

# UNIVERSITY OF JAMMU

(NAAC ACCREDITED 'A' GRADE' UNIVERSITY)  
Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

Academic Section

Email: [academicsectionju14@gmail.com](mailto:academicsectionju14@gmail.com)

## NOTIFICATION (22/Nov./Adp/68)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Academic Council, is pleased to authorize the adoption of the Syllabi and Courses of Studies in the subject of **Information Technology of Semester Ist and IInd for Four Year Under Graduate Programme (FYUGP) under the Choice Based Credit System as per NEP-2020 (as given in the annexure)** for the examinations to be held in the years as per the details given below:

Subject	Semester	for the examination to be held in the years
Information Technology (B.A/B.Sc.)	Semester-I	December 2022, 2023 and 2024
	Semester-II	May 2023, 2024 and 2025

The Syllabi of the courses are available on the University website: [www.jammuuniversity.ac.in](http://www.jammuuniversity.ac.in)

Sd/-  
DEAN ACADEMIC AFFAIRS

No. F. Acd/II/22/ 9226-9265  
Dated: 7-11-2022

Copy to:

1. Dean, Faculty of Mathematical Sciences
2. HOD/Convener, Board of Studies in Computer Science & IT
3. All members of the Board of Studies
4. C.A. to the Controller of Examinations
5. Director, Computer Centre, University of Jammu
6. Asst. Registrar (Conf. /Exams. UG)
7. Incharge University Website for necessary action please

*Sumitasharma*  
Deputy Registrar (Academic) 7/11/22  
AS Tody  
7/11/22

**B. A. / B. Sc. Honours  
IN  
INFORMATION TECHNOLOGY**

**SYLLABUS**

*Four Year Undergraduate Programme*

*As per NEP 2020 guidelines*

*Under Choice based Credit System*

**FOR THE STUDENTS TO BE ADMITTED IN THE SESSIONS  
2022-23, 2023-24, 2024-25**



## UNIVERSITY OF JAMMU, JAMMU

### Syllabus of B.A/B.Sc. Honours in Information Technology

(Four Year Undergraduate Programme)

**For the students to be admitted in the year 2022-23, 2023-24 and 2024-25**

The B.A/B.Sc. honours programme in Information Technology is a four year undergraduate programme based on Semester System and consists of **eight** semesters. Each semester will be having minimum 90 working days. The student will opt Major and Minor courses from the same discipline. For minor course any subject other than major available in the college shall be chosen from within same discipline. However, Multidisciplinary foundation courses are to be chosen from the disciplines other than that of Major and Minor courses.

#### COURSES OF STUDY

##### Semester - I

S. No.	Course Type	Course No.	Course Title	Credits	Marks				Total Marks
					Theory		Practical/Tutorial		
					Mid Semester	End Exam	Assessment	Exam	
1	Major	UMJITT101	Fundamentals of IT	4(3L+1P)	15	60	10	15	100
2	Minor	UMIITT102	Basics of Computation	4(3L+1T)	15	60	10	15	100
3	MD	UMDITT103	IT : Basics and Application	3	15	60	NA	NA	75
4	SEC	USEITT104	Office Tools	2	10	40	NA	NA	50



**Semester – II**

S. No.	Course Type	Course No.	Course Title	Credits	Marks				Total Marks
					Theory		Practical/Tutorial		
					Mid Semester	End Exam	Assessment	Exam	
1	Major	UMJITT201	Internet and Web Designing using HTML	4(3L+1P)	15	60	10	15	100
2	Minor	UMIITT202	Programming Concepts and Paradigms	4(3L+1P)	15	60	10	15	100
3	MD	UMDITT203	Technical Communication	3	15	60	NA	NA	75
4	SEC	USEITT204	Understanding e-Services	2	10	40	NA	NA	50

**SCHEME OF EXAMINATION**

Each course shall be comprised of Mid Semester Assessment Test and End-Semester Examination. The responsibility of conduct and evaluation of the Mid Semester Assessment test lies with the Course Coordinator. The End Semester Examination shall be conducted by the University and question papers shall be set by the Controller of Examinations. The Mid Semester Assessment marks awarded to the students in each course shall be displayed on the notice board well in advance, at least one week before the commencement of End Semester examination. The 03/04 and 02 credits paper shall have 04 and 03 units, respectively.

Practicals/Tutorials as applicable in a course (Major/Minor) are extension of the theory programme in an inbuilt (3+1) credits course i.e. 03 credits of theory and 01 credit of practical/tutorial. However, 02 credits major course of 5th semester will have only theory component. Each four credits paper will have 75 Marks for theory and 25 Marks for practical/tutorial. The break-up for 75 Marks for theory paper shall contain 15 Marks for Mid Semester Assessment Test and 60 Marks for End semester Examination. There will be continuous assessment of 10 Marks and final examination of 15 Marks for Practical/Tutorial component in each course.



