



BCA (Bachelor of Computer Applications)
BCA (Semester-II)

Course Code	US02ABCA51	Title of the Course	Lab-Communication Skills in English-II
Total Credits of the Course	2	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. To process information using a variety of media2. To use appropriate phrases for performing language functions3. To edit, select and present information in a format/ perspective4. To listen and reduce information to a point form5. To read and to expand from points to paragraph6. To predict, comprehend, infer and synthesize information7. To question, probe, and arrive at information through discussions, dialogues and interviews.
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Course Content		
Unit	Description	Weightage* (%)
1.	Reading Skills <ul style="list-style-type: none">– Mechanics of Reading i.e. Eye Movement and Different Reading Styles– Issues of Reading Speed and Comprehension Value– Reading Gears for different reading purposes– Skimming & Scanning Skills– Barrier of Reading	10
2.	Listening & Feedback Skills <ul style="list-style-type: none">– Importance and purpose of Listening.– Barriers to Effective Listening.– Ways of improving Listening Skills.– Giving Feedbacks i.e Confirmatory and corrective	10
3.	Writing Skills <ul style="list-style-type: none">– Job Application and Resume Writing– Writing E-mails, Notice Writing– Paragraph Writing i.e. Topics sentence and supporting sentence, attributes of a good paragraph, types of paragraphs.	60
4.	Speaking Skills <ul style="list-style-type: none">– Presentation Skills– Notions and Functions of everyday usage– Interview Skills– Connectives and Linkages	20





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Syllabus with effect from the Academic Year 2021-2022

Teaching-Learning Methodology	Oral-Direct instructions, Audio Video, Structural Approach, Lexical Approach, Inquiry base learning, Dictation, Role play , Self-learning, Language Games and Task-based teaching.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage (%)
1.	University Examination	100

Course Outcomes: Having completed this course, the learner will be able to	
1.	process information using a variety of media
2.	use appropriate phrases for performing language functions
3.	edit, select and present information in a format/perspective
4.	listen and reduce information to a point form
5.	read and expand from points to paragraph
6.	predict, comprehend, infer and synthesize information
7.	question, probe and arrive at information through discussions, dialogues and interviews.

Suggested References:	
Sr. No.	References
1.	Rajendra Pal and J S Korlahalli, essentials of Business Communication, Sultan Chand and sons www.britishcouncil.com
2.	Chrissie Wright, Communication Skills, Jaico Publication.
3.	Sunita Mishra and C. Murali Krishna, Communication Skills for Engineers Pearson Education.
4.	Meenakshi Raman and Sangita Sharma, Technical Communication; Principles and Practice, Oxford University Press.
5.	On We Go, BBC's Audio-Visual Course.





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Course Code	US02CBCA51	Title of the Course	Advanced C Programming
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	To understand 1. concepts of functions, structures and unions. 2. the fundamentals of pointers and file handling.
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Course Content		
Unit	Description	Weightage* (%)
1.	User-Defined Functions <ul style="list-style-type: none">- Introduction and need of user defined Functions- Components of user defined functions- Methods of passing parameters to functions- Recursion	25
2.	Structures, Unions and Command Line Arguments <ul style="list-style-type: none">- Introduction to structures- Structures and arrays- Structures within structures- Structures and functions- Unions- Command Line Arguments	25
3.	Usage of Pointers <ul style="list-style-type: none">- Introduction, usage and understanding of pointers- Declaration and initialization of pointer variables- Accessing variables through Pointers- Chain of Pointers (Pointer to Pointer)- Pointer arithmetic expression- Pointers and arrays- Pointers as function arguments- Pointer and structure- Dynamic memory allocation	25
4.	Usage of File Handling <ul style="list-style-type: none">- Introduction to File Handling- File Access Modes- Input Output Operations on files- Error Handling during I/O operations	25





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Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	implement programs based on the concepts of functions, structures and unions.
2.	implement the programs based on pointers and work with files.

Suggested References:	
Sr. No.	References
1.	Balaguruswami : Programming in ANSI C., Tata McGraw Hill Publication.
2.	Kernighan B., Ritchie D. : The C Programming Language, Prentice Hall, 1988.
3.	Cooper H. & Mullish H : The Sprit of C, Jaico Publication House, New Delhi.





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Course Code	US02CBCA52	Title of the Course	Web Application Development – II
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	1. To learn the basic concepts of scripting. 2. To study fundamentals of JavaScript development.
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Course Content		
Unit	Description	Weightage* (%)
1.	Introduction to Scripting <ul style="list-style-type: none">– Introduction to Scripting– Client Side Scripting vs. Server Side Scripting– How the Web works– Introduction to JavaScript– Applications and Advantages of JavaScript– Using JavaScript on a webpage	25
2.	Basics of JavaScript <ul style="list-style-type: none">– JavaScript basics : Syntax, Data Types, Variables, Literals, Type Casting, Operators– User interaction through dialog boxes– Built-in functions– Flow Control statements: Decision-Making and Looping	25
3.	Advanced JavaScript – I <ul style="list-style-type: none">– Arrays– User-defined functions, String Object (length, charAt, indexOf, substr, toLowerCase, toUpperCase), Math Object (PI, abs, ceil, floor, max, min, round), Date Object (getDate, getDay, getFullYear, getMonth, getTime, getHours, getMinutes, getSeconds, setDate, setFullYear, setMonth, setTime, setHours, setMinutes, setSeconds)	25
4.	Advanced JavaScript – II <ul style="list-style-type: none">– Introduction to Document Object Model (DOM), DOM Hierarchy, Understanding objects & Collections in DOM, HTML Form Hierarchy– Accessing Form elements (Text, Radio, Checkbox, Dropdown, Button), Event handling	25





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Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand the basic concepts of scripting.
2.	carry out web page development with the use of JavaScript.

