GOVERNMENT COLLEGE FOR WOMEN, PARADE GROUND, JAMMU
(An Autonomous College)

Syllabus of B.A./B.Sc. Computer Applications

(Semester System)

For the semester examinations to be held in the year 2017 onwards.

This course shall be offered in BA/BSc programme alongwith other courses and combinations available for the students of B.A/B.Sc programmes. Computer Application shall be one course along with other three courses which may be opted by the students as per the combinations offered by the University/College.

Semester-wise Course Distribution of Computer Application is given as:-

SEMESTER-I						
	Course code	Course Title	Credits	Marks		
				Internal	External	Total
Core Course	UCATC-101	Computer Fundamentals and Office Automation tools	04	20	80	100
	UCAPC-150	Practicals based on UCATC-101	02	20	80	100
Total			**06**			**200**

SEMESTER-II						
	Course code	Course Title	Credits	Marks		
				Internal	External	Total
Core Course	UCATC-201	Problem Solving using C language	04	20	80	100
	UCAPC-250	Practicals based on UCAPC-201	02	20	80	100
Total			**06**			**200**

SEMESTER-III						
	Course code	Course Title	Credits	Marks		
				Internal	External	Total
Core Course	UCATC-301	Data structureS using C language	04	20	80	100
	UCAPC-350	Practicals (Based on UCATC-301	02	20	80	100
Skill Enhancement Course (SEC-I)	UCAPC-351	PC Assembly And Installation	04	20	80	100
Total			10			300

SEMESTER-IV						
	Course code	Course Title	Credits	Marks		
				Internal	External	Total
Core Course	UCATC-401	Database Management System & SQL	04	20	80	100
	UCAPC-450	Practical Based on UCATC-401	02	20	80	100
Skill Enhancement Course (SEC-II)	UCAPC-451	Information Security	04	20	80	100
Total			10			300

SEMESTER-V						
	Course code	**Course Title**	**Credits**	**Marks**		
				Internal	**External**	**Total**
Core Course	UCATC-501	Fundamentals of Operating Systems	04	20	80	100
	UCAPC-550	Practical Based on UCATC-501	02	20	80	100
Disciplinary Elective-I	UCAPC-551	VB.Net	04	20	80	100
		Web Technologies				
Total			**10**			**300**

SEMESTER-VI						
	Course code	**Course Title**	**Credits**	**Marks**		
				Internal	**External**	**Total**
Core Course	UCATC-601	Computer Networks &Internet	04	20	80	100
	UCAPC-650	Practical	02	20	80	100
Disciplinary Elective-II		Advance Database Management Systems	04	20	80	100
		Artificial Intelligence				
Total			**10**			**300**

DETAILED SYLLABUS

(SEMESTER – I)

Course No.: UCATC-101 Duration of the Examination: 3 Hrs

TITLE: COMPUTER FUNDAMENTALS AND OFFICE AUTOMATIONIT TOOLS.

No. of Credits = 4

Total Marks = 100
Semester Exam. = 80
Int. Assessment = 20

Unit I

History of Computer, Generations and Types (Analog Digital and Hybrid), Characteristics, applications, Benefits and limitations.
Computer: Introduction, Components: CPU, Memory: Primary (RAM, ROM, PROM, EPROM, EEPROM), Secondary (Hard Disk, Optical disk, blue ray disk, pen drives), Input Devices, Output Devices.

10 HRS

Unit II

Operating system and its functions. Types of Operating System (single user, multi user, time sharing, multitasking, multiprocessing and distributed)
Software and its types, Computer languages and its types, Compiler, Interpreter, Assembler, Linker Loader.
Introduction to Computer Codes: ASCII, EBCDIC, UNICODE, BCD, GRAY CODE, EXCESS-3

10 HRS

Unit III

Number System: Decimal Number System, Binary Number System, Octal Number System, Hexadecimal Number system. 1's Compliment and 2's Compliment. Conversion from one number system to another. Binary Arithmetic: Addition, subtraction, multiplication and division.

