NEW

Detailed Syllabus of

B.Sc.(Computer Science) ,

B. Sc.(Computer Maintenance)

and

B.Sc.(IT)

Effective From July – 2010

TOTAL PAGES = 20

SEMESTER SYSTEM

SYLLABUS FOR B Sc(CS) , B Sc(IT) AND B Sc(C. MAINT.)

Effective since July 2010

Effective From Session 2010-2011								
CLASS ----------→ / SEMESTER	B.Sc.(CS) / B.Sc.(CMAIN.)	B.Sc.(IT)	CCE 30 %	MIN. MARKS	TERM END EXAM 70%	MIN. MARKS	TOTAL 100%	**MIN. MARKS**
FIRST SEM.	CS-101 PC SOFTWARE	CS-101 PC SOFTWARE	15	5	35	12	50	**17**
	CS-102 COMPUTER FUNDAMENTALS	CS-102 COMPUTER FUNDAMENTALS	15	5	35	12	50	**17**
	CS-101P - PRACTICAL ON WINDOWS, MS-OFFICE, AND INTERNET	CS-101P - PRACTICAL ON WINDOWS, MS-OFFICE, AND INTERNET	----	----	----	----	50	**17**
SECOND SEM.	CS-201 PROGRAMMING AND PROBLEM SOLVING THROUGH C LANGUAGE	CS-201 PROGRAMMING AND PROBLEM SOLVING THROUGH C LANGUAGE	15	5	35	12	50	**17**
	CS-202 COMPUTER ORGANISATION	CS-202 COMPUTER ORGANISATION	15	5	35	12	50	**17**
	NA	CS-203 INTRODUCTION TO INFORMATION SYSTEM	15	5	35	12	50	**17**
	CS-201P - PRACTICAL ON C PROGRAMMING	CS-201P - PRACTICAL ON C PROGRAMMING	----	----	----	----	50	**17**
Effective From Session 2011-2012								
THIRD SEM. (FOR HONS.)----→	CS-301 DATA STRUCTURE USING C++	CS-301 DATA STRUCTURE USING C++	15	5	35	12	50	**17**
	CS-302 DBMS FUNDAMENTALS	CS-302 DBMS FUNDAMENTALS	15	5	35	12	50	**17**
	CS-301P PRACTICAL ON DATA STRUCTURE AND DBMS	CS-301P PRACTICAL ON DATA STRUCTURE AND DBMS	----	----	----	----	50	**17**
	CS-303 SYSTEMS PROGRAMMING	NA	15	5	35	12	50	**17**
FOURTH SEM. (FOR HONS.)----→	CS-401 OPERATING SYSTEM USING LINUX	CS-401 OPERATING SYSTEM USING LINUX	15	5	35	12	50	**17**
	CS-402 SYSTEM ANALYSIS & DESIGN	CS-402 SYSTEM ANALYSIS & DESIGN	15	5	35	12	50	**17**
	NA	**CS-403 INFORMATION TECHNOLOGY AND ITS APPLICATION**	15	5	35	12	50	**17**
	CS-401P PRACTICAL ON LINUX	CS-401P PRACTICAL ON LINUX	----	----	----	----	50	**17**
	CS-404 COMPUTING AND ITS APPLICATIONS		**15**	**5**	**35**	**12**	**50**	**17**

PS :- CCE ----- CONTINUOUS COMPREHENSIVE EVALUATION, **INDIVIDUAL PASSING REQUIRED FOR THEORY AND PRACTICAL SUBJECT.**

SEMESTER SYSTEM

PROPOSED SYLLABUS FOR B Sc(CS) , B Sc(IT) AND B Sc(C.MAINT.)

CLASS /SEMESTER	B.Sc.(CS) / B.Sc.(CMAIN.)	B.Sc.(IT)	CCE 30 %	MIN. MARKS	TERM END EXAM 70%	MIN. MARKS	TOTAL 100 %	**MIN. MARKS**
Effective From Session 2012-2013								
FIFTH SEM. INCLUDING HONS.	INTERNSHIP	INTERNSHIP						
SIXTH SEM. (FOR HONS.)	CS-601 DATA AND NETWORK COMMUNICATION	CS-601 DATA AND NETWORK COMMUNICATION	15	5	35	12	50	**17**
	CS-602 WEB TECHNOLOGY & PROGRAMMING	CS-602 WEB TECHNOLOGY & PROGRAMMING	15	5	35	12	50	**17**
	CS-601P PRACTICAL ON WEB TECHNOLOGY & PROGRAMMING	CS-601P PRACTICAL ON WEB TECHNOLOGY & PROGRAMMING	15	5	35	12	50	**17**
	CS-603 -JAVA PROGRAMMING CS-604- INTRODUCTION TO SOFTWARE ENGINEERING CS-605- SCIENTIFIC COMPUTATION CS-602P- PRACTICAL ON JAVA CS-603P -PRACTICAL ON SCIENTIFIC COMPUTATION CS-604P -MAJOR PROJECT	CS-603 JAVA PROGRAMMING	15 15 15	5 5 5	35 35 35	12 12 12	50 50 50 50 50 100	17 17 17 17 17 33