Suggested References:	
Sr. No.	References
1.	Ivan Bayross, "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI", BPB, 2004.
2.	Douglas E Comer: The Internet, PHI, Second Edition, May 2000.
3.	Wilton P., Jeremy McPeak: Beginning JavaScript, 4 th Ed., Wiley Pub.
4.	Danny Goodman, Machael Morrison: "JavaScript Bible", 6 th Ed., Wiley Pub.
5.	Kogent Learning Solution Inc., "HTML5 Black Book".





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Course Code	US02CBCA53	Title of the Course	Database Management System - I
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. Basic concepts of DBMS, Data Models and Relational Data Model terminologies.2. SQL data types, SQL statements and concepts like DML, DDL, DCL, TCL.3. working with tables, applying and modifying constraints, functions, join queries.
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Course Content		
Unit	Description	Weightage* (%)
1.	Introduction to DBMS <ul style="list-style-type: none">– Database and DBMS.– Basics of databases (Data, Information, field, record, file)– Database Management System – meaning, advantages, disadvantages– Components of a DBMS– Classification of DBMS users , Structure of DBMS– Three level Architecture of Database- external, conceptual and internal– Data Models concepts: Hierarchical, Network and Relational– Relation data models concept, terminologies: tuple, attribute, domain, relation– Relationships and relationship types– Keys: super key, candidate key, primary key, alternate key, foreign key	25
2.	Structured Query Language-I <ul style="list-style-type: none">– SQL : introduction , advantages and disadvantages– Data types– Types of SQL Statements : DDL DML ,DCL, TCL– Working with SQL*Plus – overview and basic commands of SQL Plus– Tables: creation, removal and alteration– Null values, tab table, dual table– Table data: insertion, selection, updation, deletion	25





3.	Structured Query Language-II <ul style="list-style-type: none"> – Operators – Arithmetic, Relational, Logical, Range Searching, Pattern Matching and Set – Filtering data using WHERE clause, ordering using order by – Pseudo columns – Rowid, Rownum, User, Uid, Sysdate – Data constraints – Modifying constraints and use of user_constraints 	25
4.	Structured Query Language-III <ul style="list-style-type: none"> – Functions – Introduction, types of functions (scalar and aggregate) – Scalar : numeric functions , character functions, date functions conversion functions – Aggregate Fun : Avg, Count, Max, Min, Sum – Grouping data using group by and having – Query and subquery, types of subquery – Creation and manipulation of database objects – indexes, views, sequences and synonym 	25

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand the basic concepts of DBMS, Data Models, Relational Data model terminologies.
2.	understand SQL data types, SQL statements and concepts like DML, DDL, DCL, TCL.
3.	work with tables, apply and modify constraints, Implement functions and work with join queries .





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Suggested References:

Sr. No.	References
1.	An introduction to Database Systems: Bipin C. Desai, Galgotia Publications Pvt. Ltd.
2.	Ivan Bayross : SQL,PL/SQL The programming language of Oracle, 4 th edition, BPB Publications.
3.	Understanding Database Management Systems : S. Parthsarthy and B.W.Khalkar, First edition – 2007, Master Academy.





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Course Code	US02CBCA54	Title of the Course	Practicals
Total Credits of the Course	6	Hours per Week	12

Course Objectives:	1. To study the concepts of functions, structures and unions in C programming language. 2. To understand the concepts of pointers and file handling.
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Course Content		
	Description	Weightage* (%)
	Part-1 : Practical based on US02CBCA51	35
	Part-2 : Practical based on US02CBCA52	35
	Part-3 : Practical based on US02CBCA53	30

Teaching-Learning Methodology	Project work in small groups, Hands on Training ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	implement programs based on concepts of functions, structures and unions in C programming language.
2.	implement programs based on concepts of pointers and file handling.





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Course Code	US02SBCA51	Title of the Course	Mathematics
Total Credits of the Course	2	Hours per Week	2

Course Objectives:	<ol style="list-style-type: none">1. To teach basic concepts of vectors and matrices.2. To impart knowledge on basic concepts of graph theory and trees.3. To introduce students to elementary data analysis with different methods like discrete and continuous frequency distribution, graphical representation.
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Course Content		
Unit	Description	Weightage* (%)
1.	Vectors and Matrices – Vectors in R^n , dot product and norm. Matrix addition and scalar multiplication, Matrix multiplication, transpose of matrix, square matrices: Diagonal, upper and lower triangular, symmetric, skew symmetric, orthogonal matrices. Determinants of matrices up to order 3.	25
2.	Graph Theory – Graph, multigraph, degree of vertex, paths, connectivity, subgraph, connected components, cut points, bridges, Special graphs: complete, regular and bipartite graphs, matrices and graphs.	25
3.	Planar Graphs and Trees – Planar graphs, Maps and regions, Euler's formula, Nonplaner graphs, coloured graphs, colors and maps, trees.	25
4.	Elementary Data Analysis – Discrete and continuous frequency distribution, cumulative frequency distribution, graphical representation, Measures of central tendency: Mean, Median, Mode.	25

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	gain knowledge of basic concepts of vectors and matrices.
2.	have basic understanding of the concepts of graph theory and trees.
3.	familiar with elementary data analysis with different methods like discrete and continuous frequency distribution, graphical representation.

Suggested References:	
Sr. No.	References
1.	S.Lipschutz and Marc Lars Lipson : Discrete Mathematics, Schaum's series (International edition,1992).
2.	Vinay Kumar: Discrete Mathematics (BPB Publication, First edition - 2002)
3.	S. C. Gupta, Fundamentals of Statistics, Himalaya Publishing House, 2004