The 03 credits paper shall be of 75 Marks consisting of 60 Marks for external examination and 15 Marks for Mid Semester Assessment test. All 02 credits courses shall be of 50 marks comprising 40 marks for External examination and 10 Marks for Mid Semester Assessment Test.

<b>THEORY</b>		
<b>DESCRIPTION</b>	<b>TIME ALLOTTED</b>	<b>MARKS</b>
<p><b>Mid Semester Assessment Test</b> shall be conducted by the course coordinator after completion of the syllabus up to 50% and the pattern of the examination shall be decided by the respective Board of Studies.</p> <p><b>End Semester University Examination shall be conducted for entire syllabus. The break up is as under:</b></p> <p><b>1. 03 and 04 credits papers</b></p> <p><b>Section A</b> shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 3 Marks.</p> <p><b>Section B</b> shall consist Eight (8) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 12 Marks.</p> <p><b>2. 02 credits papers</b></p> <p><b>Section A</b> shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 2½ Marks.</p> <p><b>Section B</b> shall consist Six (6) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 10 Marks.</p> <p><b>Note: Convener, BOS, can make minor modification in the scheme Skill course, if required. However, it must be clearly reflected in the syllabus.</b></p>	<p>1½ hours</p> <p>03 hours for 03/04 credits</p> <p>2½ hours for 02 credits</p>	<p>15 Marks for 03/04 Credits</p> <p>10 Marks for 02 Credits</p> <p>60 Marks for 03/04 Credits</p> <p>40 Marks for 02 Credits</p>
<b>PRACTICAL/TUTORIAL</b>		
<p>i. Daily evaluation of practical's/tutorials/Viva voce/Records etc.</p> <p>ii. Final Examination</p> <p><b>Note: The BOS shall device the mechanism of Final examination.</b></p>	<p>10 Marks for assessment</p> <p>15 Marks for Final examination</p>	<p>Continuous</p>

Instructions for paper setter

**1. 3 / 4 Credits Paper**

Total marks: 60  
Time allotted: 3 hours

The question paper will be divided into the following two sections. No question shall be repeated in the question paper.

**Section A**

Total of Four (4) short answer questions (one from each unit) shall be set. The candidates are required to attempt all questions. Each question shall be of 3 Marks.

(4 x 3 = 12 marks)

**Section B**

Total of Eight (8) long answer questions (two from each unit) shall be set. The candidates are required to attempt four questions. Each question shall be of 12 Marks.

(4 x 12 = 48 marks)

**Note: The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**

**2. 2 Credits Paper**

Total marks: 40  
Time allotted: 2½ hours

The question paper will be divided into the following two sections. No question shall be repeated in the question paper.

**Section A**

Total of Four (4) short answer questions (at least one from each unit) shall be set. The candidates are required to attempt all questions. Each question shall be of 2½ Marks.

(4 x 2½ = 10 marks)

**Section B**

Total of Six (6) long answer questions (two from each unit) shall be set. The candidates are required to attempt three questions. Each question shall be of 10 Marks.

(3 x 10 = 30 marks)

**Note: The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**



**B. A. / B. Sc. Honours  
IN  
INFORMATION TECHNOLOGY**

**Semester wise Course details**

*Four Year Undergraduate Programme*

*As per NEP 2020 guidelines*

*Under Choice based Credit System*

**FOR THE STUDENTS TO BE ADMITTED IN THE SESSIONS 2022-23, 2023-24, 2024-25**



## IT (Arts and Science) - FIRST SEMESTER

Course: Major  
 Course Credits: (L-P-T)  
 (3-1-0)  
 Total marks: 100

Course Title: Fundamentals of IT  
 Course Code: UMJITT101  
 Mid Semester assessment: 15 Marks of 1.5 hours duration  
 End Semester assessment: 60 Marks of 3.0 hours duration  
 Practical: 25 Marks

*For examinations to be held in Dec 2022, 2023, and 2024*

### Course objectives & learning outcomes:

1. To learn the fundamentals of Information Technology.
2. To gain knowledge of various Input output devices.
3. To learn the basics of Operating systems and networking concepts
4. To brief the students about DOS & Windows.

