



Faculty of Computer Science

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

Semester: I

Subject Code: BIT101

Name: Communication Skills-I

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	BIT101	Communication Skills-I	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.

Course outline:

Sr. No.	Course Contents	Number of Hours
Part:A Grammar & Vocabulary (Basic Writing Skills)		
1	Parts of Speech	2
2	Concept of Time (Tenses)	5
3	Modals, Auxiliaries	2
4	Connectors	2
5	Transformation:	
	a) Active - Passive Voice	3
	b) Simple. Compound & Complex Sentences	3
	c) Affirmative - Negative - Interrogative	2
6	Subject - Verb Agreement - Concord	2
7	Vocabulary: Synonyms, Antonyms, One Word Substitute, Confusable	1



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8	Comprehension Skills What is Reading Comprehension? reasons for poor reading comprehension How to improve Comprehension Skills Techniques of Reading Comprehension: Skimming, Scanning, Extensive Reading, Aloud Reading, Selected Text for Reading	4
Part:B Phonetics (Speaking)		
	Speech Mechanism	2
	Sounds in English : Vowels & Consonants	4
	Articulation of Vowels	3
	Articulation of Consonants	3
	Accents/Tone	2
	Syllables	2
	Intonation pattern	2
	Phonetic Transcription	4
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Learning Outcomes:

- At the end of the course the learners can communicate well in English language.

Books Recommended:

- 1, “*A Highschool English grammar*”, Wren martin, S. Chand Publication.
- 2, “*An International English grammar*”, Raymond Murphy, Cambridge University Press Publication.
- 3, “*A course in Phonetics & Spoken English*”, Sethi & Dhamija



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Semester: I

Subject Code: BIT102

Name: Computer Basics, Internet and MS-Office

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	BIT102	Computer Basics, Internet and MS-Office	4	-	4	8	30	1.5	70	2.5	100	30	20	50	150

Objectives:

- To provide basic knowledge of computer peripherals, application software, operating system and hardware functions of a computer.
- To impart knowledge of various emerging technologies like Wi-Fi, GIS, GPS etc.

Pre-requisites: Willingness and interest in learning computer is must.

Course outline:

Sr. No.	Course Contents	Number of Hours
1	Computer Basics Definition of computer, Block Diagram Of Computer Characteristics of computer, Generations of computer, Analog computer	4
2	Digital computer Mini, Micro, Mainframe, Super, Hybrid computer	2
3	Number Systems and Conversions: Decimal to Binary, Octal, Hexadecimal Binary to Decimal, Octal, Hexadecimal Octal to Decimal, Binary, Hexadecimal Hexadecimal to Decimal, Binary, Octal	4
4	Complement 1's complement 2's complement Addition of two binary numbers Subtraction of two binary numbers using 1's and 2's complement method	4



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5	Data Representation ASCII, BCD, and EBCDIC, uses of codes, Introduction - Nibble, Bit, Byte, Carry Bit, Parity Bit, Sign Bit, Word: 1. Double Word 2. Quad word	4
6	Input Devices Key board, Mouse, Touch screen, Scanner, OCR, OMR, MICR, OBR, Light pen	4
7	Output Devices CRT, LCD, Plasma, Printers: Impact, Non-Impact	4
8	Storage Devices And Types Of Memory RAM (With Architecture), ROM, PROM, EPROM, EEPROM, Cache Memory, Magnetic Tape, Magnetic Disk, CDs, DVD, Blu-Ray Disc, Pen drive. Port Introduction: USB, Serial, Parallel and PS2	4
9	Overview Computer Languages Computer Languages: Machine level language, Assembly level language, High-level language, Definition of assembler, Compiler and interpreter	4
10	Operating System Concept Definition of Operating System, Concept of Batch OS, Multi-programmed OS, Time Sharing OS, On-Line OS And Real Time OS	3
11	Internet Basics Introduction to Web, Internet requirement, What is Internet? Uses of Internet, Host & Terminals, Common protocols used in Internet, World wide web, Web browsers	3
12	HTML Design Basic concepts of HTML, Use Of Html Document Html Document Structure, Various Html Tags Document Tag, Text Formatting Tag Creating Link With Other Pages, Line Breaks, List Creation, Image Handling In Html, Table Creation, Frames	4
13	HTML Forms Form, Input, Select, Option, Textarea	4
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Learning Outcomes:

- At the end of the course, learner will be aware of computer peripherals and also will be able to make documentation using MS-WORD. Also, will be able to make presentation using MS-Power Point and calculation using MS-EXCEL.

Books Recommended:

- 1, "Computer Fundamentals", P.K.Sinha, BPB Publication.
- 2, "Fundamental of IT for BCA", S. Jaiswal
- 3, "World Wide Web Design With Html", C Xavier, TMH Publication.
- 4, "Fundamental of Computer", V. Rajaraman, PHI Publication
- 5, "Microsoft® Office Word 2007 Step by Step", Joyce Cox and Joan Preppernau, Microsoft Press

Note: In the practical lab students have to do Practical's on MS-OFFICE (MS-word/MS-Excel/MS-Power-point)



Faculty of Computer Science

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

Semester: I

Subject Code: BIT103

Name: Mathematics

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	BIT103	Mathematics	4	-	-	4	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.