Unit IV

Word processing and its features, spell check, Grammar Check, Thesaurus, Auto complete, text formatting, borders & shading, inserting header, Footer and page numbers, Drop Cap, Bookmark, adding pictures, smart art, charts, Tables, find & replace feature, Page set up, printing, short cuts, Templates and Wizards, Mail Merge, Macros, exporting word documents

10 HRS

Unit V

Spreadsheet and its features, Entering information in worksheet, Editing cell entry, Moving and Copying data, deleting and insertion cells, rows , columns, custom numeric formats. Working with Formulas and Cell Referencing, Absolute and relative addressing.

Functions, Creating Charts, Filters: Auto and Advanced, Creating and using Macros, import & export data
Presentation software and its uses, Steps to create power point presentation, Power point views, Inserting pictures/images, Inserting Audio/ video clips, Animating slides etc.
10 HRS

Suggested Readings:

1. P.K Sinha & Priti Sinha, Computer Fundamentals, BPB Publications.
2. Alexix Leon, Mathewes Leon, Fundamentals of Information Technology,
3. Suresh K. Basandra, Computer Systems Today, Galgotia Publications.
4. V. Rajaraman, Fundamentals of Computers,EEE.
5. Peter Nortan, Introduction to Computers, Tata Mcgraw Hill
6. Joyce Coax , Joan Preppernau,,Steve Lambert and Curtis Frye,2007 Microsoft Office System step by step, Microsoft Press
7. R.K. Taxali, PC Software for Windows

Instructions for paper setter

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

Section A
Total of 5 short answer questions (one from each Unit) shall be set and the candidates are required to answer all questions. Answer to a question should not exceed 80 words. Each question shall be of 3 marks.

(5 x 3 = 15 marks)

Section B
Total of 5 medium answer questions (one from each Unit) shall be set and the candidates are required to answer all questions. Answer to a question should not exceed 300 words. Each question shall be of 7 marks.

(5 x 7 = 35 marks)

Section C
It will contain five long answer questions (one from each Unit). The candidates will be required to answer any two questions. Answer to each question should not exceed 600 words. Each question shall be of 15 marks.

(2 X 15 = 30 marks)

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

Course No.: UCAPC-150 Duration of Examination: 3 Hrs

TITLE: PRACTICALS (MS-OFFICE)
No. of Credits = 2 Total Marks = 50

In this course the students shall be exposed to various practical problems based on topics mentioned above. The Teacher-in-Charge shall design 30-40 problems based on these topics. The students shall be required to systematically work out the solution of those problems and implement using relevant tool in the computer laboratory. The 50% of the total marks in this paper shall be reserved for internal assessment. The Teacher-in-Charge shall conduct two internal evaluation tests for awarding the students for internal assessment. The students shall also be required to maintain proper record of their practicals in a Practical File which shall be regularly checked by the concerned teacher-in-charge. The internal assessment shall be based on regular tests, practical file and attendance in the laboratory. For the rest of 50% of the total marks there shall be an external examination which shall be conducted jointly by an internal examiner and an external examiner to be appointed by the University. The distribution of marks to various components is given below as:-

External Examination = 25 marks
Internal Examination = 25 marks

- Regular Tests = 2 tests (5 marks each)
- Viva voice = 5 marks
- Practical File = 5 marks
- Attendance = 5 marks

DETAILED SYLLABUS

(SEMESTER – II)

Course No.: UCATC-201 Duration of Examination: 3 Hrs

TITLE: PROGRAMMING CONCEPTS USING C LANGUAGE

No. of Credits = 4

Total Marks = 100
Semester Exam. = 80
Int. Assessment = 20

UNIT-I

Problem solving, Algorithm, flow chart, coding, compilation and debugging
History of C language, Structure of C program, compiling, and running a C program, Errors: syntax, linker and logical errors.
Character set of C language, identifiers, keywords, data types, variables, constants, expressions. Operators: Mathematical, Unary, Binary, Relational and Logical operators, Operator precedence and associativety.