CS 101 - PC SOFTWARE

Effective From Session 2010-2011

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT I

MS-Windows: Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel – display properties, adding and removing software and hardware, setting date and time, screen saver and appearance. Using windows accessories.

UNIT-II

Documentation Using MS-Word - Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Advance Features of MS-Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object, Template.

UNIT III

Electronic Spread Sheet using MS-Excel - Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation.

UNIT IV

Database Management using Excel-Sorting, Filtering, Table, Validation, Goal Seek, Scenario.

UNIT V

Presentation using MS-PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.

TEXT BOOKS

1. Learn Microsoft Office – Russell A. Stultz – BPB Publication

REFERENCES BOOKS

1. Microsoft Office – Complete Reference – BPB Publication
2. Courter, G Marquis (1999). Microsoft Office 2000: Professional Edition. BPB.
3. PC Software – Shree Sai Prakashan, Meerut

CS 102 - COMPUTER FUNDAMENTALS

Effective From Session 2010-2011

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT I

Evolution of Computers - Generations, Types of computers, Computer system characteristics, Basic components of a Digital Computer - Control unit, ALU, Input/Output functions and memory, Memory addressing capability of a CPU, Word length of a computer, processing speed of a computer, Computer Classification.

UNIT II

Input/Output Units-: Keyboard, Mouse, Trackball, Joystick, Digitizing tablet, Scanners, Digital Camera, MICR, OCR, OMR, Bar-code Reader, Voice Recognition, Light pen, Touch Screen, Monitors and types of monitor -Digital, Analog, Size, Resolution, Refresh Rate, Dot Pitch, Video Standard - VGA, SVGA, XGA etc, Printers & types - Daisy wheel, Dot Matrix, Inkjet, Laser, Line Printer, Plotter, Sound Card and Speakers.

UNIT III

Memory - RAM, ROM, EPROM, PROM and other types of memory, Storage fundamentals - Primary Vs Secondary Data Storage, Various Storage Devices - Magnetic Tape, Magnetic Disks, Cartridge Tape, Hard Disk Drives, Floppy Disks (Winchester Disk), Optical Disks, CD, VCD, CD-R, CD-RW, Zip Drive, flash drives Video Disk , Blue Ray Disc, SD/MMC Memory cards, Physical structure of floppy & hard disk, drive naming conventions in PC. DVD, DVD-RW, USB Pen drive.

UNIT IV

Software and its Need, Types of Software - System software, Application software, System Software - Operating System, Utility Program, Algorithms , Flow Charts - Symbols, Rules for making Flow chart, Programming languages, Assemblers, Compilers and Interpreter, Computer Applications in Business.

UNIT V

Introduction to **Internet**, Connecting to the Internet Hardware , Software & ISPs, Search Engines, Web Portals, Online Shopping, Email – Types of email, Compose and send a message. Reply to a message, Working with emails.

TEXT BOOKS

1. Computer Fundamentals – B. Ram – New Age International Publishers

REFERENCES BOOKS

2. *S.K.Basandra**, "Computers Today "**, Galgotia Publications.*
3. Computer Fundamentals – P. K. Sinha – BPB Publication
4. PC Software – Shree Sai Prakashan, Meerut

CS - 201 PROGRAMMING AND PROBLEM SOLVING THROUGH C LANGUAGE

Effective From Session 2010-2011

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT I

Structure of C program, keywords, identifiers, constants, variables, data types,type conversion, Types of operators and expressions, Input and output functions in C. Decision Statement – IF-ELSE statement, break, continue, goto, switch() case and nested IF statement.

UNIT II

Loop Control Statements – For loop, While loop , Do-while loop and nested loops. Arrays – Definition, Initialization, characteristics, One, Two, Three and Multidimensional Arrays, sscanf() and sprintf() functions, Working with Strings & Standard Functions.

