

Chhattisgarh Swami Vivekanand Technical University, Bilai

SCHEME OF TEACHING & EXAMINATION

SECOND SEMESTER - MASTER OF COMPUTER APPLICATIONS (INTEGRATED)

S. No	Board of Study	Subject Code	Subject	Periods per week			Scheme of Exam			Total Marks	Credits L+(T+P)/2
							Theory/Practical				
				L	T	P	ESE	CT	TA		
1	Computer Applications	421211 (21)	Digital Electronics	4	1	0	80	20	20	120	5
2	Computer Applications	421212 (21)	Programming in C Language	4	1	0	80	20	20	120	5
3	Applied Mathematics	421213 (14)	Mathematical Foundations of Computer Science	4	1	0	80	20	20	120	5
4	Humanities	421214 (46)	Communication Skills - II	4	1	0	80	20	20	120	5
5	Management	421215 (76)	Accounting & Management Control	4	1	0	80	20	20	120	5
6	Computer Applications	421221 (21)	Digital Electronics Lab	0	0	6	50	-	25	75	3
7	Computer Applications	421222 (21)	Programming in C Lab - II	0	0	6	50	-	25	75	3
8	Humanities	421223 (46)	Personality Development – II	0	0	2	-	-	50	50	1
9			Library	0	0	1	-	-	0	0	-
Total				20	5	15	500	100	200	800	32

ESE: End Semester Examination CT: Class Test TA: Teacher's Assessment L: Lecture T: Tutorial
P: Practical.

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Semester: II
Subject : Digital Electronics
Total Theory Periods : 40

Branch: Computer Applications
Code : 421211 (21)
Total Tutorial Periods : 10

Total Marks in End Semester Exam : 80

Minimum no. of class tests to be conducted : 2

UNIT-1 Number systems : Binary number system, Octal & Hexa-decimal number system, Conversion of Number System, r' s & (r-1)'s complement, Arithmetic operation on Binary numbers and over flow conditions, integer and floating point representation, character codes (ASCII, EBCD IC), Error detection and correction codes, Gray code, BCD, Excess-3 code.

UNIT-2 Logic Gates: AND, OR, NOT GATES and their Truth tables, NOR, NAND & XOR gates, Alternative logic gate representation. Boolean Algebra: AND, OR, Inversion, Basic Laws of Boolean Algebra, Minimization techniques.

UNIT-3 Flip-flops: Basic flip flop or latch, Types of Flip Flop: R-S, D, J-K, T, Master Slave, and Edge-Triggered flip-flop, State Realization of one Flip Flop Using Other Flip Flop, Digital integrated circuit: logic circuit families, Transistor transistor logic, Emitter coupled logic, Metal oxide semi conductor, gate complecity, IC packages.

UNIT-4 Combinational circuits: Multiplexers, Demultiplexers, Decoders & Encoders, Half Adder, Full Adder, Half Subtractor, Full Subtractor, n-Bit parallel adder-Bit parallel subtractor, Look Ahead carry generator, binary adder-subtractor, introduction to sequential circuit

UNIT-5 Registers and Counters: Shift Registers, Types of registers, register transfer language, Inter register transfer: parallel transfer, serial transfer, bus transfer, memory transfer, basic registers connected to common bus, Universal Shift Register with parallel load, Bidirectional Shift register, counter, Asynchronous/Ripple counter, synchronous counter

Text Book :

1. Morris Mano, *Digital Logic*, Prentice Hall of India.

Reference Books:

1. Taub & Schelling, *Digital Integrated Electronics*, McGraw-Hill International Edition
2. Charles H. Roth, Jr. *Fundamentals of Logic Design*, Jaico Publishing House, 2000.
3. Donald D. Givone, *Digital Principles and Design*, Tata McGraw-Hill, 2003.
4. Bartee, *Digital Computer Fundamentals*.

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Semester : II

Subject : Programming in C Language

Total Theory Periods : 40

Total Marks in End Semester Exam : 80

Minimum no. of class tests to be conducted : 2

Branch : Computer Applications

Code : 421212 (21)

Total Tutorial Periods : 10

UNIT-1 Functions: introduction of C functions, User defined and library functions, definition, declaration, Calling of functions, Function arguments, argument passing: call by value and call by reference, return statement , macro verses function, Recursion. Searching(Linear and binary Search) and sorting (Bubble and Selection) .Storage class specifier - auto, extern, static, register.

UNIT-2 Pointer: Definition & declaration, pointer assignment, pointer to pointer, pointer & arrays, passing entire array to function, pointers and arrays, array of pointer to string, Pointer to structures, use of pointer. Dynamic memory Allocation concepts and functions : malloc(), calloc(),realloc(),free() .

UNIT-3 Command line arguments, Basic input/output library functions: Single character input/output i.e. getch(), getchar(),getche(),putchar(),putch().String input output: gets(),puts(), sscanf(), sprintf(). Opening and closing of files : fopen(), fclose().different file modes, FILE,file pointers.

