BCA (Bachelor of Computer Applications)
BCA (Semester–I)

Course Code	**US01ABCA51**	Title of the Course	**Lab-Communication Skills in English - I**
Total Credits of the Course	**2**	Hours per Week	**4**

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

Course Content		
Unit	Description	Weightage* (%)
1.	**Reading Skills** – 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 – Barriar of Reading	10
2.	**Listening & Feedback Skills** – 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** – Form words properly using prefixes/suffixes – Writing Social letters , Formal Leave Letters – Paragraph Writing i.e. Topics sentence and supporting sentence, attributes of a good paragraph, types of paragraphs.	60

4.	**Speaking Skills** – Use greeting and formulae in everyday conversation – Notions and Functions of everyday usage – Parts of Speech, Types of Sentences, Tenses, Imperatives, Modals, Voice, Determiners, Concord, Interrogation and Negation, basic prepositions Use of Registers. – Homophones, Homonyms	20

Teaching-Learning Methodology	Oral-Direct instructions, Audio Video, Structural Approach, Lexical Approach, Inquiry base learning, Dictation, Role play , Language Games and Task-based teaching.

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.	Meenakshi Raman & Sangita Sharma, Technical Communication; Principles and Practice , Oxford University Press.
2.	Chrissie Wright, Communication Skills, Jaico Publication.
3	Grant Taylor, English Conversation Practice, New Delhi: Tata McGraw Hill.
4.	R P Bhatanagar and R T Bell, Communication in English, Hyderabad, Orient Longman.
5.	D Sasikumar and P V Dhamija, Spoken English, New Delhi: Tata McGraw Hill.
6.	M. Farhathullah, Communication Skills for Technical Students.
7.	Champa Tickoo and Jaya Sasikumar, Writing with a Purpose, Chennai, OUP.
8.	David Jolly, Writing Tasks: Authentic task approach to individual Writing needs, Cambridge University Press.

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BCA (Bachelor of Computer Applications)
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Course Code	**US01CBCA51**	Title of the Course	**Programming Fundamentals Using C**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	1. To provide basic understanding of problem solving using algorithms and flowcharts. 2. To impart knowledge on fundamental concepts of the C Programming language.

Course Content		
Unit	Description	Weightage* (%)
1.	**Concept of Algorithm, Flowchart and Languages** – Concept of an algorithm and a flow chart, need and definition – Symbols used to draw a flow chart – Typical (primitive) examples of flow charts and algorithms – Generations of computer languages – High-level and low-level languages – Translators – Introduction to editors and details about one of the editors	25
2.	**Basics of Programming** – History and Importance of C – Basic Structure of C Program – Variables and Constants – Data types in C – User Defined Type declaration - typedef – Operators and Expressions & its type conversion – Formatted I/O statements, Assignment statements	25
3.	**Decision Making, Looping and Arrays** – Decision making and Branching Statement – Decision making and looping statement – Arrays	25
4.	**Strings and Library Functions** – Introduction – Declaring and Initializing String – Operations on Characters – String Handling Functions – Common standard library functions	25

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations.

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.	solve problems using algorithms and flowcharts.
2.	develop simple programs using the C Programming language.

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

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BCA (Bachelor of Computer Applications)
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Course Code	**US01CBCA52**	Title of the Course	**Web Application Development – I**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	To impart the knowledge of the Internet, WWW, HTML5, DHTML and advanced CSS.

Course Content		
Unit	Description	Weightage* (%)
1.	**Web Page Designing – I** – Introduction to Internet & Services provided by the Internet (eMail, HTTP, FTP, Telnet, WWW), Some basic terminology and concepts (URL, webpage, web site, web servers, web browsers, search engines), An Introduction to HTML, HTML tags, Structure of an HTML document, Text and paragraph formatting, Ordered and Unordered lists, Hyperlinks, Images	25
2.	**Web Page Designing – II** – HTML tables, Frames, Framesets, Designing HTML forms, Multimedia tags, Advance Elements of HTML5: !Doctype, meta, Input Controls (number, date, time, calendar, ranges), Multimedia tags (<audio>, <video>)	25
3.	**DHTML & Cascading Style Sheets** – Introduction to DHTML, Applications of DHTML, Components of DHTML, Introduction to Cascading Style Sheets (CSS), Ways of specifying style – inline, internal, external, Basic Syntaxes, ID and CLASS selectors, SPAN, DIV	25
4.	**Advanced Cascading Style Sheets** – Fonts, Color, Background, Text, Border, Lists, Layers, Margin, Links, Position.	25

Teaching-Learning Methodology	Material for this course will be presented using multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

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.	have knowledge of Internet and WWW.
2.	develop Web pages using HTML5, DHTML and advanced CSS.

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.	Xavier C: World Wide Web Design with HTML, Tata McGraw Hill Publication, 2000.
4.	Eric Meyer: Cascading Style Sheets – The Definitive Guide, O'Reilly – SPD, First Edition, 2000.
5.	HTML 5 for Web Designers (By: Jeremy Keith).
6.	Manuals of suitable packages.
7.	Faithe Wempen "Step by Step HTML5", PHI.
8.	Thomas A. Powell, HTML & CSS: The Complete Reference, Fifth Edition, Tata McGraw-Hill.