UNIT III

Pointers – Introduction, features, Declaration, Arithmetic operations, pointers and Arrays, Array of pointers, pointers to pointers, pointers and strings, Void pointers.

UNIT IV

Functions – Declaration, Prototype, Types of functions, call by value and reference, Function with operators, function with decision statements, function with Loop statements, Function with Arrays and Pointers, Types of Storage Classes.

UNIT V

Structure and Union – Declaration, Initialization, structure within structure, Array of structure, Enumerated data types, Union of structure, Files – Streams and file types, file operations, File I/O, Read ,Write and Other file function.

TEXT BOOKS

1. *E. Balaguruswamy,* ***"Programming In C ",*** *TMH Publications*

REFERENCES BOOKS

2. Ashok Kamthane – "Programming with ANSI & Turbo C - Pearson
3. *Gottfried, Schaums Outline Series,* ***" Programming With C "****, TMH Publications*
4. *Mahapatra,* ***" Thinking In C ",*** *PHI Publications*

CS - 202 COMPUTER ORGANIZATION

Effective From Session 2010-2011

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT I

Number systems – Decimal Number system, Binary number system, Octal & Hexa-decimal number system,1's & 2's complement, Binary Fixed- Point Representation, Arithmetic operation on Binary numbers, Overflow & underflow.

UNIT II

Floating Point Representation, Codes, ASCII, EBCDIC codes, Gray code, Excess-3 & BCD, Error detection & correcting codes, Logic Gates, AND, OR, NOT GATES and their Truth tables, NOR, NAND & XOR gates.

UNIT III

Flip-flops - RS, D, JK & T Flip-flops, Registers, Shift Registers, Multiplexer, De-multiplexer, Encoder, Decoder , Counters.

UNIT IV

Boolean Algebra – Basic Operations and Boolean Law's, Demorgan's theorem, K -Map, Sum of Product & Product of Sum. Combinational & Sequential circuits, Half Adder & Full Adder, Adder & Subtractor.

UNIT V

DMA- control signals for DMA transfers,Block diagram of DMA controller, DMA transfer in a microcomputer system. Instruction Sets – Characteristics and Functions, Types of Operations Addressing modes and formats, Processor Organization, Instruction Cycle, and Register Organization.

TEXT BOOKS

1. Computer Fundamentals – B. Ram – New Age International Publishers

REFERENCE BOOKS

1. William Stallings, "**Computer Organization & Architecture**", Pearson.
2. BARTEE, ***"Digital Computer Fundamentals "*** TMH Publication
3. *MORRIS MANO,* ***"Computer System Architecture "*** PHI

CS - 203 - INTRODUCTION TO INFORMATION SYSTEM
(For Info. Tech. Only)

Effective From Session 2010-2011

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT I

Information concepts, system & modeling concepts, what is information system, business information system, system development, need to learn information system, organization & information system, competitive advantage, performance based information system, careers in information systems.

UNIT II

H/W: Component, processing & memory devices, secondary storage, input and output devices

S/W: Overview of S/W, system & application S/W, programming languages, S/W issues & trends

UNIT III

Data management, data modeling and database models, database management systems, database applications

UNIT IV

Overview of Communication systems, telecommunication, network & distributed processing, telecommunication & application, Use & functioning of the Internet, Internet services, WWW, intranets & extranets, Net issues.

UNIT V

Introduction to E-Commerce, types of e-commerce, e-commerce, e-commerce application, Electronics Payment System, technologically infrastructure of E-Commerce, trends to E-Commerce, strategy for successive E-Commerce

Computer Waste and Mistakes, computer crimes, privat..?, work environment

Books:

1. Principal of Information System: Ralph Stair (Thomson course technology)

CS – 301 DATA STRUCTURE USING C++

Effective From Session 2011-2012

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT I

Introduction to Object Oriented Programming, Object oriented Paradigm, Introduction to C++, Differentiate C & C++, Data types, Operators, Decision making and Loop control statements of C++.