### UNIT - I

Basics of Information Technology: Data, Information, Information Technology, Components of Computer System: CPU, ALU, Control Unit, Registers, Booting process, Characteristics of computers, History of Computers, Application of computers, Role of IT in Online Teaching –Learning. 15 Hours

### UNIT - II

Hardware: Input and Output devices: keyboard, Scanner, mouse, joystick, Lightpen, trackball, Monitor, Printer, Plotter, Projector. Software: Types of Software: System Software, Application Software. Memory: Types of memory: RAM, types of RAM, ROM, Types of ROM, optical Disk, flash Drive, Memory Hierarchy. 15 Hours

### UNIT - III

Operating system: Introduction, functions of Operating System, types of Operating system, Single user, Multi User, Multitasking, time Sharing operating System. Networking: Introduction, process of communication, types of communication media, Modes of communication: simplex, half duplex, full duplex. WWW and Internet: history and working of Internet, Generation of internet, introduction to world wide web, architecture of www, types of web documents. 15 Hours

### UNIT - IV

Anatomy of Window: Title Bar, Menu Bar, Tool Bar, Scroll Bars, Document Area, and Status Bar.  
 Desktop Elements: Icons, My Computer, Recycle Bin, Taskbar, My Documents.  
 Control panel ,Disk Defragmentation, DOS, Evolution of DOS, Internal Commands : CLS, Ver, COPY, Volume, Date, Time, MD, CD, RD, Copy, Del, Ren, Move etc., External Commands : CHKDSK, FORMAT, Xcopy , Attrib, Defrag etc. 15 Hours

### Suggested readings/ references:

1. Peter Norton's, "Introduction to Computer", TMH
2. Chetan Shrivastava "Fundamentals of Information Technology", Kalyani Publishers
3. Dr MadhulikaJain, " Information Technology Concept", BPB
4. Alexis and Mathews Leon, "Fundamentals of Information Technology", Leon Press
5. P.K. Sinha, "Computer Fundamentals", BPB Publications
6. V. Rajaram, "Fundamentals of Computers", PHI Learning

**IT (Arts and Science) - FIRST SEMESTER**

Course: Major  
Course Credits: (L-P-T)  
(3-1-0)  
Total marks: 100

Course Title: Fundamentals of IT  
Course Code: UMJITT101  
Mid Semester assessment: 15 Marks of 1.5 hours duration  
End Semester assessment: 60 Marks of 3.0 hours duration  
Practical: 25 Marks

*For examinations to be held in Dec 2022, 2023, and 2024*

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS –**

The question paper will be divided into the following two sections. No question will be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 3 Marks.

(4 x 3 = 12 marks)

**Section B** shall consist Eight (8) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 12 Marks.

(4 x 12 = 48 marks)

**Note: -The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**

**Practical/ tutorial Evaluation**

Daily evaluation of practical's/tutorials/Viva voce/Records etc.

10 marks

**Final Examination**

15 Marks

**Pattern for external practical examination**

Practical file	5 Marks
Written examination	5 Marks
Viva-Voce	5 Marks
Total	15 Marks

**Pattern for external tutorial examination**

Assignment file	10 Marks
Viva-Voce	5 Marks
Total	15 Marks



**IT (Arts and Science) - FIRST SEMESTER**

Course: Minor  
 Course Credits: (L-P-T)  
 (3-0-1)  
 Total marks: 100

Course Title: Basics of Computation  
 Course Code: UMIITT102  
 Mid Semester assessment: 15 Marks of 1.5 hours duration  
 End Semester assessment: 60 Marks of 3.0 hours duration  
 Tutorial: 25 Marks

*For examinations to be held in Dec 2022, 2023, and 2024*

**Course objectives & learning outcomes:**

1. To learn the fundamentals of Computer.
2. To gain knowledge of various Input output devices.
3. To learn the basics of Operating systems and networking concepts
4. To brief the students about number system

**UNIT - I**

Basic Applications of Computer; Components of Computer System, Central Processing Unit (CPU), VDU, Keyboard and Mouse, Other input/output Devices, Computer Memory, Concepts of Hardware and Software; Concept of Computing, Data and Information; Applications of IECT; Connecting keyboard, mouse, monitor and printer to CPU and checking power supply. 15 Hours

**UNIT - II**

Software: Types of Software: System Software, Application Software, Hardware: Input and Output devices: keyboard, Scanner, mouse, joystick, Lightpen, trackball, Monitor, Printer, Plotter, Projector. Memory: Types of memory: RAM, types of RAM, ROM, Types of ROM, Types of secondary memory devices, Memory Hierarchy 15 Hours

**UNIT - III**

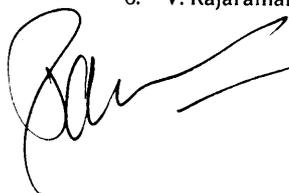
Introduction to operating system and its functions, Types of Operating system: DOS, UNIX, LINUX, Single user, Multi User, Multitasking. Introduction to networks, process of communication, types of communication media, Modes of communication: simplex, half duplex, full duplex. Introduction to World Wide Web and its architecture, history of Internet and its working, generation of Internet. 15 Hours

**UNIT - IV**

Digital Systems and Binary Numbers: Binary numbers, Number - Base Conversions, Arithmetic operations using number system, Data Representation - fixed and floating, Complements (1's and 2's), Binary codes - weighted / non-weighted codes, BCD codes, Excess-3-code, Grey codes, Conversion between codes, Code converters Codes for error detection and correction (Hamming code). 15 Hours

