



**Faculty of Computer Science**

**Bachelor of Science (Information Technology) – B.Sc. (I.T.)**  
**(3 years – Six Semester Full Time Course)**

Semester: II

Subject Code: BIT201

Name: Communication Skills-II

**Teaching & Evaluation Scheme**

Sr. No.	Subject Code	Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme								
			Th	Tu	Pr	Total	Theory				Practical (Marks)			Total	
							Sessional Exam		University Exam		Total	Pr/Viva	TW		Total
							Marks	Hrs	Marks	Hrs					
1	BIT201	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.

**Pre-requisites:** Basic knowledge of English language.

**Course outline:**

Sr.No.	Course Contents	Number of Hours
<b>Part A Conversation Practice</b>		
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



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

- 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: BIT202

Name: Computer Oriented Mathematical Reasoning

**Teaching & Evaluation Scheme**

Sr. No.	Subject Code	Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme								
			Th	Tu	Pr	Total	Theory					Practical (Marks)			Total
							Sessional Exam		University Exam		Total	Pr/Viva	TW	Total	
							Marks	Hrs	Marks	Hrs					
1	BIT202	Computer Oriented Mathematical Reasoning	4	1	-	5	30	1.5	70	2.5	100	-	-	-	100

**Objectives:**

- To impart the numerical mathematical solution techniques.

**Pre-requisites:** A basic understanding of Mathematical techniques.

**Course outline:**

Sr. No.	Course Contents	Number of Hours
1	<b>Linear system of equation-I</b> Solution of linear equation using direct methods(gauss –elimination with proof)	4
2	<b>Linear system of equation-II</b> Solution of linear equation using direct methods(gauss- Jordan with proof)	4
3	<b>Interpolation-I</b> Definition, finite- difference forward- difference table, backward-difference table	5
4	<b>Interpolation-II</b> Newton forward difference formula, Newton backward difference formula	5
5	<b>Interpolation-III</b> Langrage’s interpolation	2
6	<b>Transportation-I</b> Meaning, method of finding initial solution using least cost method.	3



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7	<b><u>Transportation-II</u></b> Method of finding initial solution using north west corner method.	3
8	<b><u>Transportation-III</u></b> Method of finding initial solution using vogel's approximation method.	3
9	<b><u>Iterative Methods for finding roots-I</u></b> Bisection, False Position	5
10	<b><u>Iterative Methods for finding roots-II</u></b> Secant Method, Newton Raphson	5
11	<b><u>Numerical Integration-I</u></b> Trapezoidal*, Simpson's 1/3* & 3/8* rules.	5
12	<b><u>Numerical Integration-II</u></b> 2-point Gauss Quadrature formulas	4
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### **Learning Outcomes:**

- At the end of this course the students will have advanced knowledge of numerical mathematical solution.

### **Books Recommended:**

- 1, "*Computer Oriented Numerical Methods*", V. Rajaraman, PHI Publication(3<sup>rd</sup> Edition)
- 2, "*Numerical Method*" E. Balagurusamy, TMH Publication(7<sup>th</sup> Edition)
- 3, "*Computer Oriented Numerical Methods*", R.S.Salaria, Khanna Book Publication(4<sup>th</sup> Edition)
- 4, "*Numerical Methods*", Dr. V. N. Vedamurthi, Dr. N. Ch. S. N. Lyengar, VikasPublication(2010)
- 5, "*Business Mathematics*", J.C.Shah ,R.K.Joshi, MPH Publication(1<sup>st</sup> Edition-2001)



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 (3 years – Six Semester Full Time Course)

**Semester: II**

**Subject Code: BIT203**

**Name: Advance C & Data Structure**

**Teaching & Evaluation Scheme**

Sr. No.	Subject Code	Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme								
			Th	Tu	Pr	Total	Theory					Practical (Marks)			Total
							Sessional Exam		University Exam		Total	Pr/Viva	TW	Total	
							Marks	Hrs	Marks	Hrs					
1	BIT203	Advance C & Data Structure	4	-	4	8	30	1.5	70	2.5	100	30	20	50	150

**Objectives:**

- To impart knowledge of advance C programming language.