UNIT II

Introduction to Data-structures: Definition of data structures and abstract data-types. **Classification of Data-structures:** Linear, Non-linear, Homogeneous, Non-homogeneous, Static and Dynamic data structures. **Levels of Data-structures:** User level(view-level), logical level, Physical level. **Arrays :** Definition, representation of One and Two dimensional arrays in memory(Address Calculation).**Sparse Matrix :** Definition, Memory Representation

Unit-III

Stack : Definition, Array implementation of stack (static stack) : Operations PUSH, POP, TRAVERSE. **Applications of stack :** Infix, Prefix , Postfix representation and conversion using stack, Postfix expression evaluation using stack, use of stack in recursion implementation. **Queue :** Definition, array implementation of queue (static queue) : Operations INSERT, DELETE, TRAVERSE. **Applications of queue :** Network Printer, Simulation of an Airport, Time Sharing System(Round Robin Scheduling) **Comparisons** of array, stack and queue data structures. **Introduction** to Circular queue, priority queue, Double ended queue, multiple queue.

Unit-IV

Pointers : Introduction, Pointers to structures, malloc, calloc functions.**Linked list :** Singly and Doubly Linear link lists, Singly and doubly circular linked list **:** Definitions, operations INSERT , DELETE, TRAVERSE on all these list. (Insertion operation includes – insertion before a given element, insertion after a given element, insertion at given position, insertion in sorted linked list) , Implementations of Stack and Queue using linked list (Dynamic stack).

Unit-V

Applications of linked list :

String representation & string operations like string length, string reverse, string comparison, string concatenation, sting copying, convert upper-case to lower and vice-versa, substring using linked list.

Polynomial representation and addition of two polynomial using linked list.

Josphus problem, searching using linked list, sorting using linked list.

Simple Searching Algorithms: Linear or sequential search, Binary search, interpolation search using array.

Simple Sorting Algorithms: Bubble sort, Selection sort, Insertion Sort on array.

TEXT BOOKS

1. Data Structures In C++ By Ellis Horowitz, Sartaj Sahani, Dinesh Mehta Galgotia Publications.

Reference Books:

1. Data Structures (Schaume's Outlines) By Lipschutz TMH Publications.
2. Data Structures and Algorithm in C++ By Adam Drozdek Thomson (Vikas)
3. Data Structures using C & C++ By Aaron M. Tenenbaum, Yedidyah Langsam PHI publications.

CS – 302 DBMS FUNDAMENTALS

Effective From Session 2011-2012

Maximum Marks: 35 **Minimum Pass Marks: 12**

Unit – I

DBMS Definition, Characteristics of DBMS ,Application and advantages of DBMS, Instances , Schemas and Database States, Three Levels of Architecture , Data Independence, DBMS languages, Data Dictionary, Database Users, Data Administrators.

Unit – II

Data Models, types and their comparison, Entity Relationship Model, Entity Types, Entity Sets, Attributes and its types, Keys, E-R Diagram, Data Integrity
RDBMS –Concept, Components and Codd's rules.

Unit – III

Relational Algebra (selection, projection, union, intersection, Cartesian product, Different types of join like theta join, equi-join, natural join, outer join)
Functional Dependencies, Good & Bad Decomposition, Anomalies as a database: A consequences of bad design, Normalization: 1NF, 2NF, 3NF, BCNF, 4NF 5NF.

Unit – IV

Introduction to SQL, DDL, DML, and DCL statements, Creating Tables, Adding Constraints, Altering Tables, Update, Insert, Delete & various Form of SELECT- Simple, Using Special Operators for Data Access. Aggregate functions, Joining Multiple Tables (Equi Joins),Joining a Table to itself (self Joins) Functions.

Unit – V

Introduction to PL/SQL (blocks of PL/SQL, Variables, constants), Control Structure Introduction to Stored Procedures, Functions , Cursor and Triggers

Text Books :

1. Elmasri & Navathe, Fundamentals of Database systems, Addison & Weisely, New Delhi.

References:

1. H. F. Korth & A. Silverschatz, Database Concepts, Tata McGraw Hill, New Delhi
2. C. J. Date, Database Systems, Prentice Hall of India, New Delhi.
3. Ivan Bayross, SQL,PL/SQL, The programming language of Oracle.

CS – 303 SYSTEM PROGRAMMING
(FOR HONS. COURSE ONLY)

Effective From Session 2011-2012

Maximum Marks: 35 **Minimum Pass Marks: 12**

Unit – I

Background – Introduction, System Software and Machine Structure, The Simplified Instructional Computer (SIC), Traditional (CISC) Architectures, RISC Architectures.

Unit – II

Assemblers - Basic Assembler Functions,Machine-Dependent Assembler Features, Machine-Independent Assembler Features, Assembler Design Options, Implementation Examples.

