

Bachelor of Computer Application (BCA)

(3 years – Six Semester Full Time Course)

Semester: II	Subject Code: BCA201	Name :Communication Skills-II

Teaching & Evaluation Scheme

	Subject	Name of the	Teaching Scheme (Hours)				Evaluation Scheme								
Sr.								1	Theory			Prac	tical (N	larks)	
No ·	Code	Subject	Th	Tu	Pr	Total	Sessio Exa			e		Pr/ Viv	TW	Total	Total
							Mark s	Hrs	Mar ks	Hr s		a			
1	BCA201	Communication Skills-II	4	1	-	5	30	1.5	70	2.5	100	-	-	-	100

Objectives:

- To enhance knowledge of English language and to develop communication skills.
- To acquire a new perspective on communicative English
- To improve and to extend the range of communication in English.
- To develop written and speech communication.

Prerequisites: Basic knowledge of English language.

Sr .No.	Course Contents	Number of Hours
	Part A Conversation Practice	
1	Describing Things around you, Describing places: saying what there is	3
2	Introduction - as an Art, Talking about people, Saying what they do	3
3	Talking about routine, saying what people do or don't do, information through graphs, tables, maps	3
4	Talking about past events, talking about things happening 'now', saying when things /events happened, describing scenes, events meeting people, exchanging greetings spoken skills	3
5	talking about past intentions & future plans	3
6	Expressing time, talking about Public Transport Asking about information regarding travelling, using dictionary Expressing time, talking about Public Transport	3

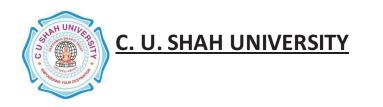


	Talking about what you can do/ can't do, saying what you would do,			
7	giving advise	3		
	talking about obligations, sharing views			
	Part B Literary Text			
0	Text 1 (The old Man & the Sea by Ernest Hemingway - A Nobel	10		
8	&Pulitzer Prize Winner	10		
9	Text 2 Wing Word (Selected Poems)	9		
	Part C Grammar			
	a) Direct - Indirect Speech			
10	b)Phrases & Clauses	6		
10	c) Causal Verbs	0		
	c) Degree of Comparison			
11	Translation Studies	r		
11	a)Selected paragraphs for translation	2		
		48		

• At the end of the course the students endowed with good communication skill.in English language.

Books Recommended:

- 1,"The old man and the sea"
- 2, "Winged word a collection of poems" (The teacher is free to select any five poems from collection)



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Semester: II

Subject Code: BCA202

Name:Mathematics

Teaching & Evaluation Scheme

Sr. Subj		Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme									
	Subject							r	Гheory			Practical (Marks)				
No.	Code			Th	Tu	Pr	Total	Sessio Exa		University Exam T		Total	Pr/ Viv	TW	Total	Total
							Mark s	Hrs	Mar ks	Hr s		a				
1	BCA202	Mathematics	4	1	-	5	30	1.5	70	2.5	100	-	-	-	100	

Objectives:

• This course provides the non- science, mathematics and business student the foundational introduction to the fundamental concepts in Mathematics.

Prerequisites: A basic understanding of Mathematical Operations.

Sr. No.	Course Contents	Number of Hours
1	Set Theory Introduction to set theory Methods of representation of set Operations on set and its properties	4
2	De'Morgans Law Cartesian product, Typical examples	3
3	Real time arithmetic Percentage ,Ratio and proportion Profit and loss ,Simple and compound interest	5
4	Matrix Introduction Types of matrices (Row ,column, square, Diagonal, transpose, unit, null matrix)	3
5	Operations on matrix Properties of transpose Adjoint of square matrix Inverse of square matrix	5



-	Trunical arrange	
	Typical examples	
6	Reasoning-I Series completion test Coding and decoding test	5
7	Reasoning-II Direction sense test Mathematical ability test Data interpretation	5
8	Co-ordinate geometric-I Introduction Quadrants and lines Distance between two points Distance between two points	3
9	Co-ordinate geometric-II Section formula Area of triangles Typical examples Typical examples	5
10	Arithmetic progression Sequence, series Arithmetic progression Definition Nth term , sum of N terms	3
11	Geometric progression Definition Nth term, sum of N terms	3
12	Harmonic progression Harmonic progression	2
13	Mean Arithmetic Mean, Geometric Mean Harmonic Mean Relation between A.M, G.M and H.M Typical examples	2
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• At the end of this course the students have advanced knowledge of mathematics.