**Suggested readings/ references:**

1. Peter Norton's, "Introduction to Computer", TMH
2. Chetan Shrivastava "Fundamentals of Information Technology", Kalyani publishers
3. Dr Madhulika Jain, "Information Technology Concept", BPB
4. Alexisand Mathews Leon, "Fundamentals of Information Technology", Leon Press
5. P.K. Sinha "Computer Fundamentals", BPB Publications
6. V. Rajaraman "Fundamentals of Computers", PHI Learning



**IT (Arts and Science) - FIRST SEMESTER**

Course: Minor  
Course Credits: (L-P-T)  
(3-0-1)  
Total marks: 100

Course Title: Basics of Computation  
Course Code: UMIITT102  
Mid Semester assessment: 15 Marks of 1.5 hours duration  
End Semester assessment: 60 Marks of 3.0 hours duration  
Tutorial: 25 Marks

*For examinations to be held in Dec 2022, 2023, and 2024*

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS –**

The question paper will be divided into the following two sections. No question will be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 3 Marks.

(4 x 3 = 12 marks)

**Section B** shall consist Eight (8) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 12 Marks.

(4 x 12 = 48 marks)

**Note: -The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**

**Practical/ tutorial Evaluation**

Daily evaluation of practical's/tutorials/Viva voce/Records etc.

10 marks

**Final Examination**

15 Marks

**Pattern for external practical examination**

Practical file	5 Marks
Written examination	5 Marks
Viva-Voce	5 Marks
Total	15 Marks

**Pattern for external tutorial examination**

Assignment file	10 Marks
Viva-Voce	5 Marks
Total	15 Marks



**IT (Arts and Science) - FIRST SEMESTER**

Course:	Multidisciplinary Foundation Course	Course Title: IT Basics and Applications
Course Credits:	(L-P-T) (3-0-0)	Course Code: UMDITT103
Total marks:	75	Mid Semester assessment: 15 Marks of 1.5 hours duration End Semester assessment: 60 Marks of 3.0 hours duration

*For examinations to be held in Dec 2022, 2023, and 2024*

**Course objectives & learning outcomes:**

1. To learn the fundamentals of Information Technology.
2. To gain knowledge of various Input output devices.
3. To learn the basics of Operating systems.
4. To brief the students about e-commerce.

**UNIT - I**

Information Technology Basics: Data, information, Information technology, Components of Computer System: CPU, ALU, Control Unit, Registers, Booting process, Characteristics of computers, History of Computers, Application of computers, Role of IT in Online Teaching -Learning. Storage Fundamentals: Primary Vs Secondary Storage, Primary Storage: RAM ROM, PROM, EPROM, EEPROM. Secondary Storage: hard disks, Optical Disks, Compact Disks, Zip Drive, Flash Drives. 10 Hours

**UNIT - II**

Basic Computer Organization: Role of I/O devices in a computer system. Input Units: Keyboard, Terminals and its types. Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System, Touch Screen, Output Units: Monitors and its types. Printers: Impact Printers and its types. Non Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers. 10 Hours

**UNIT - III**

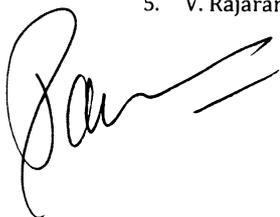
Operating System: Functions, Measuring System Performance, Assemblers, Compilers and Interpreters. Batch Processing, Multiprogramming, Multi Tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux 10 Hours

**UNIT - IV**

Introduction to Electronic Payment System and its types, Strategies for developing electronic commerce web sites, Net marketplaces- characteristics of net marketplaces, types of net marketplaces, E-distributors, E procurement, Exchanges. Online content providers- digital copyrights & electronic publishing. 15 Hours

**Suggested readings/ references:**

1. Chetan Shrivastava "Fundamentals of Information Technology", Kalyani publishers
2. Dr Madhulika Jain, "Information Technology Concept", BPB
3. Alexisand Mathews Leon, "Fundamentals of Information Technology", Leon Press
4. P.K. Sinha "Computer Fundamentals", BPB Publications
5. V. Rajaraman "Fundamentals of Computers", PHI Learning



**IT (Arts and Science) - FIRST SEMESTER**

Course: Multidisciplinary Foundation Course  
Course Credits: (L-P-T)  
(3-0-0)  
Total marks: 75

Course Title: IT Basics and Applications  
Course Code: UMDITT103  
Mid Semester assessment: 15 Marks of 1.5 hours duration  
End Semester assessment: 60 Marks of 3.0 hours duration

***For examinations to be held in Dec 2022, 2023, and 2024***

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS -**

The question paper will be divided into the following two sections. No question will be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 3 Marks.

