mozilla Firefox/Netscape Navigator Web Browser.

Recommended Books:

1. HTML Complete Reference- Tata McGraw hill
2. HTML and XML: An Introduction NIIT, Prentice-Hall of India
3. Building Enhanced HTML Help with DHTML and CSS by Jeannine M.E.Klien. Pearson Education
4. HTML for the World Wide Web, Fifth Edition, with XHTML and CSS
5. Visual QuickStart Guide 5th Edition Elizabeth Castro, Pearson Education Sams Teach Yourself HTML & XHTML in 24 Hours 6th Edition Dick Oliver, Michael Morrison, Pearson Education

Chhattisgarh Swami Vivekanand Technical University, Bhilai

Name of program:	Bachelor of Engineering	Semester:	III
Branch:	Information Technology	Code:	333365(46)
Subject:	Value Education	Total Tutorial Periods:	NIL
No. Of Periods:	2 Periods/Week	Minimum Marks:	24
Maximum Marks:	40		

Course Objectives:

1. This course is designed to provide the importance of education with why, what & how.
2. To impart students with an understanding of fundamental humanitarian viewpoint and its outcomes.
3. To provide the knowledge about whole existence and its impact on values.
4. To bring the awareness about life long exercise so that they can fulfill their responsibility towards themselves, the family, the society, the planet.

UNIT- I Aim of Education and Necessity for Value Education: Education in values/wisdom/etc and education in traits/technologies/etc as the two fundamental strands of education; Answer to the frequently asked questions such as “Why to do studies”, “What studies to do in overall”, “How to do studies in a proper way”, “How to think systematically and talk systematically”

UNIT-II Humanitarian Viewpoint and Basic Human Objective: Meaning and concept of happiness, Need for a fundamental viewpoint to judge things in all cases of human concerns, Proposal of the natural path of humanitarian coexistentialism; Consciousness development and its expression; Fundamental want of sustainable happiness in human being; Understanding the distinct activities and needs of self (I) and body in human being; Fundamental goal of human being; Sustainable-solution in individual (At the place of delusion); Sustainable-prosperity in family (At the place of poverty); Sustainable-cooperation in society (At the place of competition); Sustainable-coexistence in planet (At the place of struggle)

UNIT- III Elements of Holistic and Systematic Perspective: Need for study of fundamental information categories to develop holistic perspective; Particular-time actions and general-time laws; Need for fundamental information sequence to develop systematic perspective, Some examples for systematic study sequence

UNIT-IV Elements of Society-friendly and Environment-friendly Goals: Elements of Knowledge of whole existence; Elements of Knowledge of human being; Elements of fundamental Values and Wisdom; Value spectrum with reference to general relationships and particular relationships of the objects in nature; Elements of History and Contemporarity used to set current goals; Elements of Sciences and Techniques to formulate methods to achieve goals; Elements of Motoricity and Mattericity to make actions to execute the methods

UNIT-V Lifelong Exercise for All-round Sustainability: Collecting information for sustainability issues; Motivating people towards sustainable life-style; Ability to identify and develop appropriate technologies and management patterns for society-friendly and environment-friendly systems for production /protection/ utilization/ experimentation ; Ability to establish and execute the fundamental five-fold system in order to ensure sustainable peace-and-prosperity worldwide.

Text Books:

Value Education for Consciousness Development by Dr P B Deshmukh, Radha K Iyer, and Deepak K Kaushik (2nd Edition, 2012, ISBN: 978-81-924034-0-3)

Reference Books:

1. International Research Handbook on Values Education and Student Wellbeing by Terence Lovat, Ron Toomey, Neville Clement (Eds.), Springer 2010, ISBN: 978-90481-86747
2. Values Education and Lifelong Learning: Principles, Policies, Programmes by David N Aspin and Judith D Chapman (Eds.); Springer 2007, ISBN: 978-1-4020-6183-7
3. Fundamentals of Ethics for Scientists and Engineers by E G Seebaur and Robert L Berry, 2000, Oxford University Press