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BCA (Bachelor of Computer Applications)
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Course Code	**US01CBCA53**	Title of the Course	**Fundamentals of Computer Organization**
Total Credits of the Course	**4**	Hours per Week	**4**

Course Objectives:	1. To provide basic understanding of logical organization and architecture of a computer. 2. To introduce fundamental concepts related to number systems and representation of information.

Course Content		
Unit	Description	Weightage* (%)
1.	**Introduction to Computer Systems and Number Systems** – Block diagram of a simple computer and significance of different functional units – Evolution of computers – Definitions of the terms : hardware, software – Applications of computers – Binary, octal, decimal, and hexadecimal number systems – Conversion of numbers among binary, octal, decimal, and hexadecimal number systems – Addition and subtraction of binary numbers	25
2.	**Representation of Information and Processor Organization** – Representation of integers – Character codes (ASCII, Unicode) – Error detection and correction codes – Instruction execution cycle – CPU organization	25
3.	**Parallel Instruction Execution, Memory Organization and Introduction to parallel instruction execution** – Array processors – Multiprocessors – Multiple functional units – Pipelining – Primary memory : Introduction to RAM, ROM, Cache, Registers – Secondary memory : Various types and organization of secondary storage devices such as magnetic disks, optical disks, flash memories	25

4.	**Addressing Techniques and I/O Devices** – Addressing techniques like Immediate, Direct, Indirect, Register, Indexing and Stack – Common types of Input/Output devices, such as Monitors, keyboard, mouse Printers (Line, Dot Matrix, Inkjet, Laser) Scanners	25

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations

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 fundamental concepts related to organization of a computer system.
2.	understand the fundamental concepts related to number systems and representation of information.

Suggested References:	
Sr. No.	References
1.	Tanenbaum A.S., Structured Computer Organization, Prentice-Hall of India Pvt Ltd, 5th edition, 2005.
2.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt Ltd(4th Edition), 2003.
3.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6th Edition, 2003.

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BCA (Bachelor of Computer Applications)
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Course Code	**US01CBCA54**	Title of the Course	**Practicals**
Total Credits of the Course	**6**	Hours per Week	**12**

Course Objectives:	1. To impart knowledge to design algorithms and flowcharts. 2. To impart skill to solve simple programming problems.

Course Content		
	Description	Weightage* (%)
	Part-1 : Practical based on US01CBCA51	35
	Part-2 : Practical based on US01CBCA52	35
	Part-3 : Practical based on US01CBCA53	30

Teaching-Learning Methodology	Project-based learning in small groups and Hands on training through required ICT tools.

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.	design algorithms and flowcharts.
2.	solve simple programming problems in C.

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Course Code	**US01SBCA51**	Title of the Course	**Environmental Studies**
Total Credits of the Course	**2**	Hours per Week	**2**

Course Objectives:	1. To make younger generation environment conscious. 2. To expose the students to the fundamental concepts of environment so that they can appreciate the importance of individual efforts to protect and preserve our environment. 3. To encourage them to make judicious use of our resources so that it will not only help present generation but also the future generations in meeting their needs.

Course Content		
Unit	Description	Weightage* (%)
1.	**Introduction to Environmental studies** – Definition, Scope and importance of Environmental Studies – Multidisciplinary nature of environmental studies – Component of Environment: Atmosphere, Hydrosphere, Lithosphere, Biosphere – Biogeochemical cycles : Carbon cycle and Nitrogen cycle – Concept of sustainability and sustainable development.	25
2.	**Ecosystems** – Definition, Structure of ecosystem – Abiotic and Biotic components (Producers, Consumers and Decomposers) – Functions of Ecosystem :Energy flow in an ecosystem , Food chains, Food webs with examples – Types of Ecosystem; Forest ecosystem, Lake/Pond ecosystem, Desert ecosystem	25

3.	**Natural Resources** – Classification -Renewable & Non-renewable Resources and types – Land resources & Land degradation, Soil erosion & Conservation – Forest Resources - Forest wealth, Deforestation: Causes and impacts – Water Resources- Use and over-exploitation of surface and ground water, floods and droughts – Energy resources- use of alternate energy sources, growing energy needs – Conservation of Natural resources	25
4.	**Biotic Interactions** – Positive Interactions with suitable examples A. Mutualism B. Commensalism C. Proto-cooperation – Negative Interactions with suitable examples A. Exploitation B. Competition C. Antibiosis	25

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.

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 fundamental concepts of Environment so that they can appreciate the importance of individual efforts to protect and preserve our environment.
2.	make judicious use of our resources that will not only help present generation but also the future generations in meeting their needs.

Suggested References:	
Sr. No.	References
1.	Ecology and Environment by P. D. Sharma.
2.	Fundamentals of Ecology by E. P. Odum.
3	Ecology by Mohan P. Arora.
4.	Fundamentals of Ecology by M. C. Dash.
5.	Environmental Science by S. C. Santra.
6.	An Introduction to Environmental Engineering & Science by Gilbert N Master.
7.	Encyclopaedia of Environmental Pollution and Control by R. K. Trivedi.
8.	Ecology and Sustainable development by P.S. Ramkrishana.
9.	Environmental Conservation; Fundamentals of Forestry Vol 5 by S.S. Negi, Bishen Singh, Mahendra Pal Singh.

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