10 HRS

UNIT-II

Conditional Control statements: if statement, if else statement, nested if statement, if else if ladder and Ternary operator, Switch case statement, GOTO statement.
Looping control Statements: While loop, Do while Loop, For loop, Nested loops etc.

10 HRS

UNIT-III

Functions: Definition, Prototypes, Types of Function, Scope, Call by Value.
Storage classes in C, Preprocessor Directives, Macros.

UNIT-IV

Arrays (Single and double dimensional): Definition, Declaration, Accessing, Bound Checking, Passing to function.
Strings: Definition, Declaration, Accessing, Passing to function, Standard Library functions.

10 HRS

UNIT-V

Arrays and Pointers: Accessing single dimensional array using Pointers, Accessing 2D array using Pointers, Passing arrays to functions with pointers.
Structures & Unions: Declaring, Initializing and Accessing structures, Passing structures to functions, Array of Structures, Nested Structures, Unions initialization and accessing the members of a union.

10 HRS

Suggested Readings:

1. Gottfried. B, Theory and problems of Programming with C Language, Tata Mc Graw Hill.

2. Kenneth. A, C Problem Solving and Programming, PHI.
3. Dan Gookin,C Programming, Wiley Dreamtech.
4. Y. P. Kanetkar, Understanding Pointers In C, BPB Publications.
5. Shubhnandan S. Jamwal; Programming in C; Pearson Publications; 1e, 2014
6. H.M. Deitel and P.J. Deitel, C How to Program, PHI.

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

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Total of 5 short answer questions (one from each Unit) shall be set and the candidates are required to answer all questions. Answer to a question should not exceed 80 words. Each question shall be of 3 marks.

(5 x 3 = 15 marks)

Section B
Total of 5 medium answer questions (one from each Unit) shall be set and the candidates are required to answer all questions. Answer to a question should not exceed 300 words. Each question shall be of 7 marks.

(5 x 7 = 35 marks)

Section C
It will contain five long answer questions (one from each Unit). The candidates will be required to answer any two questions. Answer to each question should not exceed 600 words. Each question shall be of 15 marks.

(2 X 15 = 30 marks)

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

Course No.: UCAPC-250 Duration of Examination: 3 Hrs

TITLE: PRACTICALS (C-Language)

No. of Credits = 2 Total Marks = 50

In this course the students shall be exposed to various practical problems based on the above topic.. The Teacher-in-Charge shall design 30-40 problems based on these topics. The students shall be required to systematically work out the solution of those problems and implement using relevant tool in the computer laboratory. The 50% of the total marks in this paper shall be reserved for internal assessment. The Teacher-in-Charge shall conduct two internal evaluation tests for awarding the students for internal assessment. The students shall also be required to maintain proper record of their practicals in a Practical File which shall be regularly checked by the concerned teacher-in-charge. The internal assessment shall be based on regular tests, practical file and attendance in the laboratory. For the rest of 50% of the total marks there shall be an external examination which shall be conducted jointly by an internal examiner and an external examiner to be appointed by the University. The distribution of marks to various components is given below as:-

External Examination = 25 marks
Internal Examination = 25 marks

- Regular Tests = 2 tests (5 marks each)
- Viva voice = 5 marks
- Practical File = 5 marks
- Attendance = 5 marks

DETAILED SYLLABUS
(SEMESTER – III)

Course No.: UCATC-301 Duration of Examination: 3 Hrs

TITLE: DATA STRUCTURES USING C LANGUAGE

No. of Credits = 4

Total Marks = 100
Semester Exam. = 80
Int. Assessment = 20

UNIT – I

Introduction and Classifications of Data Structures. Data Structure operations. Time and space complexity of algorithms. Asymptotic Notations: Big, Omega , Theta
Introduction to Arrays: array structure, Memory Representation, Operations, merging two arrays
Searching Algorithms: Liner Search & Binary Search
Sorting Algorithms: Bubble Sort, Insertion Sort, Selection Sort, Quick Sort,
Time and space complexity of sorting & search algorithms 10 HRS