(4 x 3 = 12 marks)

**Section B** shall consist Eight (8) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 12 Marks.

(4 x 12 = 48 marks)

**Note: -The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**



**IT (Arts and Science) - FIRST SEMESTER**

Course: Skill Enhancement Course (SEC)  
Course Credits: (L-P-T)  
(2-0-0)  
Total marks: 50

Course Title: Office Tools  
Course Code: USEITT104  
Mid Semester assessment: 10 Marks of 1.5 hours duration  
End Semester assessment: 40 Marks of 2.5 hours duration

***For examinations to be held in Dec 2022, 2023, and 2024***

**Course objectives & learning outcomes:**

1. To provide working knowledge of word processing software.
2. To impart the skill to work with features of a spreadsheet software.
3. To develop the ability to prepare PowerPoint presentation.

**UNIT -I**

Word: Text Editor: Types- Line Editor, Word Editor, Page editor and their features. Entering text: selecting, editing, inserting, moving, copying, deleting, undo, redo, spell check. Formatting document: Changing Font type, applying effects, changing color, case, alignment, applying Superscript, Subscript, creating bulleted and Numbered List, Applying Border and Shading, Applying Drop Cap Effect, Header, Footer. Using Clip Art, Word Art. Working with Table: Creating, Entering Data, Modifying, Formatting, Inserting Picture. Copying Formatting to another Selection, Page Formatting, Setting Page Properties, Previewing and Printing a Document, Using Mail Merge. 10 Hours

**UNIT -II**

Excel: Introduction to Row, Cell, Workbook, Worksheet. Components and features of a Worksheet, Moving Around the Spreadsheet, Entering Data, Inserting and Deleting Cells, Columns and Rows, Changing Row Height and Column Width, Types of Data, Performing Calculations, Using Formula, Sorting Data, Custom Sorting, Charts, Filters. AutoFill and Flash Fill, Managing Worksheets, Saving Workbook. 10 Hours

**UNIT-III**

Powerpoint: Starting Powerpoint, Components, Creating and Saving Presentations, Opening, Closing, Running and Exiting a Presentation, Adding and deleting slides to a Presentation, Formatting Text in a slide, Inserting Objects in a Slide, Rotating and Resizing a Picture, Shape, Text or Object, Transitions, Animations and Views. 10 Hours

**Suggested readings/ references:**

1. Joe Habraken, "Microsoft Office Inside Out (Office 2021 and Microsoft 365)", Microsoft Press.
2. Joan Lambert, Curtis Frye, "Microsoft Office 2016 Step by Step", Microsoft Press.
3. Linda Foulkes, "Learn Microsoft Office 2019: A Comprehensive Guide to Getting Started with Word, PowerPoint, Excel, Access, and Outlook", Packt Publishing Limited.



**IT (Arts and Science) - FIRST SEMESTER**

Course: Skill Enhancement Course (SEC)  
Course Credits: (L-P-T)  
(2-0-0)  
Total marks: 50

Course Title: Office Tools  
Course Code: USEITT104  
Mid Semester assessment: 10 Marks of 1.5 hours duration  
End Semester assessment: 40 Marks of 2.5 hours duration

***For examinations to be held in Dec 2022, 2023, and 2024***

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS -**

The question paper will be divided into the following two sections. No question shall be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions (at least one from each unit). The students are required to attempt all questions. Each question shall be of 2½ Marks:

(4 x 2½ = 10 marks)

**Section B** shall consist Six (6) long answer questions (two from each unit). The students are required to attempt three questions. Each question shall be of 10 Marks.

(3 x 10 = 30 marks)

**Note: The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**



**IT (Arts and Science) - SECOND SEMESTER**

Course: Major  
 Course Credits: (L-P-T)  
 (3-1-0)  
 Total marks: 100

Course Title: Internet and Web Designing using HTML  
 Course Code: UMJITT201  
 Mid Semester assessment: 15 Marks of 1.5 hours duration  
 End Semester assessment: 60 Marks of 3.0 hours duration  
 Practical: 25 Marks

*For examinations to be held in May 2023, 2024, and 2025*

**Course objectives & learning outcomes:**

1. To learn the fundamentals of Internet and its different protocols.
2. To gain knowledge of world wide web and different networks.
3. To learn the basics of HTML and formatting tags.
4. To brief the students about HTML frames and other frameworks.

**UNIT - I**

Internet: History of Internet, working of Internet, how to use Internet, Prerequisites for using Internet, ISP, types of ISP, Types of Networks: LAN, MAN, WAN, Network devices: Router, Switch, bridge, hub, gateway, Repeater, Ethernet Internet Protocols: TCP/IP, FTP, HTTP, IP Address, MAC Address, Connecting to Internet, Advantages and disadvantages of using Internet,

15 Hours

**UNIT - II**

Applications of Internet: WWW, VoIP, Chat, email, etc., Introduction and architecture of WWW, Client, Browser, Server, Uniform Resource Locator (URL), Cookies. Internet versus WWW, DNS, Web Documents: Static Documents, Dynamic Documents, Active Documents.