UNIT-4 Simple file operations:Character I/O,string I/O,word I/O,Formatted input/output : fprintf() , fscanf().Block Read/Write: fread(),fwrite().,text versus binary mode ,structure and files operations, detecting error in reading & writing, Random access file functions(lseek,fseek,ftell,rewind).

UNIT-5 Components of VDU: Display Adapters, Display Screens (monitor), Video Display modes, resolution Text or Graphics: Color in text in modes, color in graphic mode, Graphic programming: lines, stylish lines, drawing & filling images, patterns with differences, bar () Filling regular & non-regular shapes of palettes & colors, outputting text, justifying text, a bit of animation, system matrices.

Text Book:

1.LET US 'C' by Y.Kanetkar(BPB)

Reference Books:

1. Programming in 'C' Balaguruswami
2. First course in Programming with 'C', T.Jeyapoovan(VIKAS)
3. The C programming Language by Brain W Kernigham and dennis M Ritchie
4. Practical C programming,3rd edition(anetshell handbook)O'Relly
5. Computer Programming and IT (for RTU) by Ashok N Kamthane et.al, Pearson Education, 2011.

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Semester: II

Subject : Mathematical Foundation Of Computer Science

Total Theory Periods : 40

Total Marks in End Semester Exam : 80

Minimum no. of class tests to be conducted : 2

Branch : Computer Applications

Code: 421213 (14)

Total Tutorial Periods : 10

Unit-1 Mathematical Logic & Boolean Algebra Statements & Notation, Connectives, Normal Forms. Basic concepts of Boolean algebra, Boolean functions, Applications of Boolean Algebra in switching circuits, logic circuits, karnaugh map method for simplification of Boolean expression.

Unit-2 Ordered Structures, Relations & Functions Tuples, Lists, Strings & Languages, Numerals. Relation, properties of Relation, Partial order Relation, Lattices. Function, properties of Function, Composition of Functions, The map function & some useful functions.

Unit-3 Construction Techniques & Grammars Inductively defined sets, Numbers, Strings, Lists, Binary Trees, Cartesian product of sets, Recursive functions and procedures, Grammars.

Unit-4 Graph Theory Basic concepts of graph theory, Paths and Circuits, Trees and Fundamentals circuits, Matrix Representation of Graphs, Directed Graphs.

Unit-5 Group Theory & Coding : Basic concepts of Group Theory, Homomorphism & Isomorphism of groups, Cosets and Lagrange's Theorem, Elements of Coding Theory, Group codes, Decoding, Hamming Matrices, The Parity check & Generator Matrices.

Text Books:

1. James L. Hein, Discrete Structure, Logic and Computability, Narosa Pub. House.
2. Tremblay, J.P. & Manohar .R., Discrete Mathematical Structures with Applications to Computer Science, Tata McGraw Hill.
3. Swapan Kumar Sarkar, A Textbook of Discrete Mathematics, S.Chand

Reference Books:

1. Ralph, Grimaldi, Discrete and Combinatorial Mathematics, Pearson Education.
2. N .Deo, Graph Theory with Applications to Engineering & Computer Science, Prentice Hall.
3. Kolman, B, Busby, R.C. Ross, S.C. Discrete Mathematical Structures, Pearson Education.
4. Liu, C.L. Elements of Discrete Mathematics, Tata McGraw Hill.

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Semester: II

Subject: Communication Skills – II

Total Theory Periods: 40

Total Marks in End Semester Exam: 80

Minimum no. of class tests to be conducted: 2

Branch: Computer Applications

Code: 421214 (46)

Total Tutorial Periods: 10

- UNIT-1** Corporate Communication; Formal and Informal Communication, Grape vine Communication, Preparing summary and abstract of the text, Note Taking, Note Making Its Types & Importance.
- UNIT-2** Report & Proposal Writing: Report & its meaning, its types& layout; Proposal & its meaning, Its types & layout, Writing reports & proposals, Topic sentence, Paragraphing, Paraphrasing.
- UNIT-3** **Listening** Skills: Meaning, types and process of listening, elements importance and principles of effective listening, Difference between listening and hearing, barriers to listening.
- UNIT-4** Presentation strategies: purpose, organizing contents, preparing outlines of slides, voice dynamics, body language.
- UNIT-5** Précis Writing: Steps of Précis Writing, D os and Don'ts of Précis Writing. Principle Notices- General\ Public Notices, Tender Notices, Quotation, Sending Replies, Interview s. Audio-Visual Communications, Telephonic Conversation.

Text Books:

1. MaltiAgarwal, "Professional Communication", Krishna Publication, Meerut
2. MaltiAgarwal, "Remedial English Language", Krishna Publication, Meerut
3. BhanuRanjan, "Communication Skills", DhanpatRai Publication, Delhi
4. AshaKaul, "Communication Skills", Macmillan Publishers
5. MosamSinha, "Professional Communication", KedarNath Publication, Meerut
6. MosamSinha, "Remedial English Language", KedarNath Publication, Meerut

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Semester: II

Subject : Accounting And Management Control

Total Theory Periods : 40

Total Marks in End Semester Exam : 80

Minimum no. of class tests to be conducted : 2

Branch : Computer Applications

Code : 421215 (76)

Total Tutorial Periods : 10

UNIT-1 Meaning and objects of accounting, Accounting Cycle, Accounting concepts and conventions, accounting equations, rules of journalizing, ledger posting.