UNIT - II

Heap: Introduction, Types of Heap, Insertion, Deletion
Linked list, Type of Lists: Single, Double, Circular, Operations on Lists: Traversal, Insertion, Deletion 10 HRS

UNIT - III

Stack: Introduction, Operations, Applications
Queue: Introduction, Types, Operations, Applications 10 HRS

UNIT – IV

Trees: Binary Tree: Properties, Binary Tree Traversal, Binary Search Trees: Introduction, Insertion, Deletion, Complete Binary Trees Graph Basics, Terminologies, Memory Representation 10 HRS

UNIT-V

Concepts of fields, records and files. Files: File Organization, Sequential Files, Structure, Operations, Disadvantages, Areas of use, Direct File Organization, Indexed Sequential File Organization and text files, Hashing techniques for direct files.

10 HRS

Suggested Readings:

1) Data Structures - Seymour Lipschutz (Schaum's Outlines)
2) Data Structure and File Using C - Abhay Abhyankar.
3) Fundamental of Data Structure in C - Sahani.
4) Data Structure Using C - Radhakrishanan and Shrivastav.
5) Data Structure Using C- R.S.Salaria
6) Simplified Approach to Data Structures- Vishal Goyal, Lalit Goyal, et.al

Instructions for paper setter

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

Section A
Total of 5 short answer questions (one from each Unit) shall be set and the candidates are required to answer all questions. Answer to a question should not exceed 80 words. Each question shall be of 3 marks.

(5 x 3 = 15 marks)

Section B
Total of 5 medium answer questions (one from each Unit) shall be set and the candidates are required to answer all questions. Answer to a question should not exceed 300 words. Each question shall be of 7 marks.

(5 x 7 = 35 marks)

Section C
It will contain five long answer questions (one from each Unit). The candidates will be required to answer any two questions. Answer to each question should not exceed 600 words. Each question shall be of 15 marks.

(2 X 15 = 30 marks)

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

SKILL ENHANCEMENT COURSE (SEC)

Course No.: UCAPC-351 Duration of Examination: 3 Hrs

TITLE: PC ASSEMBLY AND INSTALLATION

No. of Credits = 4

Total Marks = 100
Semester Exam. = 80
Int. Assessment = 20

UNIT- I

Introduction to Computer System, Difference Between Hardware and Software, Different input and output devices, Computer ports. Types of Memories- Static RAM and Dynamic RAM, ROM, PROM, EPROM, EEPROM, CPU (Central Processing Unit)- ALU and control unit, Optical Storage: CD, DVD, BLUE RAY DISC.
SMPS, UPS (Online/Offline), controller cards, AGP card, display cards: CGA VGA SVGA, sound card, FAX/Modem Cards, TV Tuner Cards, LAN Cards, Ethernet cards.

10 HRS

UNIT - II

Assembling and Dissembling of the system. Study of different types of Motherboards, Motherboard Configuration, Types of Processor- Intel Pentium IV, Dual core, Core 2 Duo, Quad processor etc,. Booting concept of computer in DOS and Windows environment,
BIOS Configuration: Study of BIOS Set-up- Advance set-up, Boot configuration, Boot Menu,.CD/ Pen Drive booting

10 HRS

UNIT – III

Formatting/Partitioning of Hard Disk, Installation of Operating System, Troublehshooting with PC: POST (Power on Self Test), BIOS Errors , Replacement of components etc. Maintenance: Windows file repairing, Use of system tools like Disk defragmentation, Disk clean up, Scan disk etc. Use of open source data recovery tools.

10 HRS

UNIT - IV

Different types of Application Software, Application Software Installation, Use of CD ROM and DVD Drivers, Different types of Motherboard drivers, LAN, Audio, and Video. Antivirus Software Installation. Installation of Drivers for Printers, Scanners, Web Camera, Working with different control panel option of windows.