15 Hours

**UNIT - III**

Introduction to HTML, Essential Tags, Tags and Attributes, Text Styles and Text Arrangements, Text, Effects, Exposure to Various Tags (DIV, MARQUEE, NOBR, DFN, HR, LISTING, Comment, IMG), Color and Background of Web Pages, Lists and their Types, Attributes of Image Tag, Hypertext, Hyperlink and Hypermedia, Links, Creating Table, Frame, Form and Style Sheet, Dynamic HTML, Document Object Model, Features of DHTML

15 Hours

**UNIT - IV**

Style Sheet, Dynamic HTML, Document Object Model, Features of DHTML. Introduction, Designing with Style Sheets, Style Sheet Syntax, ID, Class Contextual Selectors, Cascading Order, Properties, Absolute and Relative Positioning, Layering Elements using Z-Index, Animating objects. HTML Frames: frameset, attributes of frame tag, Form Controls: Text Input Controls, Single-line text input controls, Attributes, Password Input controls, Multiple-Line Text Input Controls, Checkbox Control, Radio Button Control, Select Box Control, File Upload Box, Button Controls, Hidden controls, Difference between POST and GET method, action attribute, understanding URL. HTML media, Audio, Video, plug-ins, HTML, YouTube.

15 Hours

**Suggested readings/ references:**

1. Jon Duckett, "HTML and CSS: Design and Build Websites", Wiley
2. Jennifer Robins. "Learning Web Design: A Beginner's Guide to HTML, CSS, Java Script and Web Graphics", Shroff
3. Darshan Magdum, "HTML: Learn Front-end web development", Kindle
4. Jon Duckett, "HTML and CSS: Design and Build Webs", Wiley

**IT (Arts and Science) - SECOND SEMESTER**

Course: Major  
Course Credits: (L-P-T)  
(3-1-0)  
Total marks: 100

Course Title: Internet and Web Designing using HTML  
Course Code: UMJITT201  
Mid Semester assessment: 15 Marks of 1.5 hours duration  
End Semester assessment: 60 Marks of 3.0 hours duration  
Practical: 25 Marks

*For examinations to be held in May 2023, 2024, and 2025*

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS -**

The question paper will be divided into the following two sections. No question will be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 3 Marks. (4 x 3 = 12 marks)

**Section B** shall consist Eight (8) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 12 Marks. (4 x 12 = 48 marks)

**Note: -The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**

**Practical/ tutorial Evaluation**

Daily evaluation of practical's/tutorials/Viva voce/Records etc.

10 marks

**Final Examination**

15 Marks

**Pattern for external practical examination**

Practical file	5 Marks
Written examination	5 Marks
Viva-Voce	5 Marks
Total	15 Marks

**Pattern for external tutorial examination**

Assignment file	10 Marks
Viva-Voce	5 Marks
Total	15 Marks



**IT (Arts and Science) - SECOND SEMESTER**

Course: Minor  
Course Credits: (L-P-T)  
(3-1-0)  
Total marks: 100

Course Title: Programming Concepts and Paradigms  
Course Code: UMIIIT202  
Mid Semester assessment: 15 Marks of 1.5 hours duration  
End Semester assessment: 60 Marks of 3.0 hours duration  
Practical: 25 Marks

*For examinations to be held in May 2023, 2024, and 2025*

**Course objectives & learning outcomes:**

1. To learn the basic fundamentals of programming.
2. To gain knowledge of various programming paradigms and their types
3. To learn the basics techniques of problem solving
4. To brief the students about algorithmic design

**UNIT - I**

Introduction: Program, Programming Language, Evolution of programming languages: machine language, Assembly language, High Level language, Compiler, Interpreter, Assembler, Loader, Linker, Debugger, IDE, Source Code, object code, Basic Operations of a programming Environment, Selection of a programming language. 15 Hours

**UNIT - II**

Programming language paradigms: Paradigm, Imperative programming paradigm, procedural paradigm, Object Oriented Paradigm, Declarative Programming Paradigm, Logic Programming paradigm, Functional Programming Paradigm, Introduction to Concurrent Programming, Parallelism in Hardware, Advantages and limitations of Imperative and Declarative Paradigms. 15 Hours

**UNIT - III**

Basic Techniques of problem solving: Flowchart: symbols used in flowchart, terminator, process, document, decision, data, on-page reference, off-page reference, flow, drawing flowcharts for problem solving. 15 Hours

**UNIT - IV**

Problem Solving Techniques: -Algorithms: characteristics of Algorithms, steps in designing an algorithm, designing at least 10 algorithms for computational problems. Pseudocode: Advantages of writing pseudo code, Examples of pseudocode. 15 Hours

**Suggested readings/ references:**

1. Ravi Sethi, "Programming Languages, Concepts & Constructs", Pearson Education
2. Freidman, Wand, Haynes, "Essentials of Programming Language", PHI.
3. Robert .W. Sebesta, "Concepts of Programming Languages", Pearson Education
4. Watt, "Programming languages", Wiley.
5. Louden."Programming Languages", Cengage
6. Anthony A. Aaby, "Theory Introduction to Programming Languages"