Pre-requisites:A basic understanding of Mathematical Operations

Course outline:

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



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6	<u>Reasoning-I</u> Series completion test, Coding and decoding test	5
7	<u>Reasoning-II</u> Direction sense test, Mathematical ability test, Data interpretation	5
8	<u>Integration Part-I</u> Definition of integration, Standard formula	4
9	<u>Integration Part-II</u> Method of substitution, Integration by parts	5
10	<u>Differentiation</u> Definition of derivatives, Rules of differentiation	4
11	<u>Derivatives</u> Derivatives of algebraic , trigonometric, parametric and logarithmic, Derivatives of implicit function	5
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Learning Outcomes:

- 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, Nirav Publication (4th Edition-2006)
- 4, "*A Mordern approach to verbal and non-verbal reasoning*", R.S. Aggrawal, S. Chand, Publication (New Edition-2011).
- 5, "*Mathematics for MBA*", R.S. Aggarwal, S. Chand, Publication



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Semester: I

Subject Code: BIT104

Name: Computer Organization & Architecture

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	BIT104	Computer Organization & Architecture	4	1	-	5	30	1.5	70	2.5	100	-	-	-	100

Objectives:

- To impart the knowledge of computer architecture by following a bottom-up approach: by starting from basic hardware components (transistors and logic gates) to construct more sophisticated circuits (adders, decoders, flip-flops, registers, . . .), which are then combined into memory units, processor units as well as a whole computer system.
- To understand how a modern CPU works

Pre-requisites: Basic knowledge of Computer

Course outline:

Sr. No.	Course Contents	Number of Hours
1	<u>Computer Organization & Data Representation:</u> Introduction to Computer Organization, Computer Design, Computer Architecture, Fixed Point Representation, Parity bit, Floating Point Representation	4
2	<u>Logic Gates</u> Introduction to Logic Gates., Type of gates, Universal Gates, Conversions and applications.	5
3	<u>Boolean Algebra:</u> Definition, Purpose of Boolean Algebra, Boolean function, truth table, logic diagrams	5
4	<u>Map Simplification</u> Karnaugh Map up to 3 variable, Product-of-Sums simplification, Sum of Products, Don't care Condition	6



5	<u>Combinational Circuit</u> Definition, Block Diagrams, Half Adder, Full Adder, Decoders, Encoders, Multiplexers. De-multiplexer	6
6	<u>Sequential Circuit</u> SR Flip Flop, D Flip Flop, JK Flip-Flop, T Flip-Flop, Registers, Shift Registers, Binary Counter	6
7	<u>Central Processing Unit –CPU</u> Introduction, Major Components, Stack Organization : Register Stack, Memory Stack, Polish Notation	5
8	<u>Input- Output Organization</u> Peripherals, memory bus, connection to IO bus to IO devices	5
9	<u>Memory Organization:</u> Definition, RAM, ROM, DMA, DMA Controller, Cache Memory, Virtual Memory	6
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Learning Outcomes:

- At the end of the course the learners will be aware of gates, CPU registers, I/O organization and Memory organization.

Books Recommended:

- 1, “*Computer System Architecture*”, Morris Mano, PHI Publication (3rd Edition).
- 2, “*Digital Logic and Computer Design*”, Morris Mano, PHI Publication.
- 3, “*Modern Digital Electronics*”, R.P. Jain, TMH Publication.
- 4, “*Structure Computer Organization*”, A. S. Tannenbaum, PHI Publication (4th Edition)
- 5, “*Computer Architecture and Organization*”, John P. Hayes, McGraw-Hill (3rd Edition)



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Semester:I

Subject Code: BIT105

Name:Programming In C

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	BIT105	Programming In C	4	-	4	8	30	1.5	70	2.5	100	30	20	50	150

Objectives:

- To introduce the basics of programming to the students. Students will familiar with problem solving techniques.
- To introduce basic and intermediate level concepts and techniques of the C programming language.

Pre-requisites:Awareness of Computer is required.

Course outline:

Sr. No.	Course Contents	Number of Hours
1	<u>Fundamental of 'C'</u> History of C, Importance of C language, Structure of C program, C tokens, variables and data types, comments, constants, Symbolic constant.	5
2	<u>Operators</u> Arithmetic, relational, logical, assignment, bitwise, increment and decrement, conditional, special operators.	3
3	<u>Expression</u> Arithmetic expressions, evaluation of expressions, type conversion, precedence and associativity.	4
4	<u>Control Structures</u> Simple IF statement, if – else statements, Nested if-else, switch statement	4
5	<u>Looping and jumping structures</u> Looping statements, goto statement, break and continue statement.	5



6	<u>Array</u> Concept of array, One and Two dimensional arrays, declaration and initialization of arrays	4
7	<u>String</u> String, String storage, Reading and writing string, String handling functions.	4
8	<u>User Define Functions</u> Concept of user defined functions, function prototype, definition of function, parameter passing, calling a function, category of function, recursive function.	5
9	<u>Structure and Union</u> Basics of structure, structure members, accessing structure members, array of structures, array within structure, size of structures, unions, bit-fields.	4
10	<u>Pointers</u> Basics of pointers, pointer and array, pointer to array, array of pointers, pointer as function argument, function returning a pointer.	5
11	<u>File Management</u> Introduction to file I/O operations on file, Reading from and writing to files, File handling functions, command line arguments.	5
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Learning Outcomes:

- At the end of this course the students can solve problem using C, fundamental of programming language and also improve the programming skills.

Books Recommended:

- 1, “*Programming in ANSI C*”, EBalagurusamy TMH Publication. (4th Edition).
- 2, “*C : The Complete Reference*”, Herbert Schildt, TMH Publication.(4th Edition).
- 3, “*Let us C*”, Y Kanetkar, BPB Publication(3rd Edition).
- 4, “*C Programming Language*”, Brian W. Kernighan(2nd Edition).
- 5, “*The C Programming Language*”,BrainW,Pearson(2nd Edition).