10 HRS

UNIT- V

Networking Fundamentals: Basic LAN concepts , Network Topology, Different types of modems, Types of cable, Twisted cable, UTP,STP, Fibre optics, Coaxial cable, Connectores : RJ 45, BNC, T-Connector, Hub, Switch, Router, Brideges, Gateways, Repeater, Modem. Networking in Windows 7: wireless networks, Ethernet, Cable modem, Set up wireless router and broadband (DSL or cable) connection.

10 HRS

Suggested Readings:

1. P.K Sinha&PritiSinha, Computer Fundamentals, BPB Publications.
2. R.K. Taxali, PC Software for Windows
3. –Singh & Singh, Computer Hardware Course, Computech Publications Limited.
4. Wikibooks contributors, How to Assemble A Desktop PC, Platypus Global Media
5. Jacob Beckerman, How to build a computer, A step by step guide, JIBB Publishing.
6. Mark L. Chambers, Build your own PC Do-It-yourself for dummies.

DETAILED SYLLABUS

(SEMESTER – IV)

Course No.: UCATC-401 Duration of Examination: 3 Hrs

TITLE: DATABASE MANAGEMENT SYSTEM

No. of Credits = 4

Total Marks = 100
Semester Exam. = 80
Int. Assessment = 20

UNIT - I

Overview of DBMS: Data & information, Entity & attributes, Records, files & their types, Database, views, relationships among entities, DBMS: its evolution, components advantages and disadvantages. Architecture of DBMS.

10 HRS

UNIT - II

Relational DBMS: definition, concept of table, keys [primary, unique, candidate, foreign, conjugate] role of database administrator. Data models [traditional, semantic, hierarchical, network, relational] E-R diagram.

10 HRS

UNIT - III

Normalization: Anomalies and data redundancies in Database, Dependencies [functional, fully functional and minimal/irreducible set], Normal forms [1st, 2nd, 3rd, BCNF,]

10 HRS

UNIT - IV

Overview of SQL, Data types in SQL, Table creation, insertion, deletion, alteration and retrieval of data from table, Table deletion, simple & nested queries using DDL, DML and DCL commands, SQL queries using conditions like where, where-like, order by, greater than, less than, if-then, if-then-else, if-then else if, data integrity constraints, views, joins.

10 HRS

UNIT - V

Security issues: Data security issues, risks, data tampering, data theft, unauthorized access, password related threats, data security requirements [confidentiality, integrity, availability] granting and revoking of privileges and roles, definition of Encryption and Decryption.

10 HRS

Suggested Readings:

1. Bipin C.Desai: An Introduction to Database Systems, West-publishing company.
2. Elmasri, Navathe, Somayajulu, Gupta: Fundamentals of Database Systems, Pearson Education.
3. Date, C.J.: An Introduction to Database Systems Addison Wesley Pearson Education.
4. Narayan S Umanath, Richard W Scamell : Data Modelling and Database Design, Thomson Course Technology India Edition.
5. R.A. Parida, Vinod Sharma: The power of Oracle 9i, Firewall Media Publications.
6. Bayross Ivan: SQL, PL/SQL the programming language of Oracle, BPB publications.

SKILL ENHANCEMENT COURSE

Course No.: UCAPC-451 Duration of Examination: 3 Hrs

TITLE: **INFORMATION SECURITY**

No. of Credits = 4

Total Marks = 100
Semester Exam. = 80
Int. Assessment = 20

UNIT – I

Introduction to Internet: Introduction, Objectives, Evolution, Applications (Email, Social Networking, E-Commerce etc.), World Wide Web (WWW), Search Engine, ISP.

Basic of Computer Networks: (LAN, MAN, WAN), Network Topologies, Intranet, Extranet.

10 Hrs

UNIT – II

Internet Terms: Web page, website, web portal, browsers, Web server, Proxy Server, URL, ISP, download and upload, online and offline, Hosting and Domain Name, Hypertext, TCP/IP, UDP, HTTP, HTTPS, FTP, IP Address and its classes.

10 Hrs

Unit – III

Introduction to HTML, Format of HTML Program, Formatting Tags, Image Tags, Linking of Documents, List Tag, Tables Tag, Frames, Forms.