Books Recommended:

1, "Mathematical & statistical foundation of computer science", C Jamnadas& Co(New Edition-2013).
2, "BCA Advanced Mathematics", H.R. Vyas, B.S. Shah Publication(3rd Edition-2007)
3, "Advanced Mathematics", RaviGor, NiravPublication(4th Edition-2006)
4, "A Mordern approach to verbal and non-verbal reasoning", R. S. Aggrawal, S. Chand, Publication(New Edition) Edition-2011).

5, "Mathematics for MBA", R. S. Aggarwal, S. Chand, Publication



Bachelor of Computer Application (BCA)

(3 years – Six Semester Full Time Course)

Subject Code: BCA203

Name:Advance C & Data Structure

Teaching & Evaluation Scheme

Sr. Subje			Teaching Scheme (Hours)				Evaluation Scheme								
	Subject	Name of the						[Theory			Practical (Marks)			
No.	Code	Subject	Th	Tu	Pr	Total	Sessio Exa		University Exam		Total	Pr/ Viv	-	Total	Total
							Mark s	Hrs	Mar ks	Hr s		a			
1	BCA203	Advance C & Data Structure	4	-	4	8	30	1.5	70	2.5	100	30	20	50	150

Objectives:

Semester: II

- To impart knowledge of advanced C programming language.
- Pre re quisites: Basic knowledge of C Language.

Sr. No.	Course Contents	Numbers of Hours
1	Arrays & UDF Handling arrays (declaring & initialization, passing arrays to functions) Declaration, definition and calling of UDF Passing parameters in UDF and retuning values	4
2	Pointers & StructureDeclaring and initializing pointersAdvantages and disadvantages of pointersPassing pointers to functionsRelation between pointers and arraysStructure declaration , Member accessing using pointer	4
3	Advance C Dynamic allocation and de-allocation of memory : function malloc(size), function calloc(n,size), function free(block)	3
4	Algorithms & its Complexity A Typical example Algorithm description ,Sub-algorithms Space complexity and Time complexity Big-O Notation, Big-Omega notation	4
5	Searching Linear search ,Binary search	2
6	Sorting Bubble sort ,Insertion sort,Selection sort	4



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7	Elementary Data Structure Primitive and Non Primitive data structures Linear and nonlinear structures	2
8	Stack Operations on stack Implementation of stacks using arrays	3
9	Queue Operations on queue Array implementation of queues Circular queue Circular queue with array implementation	4
10	<u>Evaluation of expressions using stacks</u> Postfix expressions Prefix expression	3
11	Singly Link List Introduction to Singly linked lists Implementation of linked list, Insertion of a node at the beginning Insertion of a node at the end, Insertion of a node after a specified node Traversing the entire linked list, Deletion of a node from linked list	3
12	Doubly linked list Implementation of doubly linked list Circular linked list, Implementation of circular linked list Applications of the linked lists	4
13	TreeBasic terminology, Properties of a tree, Binary treesProperties of binary trees,Traversals of a binary tree:In order traversal, Post order traversal, Preorder traversal	4
14	<u>Graph</u> Introduction, Adjacency matrix, adjacency lists Graph traversal Depth first search (DFS) Concept Breadth first search (BFS) Concept	4
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Learning Outcomes:

At the end of the course the students will be endowed with Advance level of C language using DMA, creating • a linked list, stack, queue and graph.

Books Recommended:

- 1, "Data Structure through C/C++", R.B.Patel, Khanna Publication
- 2, "Data and File Structure", Trembley& Sorenson, TMH Publication
- 3, "Data Structure & algorithms Using C", R.S.Salaria, Khanna Publication 4, "Data structure through C/C++", Tennaunbuam
- 5, "Data Structures and Algorithms", Aho Alfred V., Addison Wesley,



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Semester: II	Subject Code: BCA204	Name: Web Scripting Language

Teaching & Evaluation Scheme

			Teaching Scheme (Hours)				Evaluation Scheme										
Sr. Subject	Subject]	Theory			Practical (Marks)					
Sr. No.	Subject Code	Name of the Subject	Th	Tu	Pr	Total	Sessio Exa		University Exam		e e		Total	Pr/ Viv	TW	Total	Total
							Mark	Hrs	Mar	Hr		a					
		Web Scripting					S		ks	S							
1	BCA204	Language	4	-	4	8	30	1.5	70	2.5	100	30	20	50	150		

Objectives:

• To make familiar students with HyperText Markup Language (HTML) elements to form the building blocks for developing websites.

Pre re quisites: Basic knowledge of computer.