Unit – III

Loaders and Linkers - Basic Loader Functions, Machine-Dependent Loader Features, Machine-Independent Loader Features, Loader Design Options, Implementation Examples.

Unit – IV

Macro Processors - Basic Macro Processor Functions, Machine-Dependent Macro Processor Features,Machine-Independent Macro Processor Features, Macro Processor Design Options, Implementation Examples.

Unit – V

Compilers - Basic Compiler Functions,Machine-Dependent Compiler Features, Machine-Independent Compiler Features, Compiler Design Options, Implementation Examples.

TEXT BOOKS

1. System Programming and operating system – D.M. Dhamdhere –Tata McGrawhill

Reference Books:

2. System Software: An Introduction to Systems Programming, 3/E - Leland L. Beck - Addison-Wesley
3. System Programming – J.J.Donavan – Tata McGrahill

CS – 303 OPERATING SYSTEM USING LINUX

Effective From Session 2011-2012

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT – I

Definition of Operating System, Types of Operating System, features of Unix, Basic Architecture of Unix/Linux system, features of Kernel and Shell. *Unix File system* - Boot block, super block, Inode table, data blocks, How Unix/Linux kernel access files, Unix/Linux standard file system.

Unit –II

Structure of file system, Essential Linux commands - Commands for files and directories creating and viewing files using cat, cd, ls, cp, md, rm, mkdir, rmdir, pwd, file, more, less, file comparisons – cmp & comm, View files, disk related commands, checking disk free spaces, chmod with its options, cal,date,who,tty, lp,stty.

Unit -III

Filters and pipes : head, tail , wc, pr, cut, paste, sort, uniqe, grep, egrep, fgrep ,tee,
The process : shell process, parent and children ,process status, system process, multiple jobs in background and foreground, changing process priority with nice, premature termination of process, Mathematical commands- bc, expr, factor, units.

Unit -IV
Creating and editing files with VI editor with their command options, Operators, text deletion, text movement, changing text, yanking text, filtering text, the ex mode, moving text from one file to another.
Communication: The bulletin board –news, write, mesg, talk, mail, elm, pine, finger, vacation and connecting to remote machine.

Unix - V
System administration Common administrative tasks, identifying administrative files – configuration and log files, Role of system administrator, Managing user accounts-adding & deleting users, changing permissions and ownerships,
Installation of Unix/Linux system– Unix/Linux Installation requirement, complete Procedure steps, Partitioning the Hard drive, System startup and shut-down process, init and run levels. File system mounting, lpstat, backup strategy, installing software on Unix/Linux.

TEXT BOOKS

1. Unix – syed mansoor sarwar, Robert kortskey **-** Pearson Education

Reference Books:

2. Unix concepts and Application- Sumitabha Das-Tata McHill
3. Using Linux – David Bandel and napier – Pearson Education

CS – 402 SYSTEM ANALYSIS AND DESIGN

Effective From Session 2011-2012

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT – I
Define Data, Information, System, System component, System Analysis, Business system concepts, Categories of Information System, Scope of Information System, System Development Life Cycle, system prototype.
UNIT - II

Role of information system, Information system planning , Fact finding techniques, Tools for documenting procedure and decisions, Structured Analysis, Data flow analysis, Features and tools of data flow strategy, Advantage of data flow analysis, Physical and Logical data flow diagrams.

UNIT - III

Data dictionary features, Processes in the Data dictionary, Application Prototype, Steps in prototype methods, Use of Prototypes, A Prototyping example, System Design, Objectives in Designing an information system, software development specification.

UNIT - IV

Elements of the design, Design of output, Design of files, Design of Database Interaction, Design of Input, Design of control, Design of Procedure, Design of Program specification.

UNIT - V

Design of computer output, types of output, how to present information – Tabular format, Graphics format, color presentation, screen design, Design of Input and Output controls, data capture guideline, design of source documents.

TEXT BOOKS

1. System Analysis and Design – Awadh

Reference Books:

2. Analysis & Design of Information system – James A. Senn –McGraw Hill

CS – 403 INFORMATION TECHNOLOGY AND ITS APPLICATION

(For IT Course Only)

Effective From Session 2011-2012

Maximum Marks: 35 **Minimum Pass Marks: 12**

[TO BE PREPARED LATER]

CS – 404 COMPUTING AND ITS APPLICATIONS

(For Hons. Course Only)

Effective From Session 2011-2012

Maximum Marks: 35 **Minimum Pass Marks: 12**

[TO BE PREPARED LATER]

CS – 601 DATA AND NETWORK COMMUNICATION

Effective From Session 2012-2013

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT – I

Data Communication Component, Distributed processing, network criteria, protocol and standards, Line configuration, Topologies, Transmission mode, Categories of networks, Inter-networks.