10 Hrs

Unit – IV

Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling(Background, Text Format, Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, Box Model(Introduction, Border properties, Padding Properties, Margin properties), CSS Color.

10 Hrs

Unit – V

Introduction to JavaScript, Variables, Conditional and Loops Control Statement, Functions, Strings and Built-in Functions, Events and Event Handling.

10 Hrs

Suggested Reading

1. HTML 5 and CSS 3 Made Simple by Ivan Bayros.
2. Computer Networks- Andrew.S. Tannenbaum, Pearson.
3. CSS: The Definitive Guide, 3rd Edition by Eric Meyer, O'Reilly Media.
4. The Internet- Douglas E. Comer, Pearson.
5. Web Programming – Chris bates – Wiley Dreamtech India
6. Internet and Worldwide Web, H.M. Deitel, P.J. Dietel and A.B. Goldberg, 3e, Pearson Education
7. Mastering Javascript and Jscript, James Jaworski, 2e, BPB
8. HTML, DHTML, JavaScript, Perl CGI by Ivan Bayross, BPB Publications

Course Title: Web Designing

UNIT-I

Web Design Principles: Brief history of Internet, World Wide Web, Services, Protocols: FTP, Telnet, TCP/IP, DNS, ARP, IP Address : Classful and Classless .Search Engines, Web browsers, MIME.
10 hours

UNIT -II

HTML: Introduction, Basic Concepts, Overview, Structure of HTML Document, Creating Hyperlinks, Line, Line Break, Font, Paragraphs etc.
Lists: Ordered List, Unordered list, Definition List.
Images: Inserting Image, Changing Height & width, Hyperlink the Image.
10 hours

UNIT-III

Tables: Table Tags, Cell spacing, Cell padding, Row grouping, Header, Footer etc.
Frames: Creating framesets, margin, borders and scroll bars, Targeting links to frame.
Forms: Form tags, Radio, check boxes, Input Boxes, Password Input box, reset and submit button.
10 hours

UNIT-IV

DHTML: HTMLVs DHTML, Basic Concepts of Style sheets, CSS, Using CSS in HTML Documents,
Linking and Embedding of CSS in HTML Documents, Proprieties of CSS, Inline Style sheets, Internal and External Style Sheets.
10 hours

Suggested Readings:

1. H.M Dietel, P.J Dietel, A.B. Goldberg, *Internet and world wide web,* Pearson Prentice Hall
2. HTML 4.0, Lee Annie Philips, Prentice Hall India.
3. Ivan Bayross, HTML, DHTML, Java Script.
4. Jon Ducett, *Beginning Web Programming with HTML, CSS and Java Script,* Wiley
5. Jon Duckett, Beginning **HTML, XHTML, CSS, and JavaScript®,** Wrox Programmer to Programmer
6. Doulas and E. Comer: The Internet, PHI

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DETAILED SYLLABUS (SEMESTER – V)

Course No.: UCATC-501 **Course Title: Fundamentals Of Operating Systems**
Duration of the Examination: 3 Hrs **No. of Credits = 4**
Semester Exam. = 80 **Int. Assessment = 20** **Total Marks = 100**

UNIT – I

Introduction to Operating System, Definition, Types of operating systems, Functions of Operating System, Process Management: Process, process states, Swapping, Scheduling Criteria, Scheduling: Pre-emptive and Non-Pre-emptive, Scheduling Algorithms: FIFO, LIFO, Round Robin, Shortest Job First, Shortest Remaining Time, Priority Scheduling, Gantt Charts, Scheduling Algorithm Performance: processor utilization, Throughput, Waiting time, response time 10 HOURS

UNIT - II

Inter-Process communication(IPC): Introduction to IPC, Resource Sharing,
Process Synchronization & concepts: race condition, Critical Section problem: its solution, Semaphore concept, types and limitations
Deadlocks: Criteria, Deadlock avoidance, Detection and recovery 10 HOURS