**IT (Arts and Science) - SECOND SEMESTER**

Course: Minor  
Course Credits: (L-P-T)  
(3-1-0)  
Total marks: 100

Course Title: Programming Concepts and Paradigms  
Course Code: UMIIIT202  
Mid Semester assessment: 15 Marks of 1.5 hours duration  
End Semester assessment: 60 Marks of 3.0 hours duration  
Practical: 25 Marks

*For examinations to be held in May 2023, 2024, and 2025*

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS -**

The question paper will be divided into the following two sections. No question will be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 3 Marks.

(4 x 3 = 12 marks)

**Section B** shall consist Eight (8) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 12 Marks.

(4 x 12 = 48 marks)

**Note:** -The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.

**Practical/ tutorial Evaluation**

Daily evaluation of practical's/tutorials/Viva voce/Records etc.

10 marks

**Final Examination**

15 Marks

**Pattern for external practical examination**

Practical file	5 Marks
Written examination	5 Marks
Viva-Voce	5 Marks
Total	15 Marks

**Pattern for external tutorial examination**

Assignment file	10 Marks
Viva-Voce	5 Marks
Total	15 Marks



## IT (Arts and Science) - SECOND SEMESTER

Course:	Multidisciplinary Foundation Course	Course Title: Technical Communication
Course Credits:	(L-P-T) (3-0-0)	Course Code: UMDITT203
Total marks:	75	Mid Semester assessment: 15 Marks of 1.5 hours duration End Semester assessment: 60 Marks of 3.0 hours duration

*For examinations to be held in May 2023, 2024, and 2025*

### Course objectives & learning outcomes:

1. To learn the basic concept of technical communication.
2. To gain knowledge of forms of technical Communication
3. To learn the basics Technical Presentation
4. To brief the students about Technical communication skill

### UNIT - I

Technical Communication: Features; Distinction between General and Technical Communication, Language as a tool of Communication, Dimensions of Communication: Reading & comprehension, Technical writing: sentences; Paragraph, Technical style: Definition, types & Methods, The flow of Communication: Downward; upward, Lateral or Horizontal; Barriers to Communication..

10 Hours

### UNIT - II

Forms of technical Communication, Technical Report: Definition & importance, Thesis/Project writing: structure & importance, synopsis writing: Methods; Technical research Paper writing: Methods & style, Seminar & Conference paper writing, Key-Note Speech: Introduction & Summarization, Expert Technical Lecture: Theme clarity, Analysis & Findings, 7 Cs of effective business writing: concreteness, completeness, clarity, conciseness, courtesy, correctness, consideration. Programming language paradigms: Paradigm, Imperative programming paradigm, procedural paradigm, Object Oriented Paradigm, Declarative Programming Paradigm, Logic Programming paradigm, Functional Programming Paradigm, Introduction to Concurrent Programming, Parallelism in Hardware, Advantages and limitations of Imperative and Declarative Paradigms.

10 Hours

### UNIT - III

Technical Presentation: Forms, interpersonal Communication, Class room presentation, style, method, Individual conferencing: essentials: Public Speaking: method, Techniques: Clarity of substance, emotion, Humour, Modes of Presentation, Overcoming Stage Fear: Confident speaking, Audience Analysis & retention of audience interest, Methods of Presentation: Interpersonal, Impersonal, Audience Participation: Quizzes & Interjections. Basic Techniques of problem solving: Flowchart symbols used in flowchart, drawing flowcharts for problem solving.

10 Hours

### UNIT - IV

Interview skills, Group Discussion: Objective & Method, Seminar/Conferences Presentation skills: Focus, Content; Style; Argumentation skills: Devices: Analysis, Cohesion & Emphasis, Critical thinking, Nuances: Exposition narration & Description, effective business communication competence: Grammatical, Discourse competence: combination of expression & conclusion, Socio-linguistic competence: Strategic competence: Solution of communication problems with verbal and non verbal means

15 Hours

### Suggested readings/ references:

1. Meenakshi Raman & Sangeeta Sharma, "Technical Communication - Principles and Practices", Oxford Univ.
2. R.C. Sharma & K. Mohan, "Business Correspondence and Report Writing", Tata McGraw Hill
3. L.U.B. Pandey, "Practical Communication: Process and Practice", A.I.T.B.S.
4. Sherman, Theodore A, "Modern Technical Writing", Apprentice Hall

**IT (Arts and Science) - SECOND SEMESTER**

Course: Multidisciplinary Foundation Course  
Course Credits: (L-P-T)  
(3-0-0)  
Total marks: 75

Course Title: Technical Communication  
Course Code: UMDITT203  
Mid Semester assessment: 15 Marks of 1.5 hours duration  
End Semester assessment: 60 Marks of 3.0 hours duration

*For examinations to be held in May 2023, 2024, and 2025*

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS -**

The question paper will be divided into the following two sections. No question will be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions having one question from each unit. The students are required to attempt all questions. Each question shall be of 3 Marks.