**Prerequisites:** Basic knowledge of C Language.

**Course outline:**

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



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7	<b><u>Elementary Data Structure</u></b> Primitive and Non Primitive data structures Linear and nonlinear structures	2
8	<b><u>Stack</u></b> Operations on stack, Implementation of stacks using arrays	3
9	<b><u>Queue</u></b> Operations on queue Array implementation of queues Circular queue, Circular queue with array implementation	4
10	<b><u>Evaluation of expressions using stacks</u></b> Postfix expressions, Prefix expression	3
11	<b><u>Singly Link List</u></b> 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	<b><u>Doubly linked list</u></b> Implementation of doubly linked list Circular linked list Implementation of circular linked list Applications of the linked lists	4
13	<b><u>Tree</u></b> Basic terminology, Properties of a tree, Binary trees Properties of binary trees, Traversals of a binary tree: In order traversal, Post order traversal, Preorder traversal	4
14	<b><u>Graph</u></b> 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, "Let us C", YKanetkar, BPB Publication (3<sup>rd</sup> Edition).



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**Semester: II**

**Subject Code: BIT204**

**Name: Web Scripting Language**

**Teaching & Evaluation Scheme**

Sr. No.	Subject Code	Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme								
			Th	Tu	Pr	Total	Theory					Practical (Marks)			Total
							Sessional Exam		University Exam		Total	Pr/Viva	TW	Total	
							Marks	Hrs	Marks	Hrs					
1	BIT204	Web Scripting 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-requisites:** Basic knowledge of computer.

**Course outline:**

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



6	<b><u>Java Script Basics</u></b> Introduction, Operator, Conditional Structure & Looping Structure	3
7	<b><u>JavaScript Object</u></b> User Define Object, Document Object, History Object, Navigator Object Form Object & Elements	4
8	<b><u>JavaScript Functions</u></b> Dialog Boxes, Arrays, User Define Function Built-in Functions :String, Math, Date, Array	5
9	<b><u>Events in Java Script</u></b> onclick, ondblclick, onblur, onfocus, onchange, onkeypress, onkeydown, onkeyup, onMousemove, onMouseout, onsubmit, onreset, onselect, onload, onunload, timer event	5
10	<b><u>XML</u></b> Introduction to XML XML Namespaces. Validation. Document Type Definitions. XML Schemas. RELAX NG.	5
11	<b><u>XML Processing</u></b> XPath, XSLT.	2
12	<b><u>Introduction Databases &amp; Programming in XML</u></b> XQuery, the XML Query Language. XML and Databases. The XML Document Object Model (DOM). Simple API for XML (SAX).	5
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**Learning Outcomes:**

- 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, “*Beginning JavaScript*”, Paul Wilton Wrox Publication.





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Semester: II

Subject Code: BIT205

Name: SAD-SE

**Teaching & Evaluation Scheme**

Sr. No.	Subject Code	Name of the Subject	Teaching Scheme (Hours)				Evaluation Scheme								
			Th	Tu	Pr	Total	Theory				Practical (Marks)			Total	
							Sessional Exam		University Exam		Total	Pr/Viva	TW		Total
							Marks	Hrs	Marks	Hrs					
1	BIT205	SAD-SE	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.
- To impart the concept of Software engineering and project management and scheduling.

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

**Course outline:**

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



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	Developing DFD, Data dictionary	
7	<b><u>System Design</u></b> Objectives in designing an information system Elements of design, Design of input, Design of output, Design of files	5
8	<b><u>Software Engineering</u></b> Changing nature of software, A Layered Technology	5
9	<b><u>Process Models</u></b> Classical waterfall, Prototyping model, Spiral model	5
10	<b><u>Software Project Management</u></b> Responsibility of software project manager, Project Planning Matrices for project size estimation	5
11	<b><u>Project Scheduling</u></b> Work break down structure, Gantt Chart, Pert chart	5
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### **Learning Outcomes:**

- At the end of this course the students can analyze, design and develop a mini project.

### **Books Recommended:**

- 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 Practioner’sApprocach*”, Pressman, TMH Publication.
- 4, “*UML – A Beginner’s Guide*”, JassonRoff, TMH Publication.
- 5, “*Software Engineering*”, K. K. Aggarwal, Yogesh Singh, New Age International Publisher