Sr. No.	Course Contents	Number of Hours
1	HTMLThe Structure of a Page.Links and Navigation.Colors, Images, and Objects.Tables ,Forms, Frames.Deprecated and Browser-Specific Markup	5
2	DHTML JavaScript Objects and Dynamic HTML Some examples of Dynamic HTML	3
3	XHTML Introduction to XHTML HTML v/s XHTML XHTML syntax	4
4	CSS Introduction of Style sheet Types of Style sheet Class & ID	3
5	CSS Property CSS Font Property, CSS Text Property, CSS Background Property, CSS Border	4

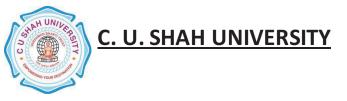


	Property, CSS List Property	
6	Java Script Basics Introduction Operator, Conditional Structure & LoopingStructure	3
7	<u>JavaScript Object</u> User Define Object, Document Object, History Object, Navigator Object, Form Object & Elements	4
8	JavaScript Functions Dialog Boxes, Arrays, User Define Function Built-in Functions :String, Math, Date, Array	5
9	Events in Java Script onclick, ondblclick, onblur,onfocus, onchange, onkeypress, onkeydown, onkeyup,onMousemove, onmouseout, onsubmit, onreset, onselect,onload, onunload, timer event	5
10	XML Introduction to XML XML Namespaces.Validation. Document Type Definitions.XML Schemas. RELAX NG.	5
11	XML Processing XPath.XSLT.	2
12	Introduction Databases & Programming in XML XQuery, the XML Query Language. XML and Databases. The XML Document Object Model (DOM). Simple API for XML (SAX).	5
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• Successful completion of this course will enable students to create web sites from scratch.

Books Recommended:

- 1, "Beginning Web Programming with HTML, XHTML, and CSS", Jon Duckett, Wrox Publication.
- 2, "Beginning JavaScript", Paul Wilton, Wrox Publication.
- 3, "Practical HTML 4.0", Lee Philips, PHI Publication.
- 4, "World wide web design with HTML", C Xavier, TMH Publication.
- 5, "XML A Beginner's Guide", Dave Mercer, Osborne
- 6, *"HTML, DHTML, JavaScript, Pearl & CGI"*, BPB Publication.



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Semester: II	Subject Code: BCA205	Name:Project Analysis & Design

Teaching & Evaluation Scheme

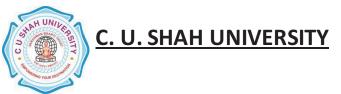
			Teaching Scheme (Hours) Evaluation			ation Sc	Scheme									
Sr.	Subject	piect Name of the Theory		Theory Practical (Ma			larks)									
No.	Code	Subject	Th	Tu	Pr	Total	Sessio Exa			University Exam To		Pr/ Viv	TW	Total	Total	
							Mark s	Hrs	Mar ks	Hr s			a			
1	BCA205	Project Analysis & Design	4	-	-	4	30	1.5	70	2.5	100	-	-	-	100	

Objectives:

• To impart the knowledge of system development starting with analysis and also using different tools and methodology.

Pre-requisites:No prior knowledge required to develop a system.

Sr. No.	Course Contents	Numbers of Hours
1	<u>Overview</u> System, subsystem, business system information system Categories of information system System analyst, the role and task of systemanalyst	4
2	System development SDLC	2
3	<u>System development tools</u> Tools for system development Managing project review and selection	4
4	System requirements tools-I Fact finding techniques: Interview ,Questionnaire, Record review, Observation	2
5	System requirements tools-II Decision Tree, Decision Table	4
6	Structured Analysis DFD notations, Physical & Logical DFD	5



	Developing DFD, Data dictionary	
7	Prototype Development & CASE Purpose of prototyping Steps in prototype method, Use of prototypes Role of CASE tools, Categories of Automated tools	5
8	System Design Objectives in designing an information system Elements of design. Design of input, Design of output ,Design of files	5
9	Design of output Output objectives Types of output, Presenting information, Designing printed output	4
10	Design of input Objectives of input design, Capturing data for input, Input validation	4
11	Design of files Basic File terminology Types of files, Methods of file organization	4
12	Design of database Relationships in data, Entity relationships Data models: Hierarchical data model, Network data model Introduction to normalization	5
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• At the end of this course, the students can analyze, design and develop a mini project.

Books Recommended:

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1, "Analysis and design of information system", James A Senn, TMH Publication.

2, "Analysis and design of information system", V. Rajaraman, PHI Publication.

- 3,"Software Engineering: A Practitioner's Approach ",Roger S Pressman, Tata Graw-Hill Publication
- 4, "Fundamentals of Software Engineering", RAJIB MALL, PHI Publication

5, "Software Engineering", Ian Sommerville, Addison -Wesley Publication.