(4 x 3 = 12 marks)

**Section B** shall consist Eight (8) long answer questions having two questions from each unit. The students are required to attempt one question from each unit. Each question shall be of 12 Marks.

(4 x 12 = 48 marks)

**Note:** -The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.



**IT (Arts and Science) - SECOND SEMESTER**

Course: Skill Enhancement Course (SEC)  
 Course Credits: (L-P-T)  
 (2-0-0)  
 Total marks: 50

Course Title: Understanding e-Services  
 Course Code: USEITT204  
 Mid Semester assessment: 10 Marks of 1.5 hours duration  
 End Semester assessment: 40 Marks of 2.5 hours duration

*For examinations to be held in May 2023, 2024 and 2025*

**Course objectives & learning outcomes:**

1. To provide working knowledge of word processing software.
2. To impart the skill to work with features of a spreadsheet software.
3. To develop the ability to prepare PowerPoint presentation.

**UNIT - I****Web Security**

Malware and its types, Viruses ,Worms Spyware ,Trojan horse ,Logic Bombs ,Ransomware , Key loggers , Adware, Spyware

Cyber threats and its types : Denial of Service ,Man in the Middle ,Phishing ,SQL Injection , Password Attacks, cyber stalking etc.

Protection against Cyber threats, identity protection, proper usage of passwords, privacy, confidentiality of information, Anti Virus, firewall, reporting cybercrime.

10 Hours

**UNIT - II****Electronic Mail , Instant Messaging and Collaboration**

Basics of E-mail: What is an Electronic Mail, Mailbox: Inbox and Outbox, Creating and Sending a new E-mail, attachment , difference between Bcc & Cc , Forwarding an E-mail message, Replying an E mail Message, Sorting and Searching emails, Spam mail, Draft mail, trash,E-mail Filter .

Instant Messaging and Collaboration: Using Instant messaging, Instant messaging providers, Best Practices for Instant Messaging , Netiquettes;

Google forms: Creation , Sharing ,Setting ,Managing responses, Google sheets.

10 Hours

**UNIT - III****E-Governance Services and Financial Literacy**

Definition of e-Governance, Interactions in e-Governance: Government to Government, Government to Citizen, Government to Business, Government to Employee, Advantages of e-Governance, Various e-Governance Initiatives, Using various E-governance services like Dig locker, Aadhar, Parivahan, GEM etc

E-payment system, Types of e-payment system: UPI [Unified Payment Interface] ,AEPS [Aadhaar Enabled Payment System] ,USSD[Unstructured Supplementary Service Data] ,Card [Credit / Debit], eWallet ,PoS [Point of Sale] , Internet Banking : National Electronic Fund Transfer (NEFT) ,Real Time Gross Settlement (RTGS) Immediate Payment Service (IMPS),Secured Online Payment methods.

10 Hours

**Suggested Readings:**

1. Roberta Bragg, Mark Rhodes-Ousley, Keith Strassberg, "Network Security: The Complete Reference", McGraw Hill Education.
2. E Balagurusamy, "Fundamentals of Computers", Tata McGraw Hill.
3. Behrouz A. Forouzan, "Data Communication and Networking", McGraw Hill Education.
4. P. Kumar, A.Tomar, and R. Sharmila, "Emerging Technologies in Computing: Theory, Practice, and Advances", 1<sup>st</sup> Edition, 2021.
5. Peter Norton, "Introduction to Computers", Tata McGraw Hill.
6. K. C. Laudon, & C.G. Traver, "E-commerce", MA: Pearson, 2013.

**IT (Arts and Science) - SECOND SEMESTER**

Course: Skill Enhancement Course (SEC)  
Course Credits: (L-P-T)  
(2-0-0)  
Total marks: 50

Course Title: Understanding e-Services  
Course Code: USEITT204  
Mid Semester assessment: 10 Marks of 1.5 hours duration  
End Semester assessment: 40 Marks of 2.5 hours duration

*For examinations to be held in May 2023, 2024 and 2025*

**NOTE FOR PAPER SETTERS FOR EXAMINATIONS -**

The question paper will be divided into the following two sections. No question shall be repeated in the question paper.

**Section A** shall consist Four (4) short answer questions (at least one from each unit). The students are required to attempt all questions. Each question shall be of 2½ Marks.

(4 x 2½ = 10 marks)

**Section B** shall consist Six (6) long answer questions (two from each unit). The students are required to attempt three questions. Each question shall be of 10 Marks.

(3 x 10 = 30 marks)

**Note: The paper setter shall ensure that the questions are uniformly distributed over entire syllabus.**