UNIT-III

Memory Management: Memory Allocation: contiguous and Non-contiguous, Fixed and variable partitions, compaction, checkerboarding, Partition Selection Algorithms,
Virtual Memory Concepts: Simple Paging & Simple Segmentation
Virtual memory, demand memory, page replacement algorithms 10 HOURS

UNIT - IV

File System Management: Files, directories, file types and operations, File Allocation Methods: Continuous allocation, Chained allocation and indexed allocation.
Disk Scheduling Algorithms: FCFS, SSTF, SCAN, C-SCAN, LOOK 10 HOURS

UNIT - V

DOS commands: (internal (DIR, DATE, TIME, CLS, CD, RD, MD, PATH, TYPE, DEL, ECHO, COPY, REN, PROMPT, VOL, VER), external (ATTRIB, CHKDSK, DISKCOPY, DISKCOMP, XCOPY, TREE, DELTREE, DOSKEY, FORMAT, FIND, SORT, FDISK, MORE, SYS)), Concept of files & directories, Wild card characters, Redirection operators 10 HOURS

Suggested Readings:

1. Operating system Principles by A. Silberschartz, P. Galvin and G. Gagne- WSE wiley.
2. Modern operating systems by Andrew. S. Tanenbaum, Pearson Prentice Hall
3. An Introduction to operating system by H. M. Deitel- Addison-Wesley publications
4. Operating Systems by William Stallings-Pearson Education
5. Operating Systam-A design oriented approach by C. Crowley-Pearson Education

DETAILED SYLLABUS (SEMESTER – VI)

Course No.: UCATC-601 **Course Title: Computer Networks & Internet**
Duration of the Examination: 3 Hrs **No. of Credits = 4**
Semester Exam. = 80 **Int. Assessment = 20** **Total Marks = 100**

Unit - I

Computer Networks: Concept of Network, Types of Network: LAN, WAN, MAN, Network Topologies Applications of Computer Network.
Concept of Internet, Intranet and Extranet, Web server, WWW, Search Engines, Internet Service Providers 10 HOURS

Unit – II

Data and Signals: Analog & Digital Data, Analog & Digital Signals, Composite Signals, Band Width, Bit rate, Baud rate, Transmission of Digital Signals: Baseband Transmission, Broadband, Transmission Impairment, Data rate Limits: Nyquist BitRate, Shannon Capacity, Performance of the Network: Bandwidth,, Throughput, Latency, Bandwidth Delay, Jitter, Transmission Modes (simplex half duplex and full duplex) 10 HOURS

Unit – III

Digital Transmission: Digital to Digital Transmission: Line Coding Schemes, Block Coding, Scrambling, Analog to Digital Transmission: PCM, Delta Modulation, Data Transmission Modes: Parallel, Serial
Analog Transmission: Digital to Analog: ASK, FSK, PSK, QAM,
Analog to Analog Conversion: Amplitude Modulation, Frequency Modulation & Phase Modulation, Asynchronous and Synchronous Communication, Multiplexing: Definition, TDM, FDM
Transmission media (guided and unguided), Hardware Components (Hub, Repeater, Bridge, Router and Gateway). 10 HOURS

Unit – IV

OSI Reference model, TCP/IP Model, Protocols: TCP/IT, HTTPS, FTP, ARP, RARP, BOOTP, DHCP, OSPF, UDP, SMTP, SCTP, IP addresses, Classes of IP addresses, Domain Name system, IPv4, Introduction to IPv6 10 HOURS

Unit-V

Introduction to html, format of HTML Program, Formatting tags, Image tags, linking of documents, List Tags, Tables Tags, Frames, Forms, Basic Concept of Style Sheets, CSS, Linking and Embedding of CSS in HTML document, Properties of CSS, inline style Sheets, Dynamic Style Sheets. 10 HOURS

Suggested Readings:

1. Computer Networks- Andrew.S. Tannenbaum
2. Data and Computer Communication- Williams Stallings
3. Data Communication and Networking- Forouzan
4. The Internet- Doulas and E. Comer
5. Beginning Web Programming with HTML, CSS and JavaScript- John Ducett