UNIT-2 Cash book, preparation of trial balance, trading and profit and loss account and balance sheet with adjustments relating to closing stock, outstanding expenses, prepaid expenses, Accrued income depreciation, Bad debts, provision for bad debts, provision for discount on debtors and creditors.

UNIT-3 Basic concepts of cost accounting, elements of cost, classification of cost, preparation of cost sheet, inventory pricing, numerical through FIFO and LIFO methods.

UNIT-4 Cost volume, profit analysis, standard costing computation of material and labor variances, budgetary control, preparation of cash budget and flexible budget, Zero base budgeting.

UNIT-5 Management control and its characteristics, goals and strategies, structure and control. Responsibility centers and control centers: concept of responsibility centers, revenue centers, profit centers and investment centers, introduction of transfer pricing.

Text Books:

1. Bhattacharya S. K. and Dearden John, " Accounting for Management", Prentice Hall of India, New Delhi.
2. Chadwick, " The Essence of Financial Accounting", Prentice Hall of India, New Delhi.

Reference Books:

1. Chadwick, " The Essence of Management Accounting", PHI, India.
2. Subhash Sharma, "Management Control Systems (Text & Cases)", Tata McGraw Hill.
3. P. Sarvancel, " Management Control Systems"
4. Grewal, " Introduction to Book Keeping".

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Semester: II

Subject : Digital Electronics Lab

Total Periods : 60

Total Marks in End Semester Exam : 50

Branch : Computer Applications

Code : 421221 (21)

Experiments to be performed:

1. Practical of Logic gates (AND, OR, NOR, XOR, NAND)
2. Practical of Flip-Flop (JK, D,T etc.)
3. Practical of Counter & Shift Register.
4. Practical of Timer IC555.
5. Practical of Multiplexer & Demultiplexer
6. Practical of Encoder & Decoder.
7. Practical of Analog to Digital Converter.
8. Practical of Digital to Analog Converter.
9. Practical of Soitt trigger.
10. Practical of Half & Full Adder.

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Semester: II

Branch : Computer Applications

Subject : Programming in C Lab – II

Code : 421222 (21)

Total Periods : 60

Total Marks in End Semester Exam : 50

Experiments to be performed:

1. Functions :
 - a. Write a program to find out the factorial of a given number
 - b. Write a program to find out the fibonacci series upto given number of terms
 - c. Write a program check whether the entered number is a prime no or not using function.
 - d. Write a program to find out the greatest values through function .
2. Recursion :
 - a. Write a program find out the factorial of a given number .
 - b. Write a program to generate Fibonacci series upto given number of terms.
 - c. Write a program to find out the sum of individual digit of the entered number.
3. Pointer and arrays and functions :
 - a. Write a program to access array elements using pointer.
 - b. Write a program to find out the sum of an array elements using pointer and function.
 - c. Write a program to find out the greatest value from an array using pointer and function.
 - d. Write a program to arrange the array elements using pointer and function.(bubble sort)
 - e. Find out the length of character array using pointer and function.
 - f. Copy one string to another using pointer and function.
 - g. Concatenate two string using pointer and function.
 - h. Arrange the name using character pointer array.
4. Files :
 - a. Write a program to copy the content of one file to another
 - b. Write a program to write the data into a file and read the data from the file and display on screen.
 - c. Write a program to create a structure employee and store the values in a file and display its record.
 - i. Using fread() and fwrite()
 - ii. Using fscanf() and fprintf()
5. Command Line Arguments :
 - a. Write a program to copy the content of one file to another .
 - b. Write a program to count the total no of characters in a file.
6. Write a program to demonstrate the use of malloc()function
7. Write a program to demonstrate the use of calloc() function
8. Write a program to demonstrate the use of realloc() and free() function.

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Semester: II

Branch : Computer Applications

Subject : Personality Development – II

Code : 421223 (46)

Total Periods : 20

UNIT-1: ORIENTATION Concept of Motivation ,Types of Motivation , People Skills General Awareness

UNIT-2: MEMORY MANAGEMENT Memory and Retention Techniques, Mind Mapping , Reading Skills, Listening Skills, Revision Techniques, Examination Skills

UNIT-3: COMMUNICATION EFFECTIVENESS Fluency Enhancement, Removal of barriers to communication, Group Discussion, Role Play Anchoring ,Voice Modulation Management

UNIT-4: COMPREHENSIVE COMMUNICATION Principles of Communication , Art of effective Public Speaking, Written Communication Skills, Principles of Effective Writing , Reading Habit, Development Oral Presentation Skills

UNIT-5 PRESENTATION SKILLSTechniques of Presentation ,Methods of preparing Presentation ,Removal of stage fear ,Tools of Presentation (Transparencies, Slides & Audio-Visual Tools) ,Project work