UNIT – II

The OSI model, Function of the layers, TCP/IP Protocol suite, Analog - Digital data & signals, Periodic and Aperiodic signals, Time and Frequency Domains, Composite Signals.

UNIT – III

Digital to Digital Conversion, Analog to digital conversion, Digital to analog Conversion, Analog to Analog conversion, Digital data transmission, DTE- DCE Interface, EIA449, EIA530, X.21 Standards, Modems, Cable Modem.

UNIT – IV

Transmission media - Introduction, Guided Media, Unguided Media, Transmission Impairment, Performance, Wavelength, Shannon capacity, Media Comparison, Multiplexing – FDM, WDM, TDM, Multiplexing Application, DSL and types of Digital subscriber lines.

UNIT - V

Error detection and correction, types of errors, detection**,** VRC, LRC, CRC, error correction, LAN Project 802, IEEE 802.x, LLC,MAC,PDU, Ethernet , Token Bus, Token Ring. FDDI, LAN Comparison.

TEXT BOOKS

1. Data Communication and Networking – Forouzan – Tata McGraw Hill.

Reference Books:

1. Computer networks – Tannenbaum

CS – 602 WEB TECHNOLOGIES AND PROGRAMMING

Effective From Session 2012-2013

Maximum Marks: 35 **Minimum Pass Marks: 12**

Unit-I

Concept of the point to point and Broadcast Network, Bus, Ethernet LAN, FDDI LAN, Token Ring, Star, Hub, WAN, MAN, TCP/IP, Routers, Gateways, Bridge, Switches, Subnet, Internet & Intranet, Introduction to TCP/IP and Shell Account, Internet Addressing, Difference between a Name and an Address.

Unit-II

Concept of ISP(Internet Service Provider), Internet Backbones, NAPs, Concept of URL Address, Domain Names, Hypertext Concepts and World Wide Web, FTP, NNTP. The Email Electronic Post Service, Type of Email, SMTP, Configuring a Computer for an email, Free E-mail sites and setting e.g. hotmail, mail city, email with additional features, websites.

Unit-III

Web server and proxy server, Web caches, FAQS, Web browse like Internet Explorer, Netscap Navigator, Netscap Communication Suit, Internet Viruses, Internet security issues, Embedded and S/W based firewall, Data encryption and Digital signatures and certificates.

Unit-IV

The art of creating the website and home page, The HTML programming basics, Syntax and rules, Tables, Frames, Forms, Example of HTML page, Choice of page color, banners, Linking with HTML page, Div, Span, metatags, span.

Unit-V

The search and search engine for internet, Spidders, Robotes, Botes, Internet Agents, mobile agents, meta search sites, outlook express and front page.

Books:

1. Web Tech.: A Computer Science Perspective-Jeffrey C. Jackson
   - Pearson Education

Reference Books :

2. Internet and Web Technologies – Raj Kamal – TATA McGraw Hill
3. Internet the complete reference – Sybex Pub.
4. Computer Networks - A. S. Tanunbum.

CS – 603 JAVA PROGRAMMING
(FOR HONS. & IT COURSES)

Effective From Session 2012-2013

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT–I

C++ Vs JAVA,JAVA and Internet and WWW, JAVA support systems, JAVA environment. JAVA program structure,Tokens, Statements, JAVA virtual machine, Constant & Variables, Data Types, Declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting. Operators : Arithmetic, Relational, Logical Assignments, Increment and Decrement, Conditional, Bitwise, Special, Expressions & its evaluation**.**

If statement, if…else… statement, Nesting of if…else… statements, else…if Ladder, Switch, ? operators, Loops – While, Do, For, Jumps in Loops, Labelled Loops.

UNIT–II

Defining a Class,Adding Variables and Methods, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods.

Inheritance: Extending a Class, Overriding Methods, Final Variables and Methods, Final Classes, Finalize Methods, Abstract methods and Classes, Visibility Control.

UNIT–III

Arrays: One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interface Extending Interface, Implementing Interface, Accessing Interface Variable, System Packages, Using System Package, Adding a Class to a Package, Hiding Classes.

UNIT–IV

Creating Threads,Extending the Threads Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the Runnable Interface.

UNIT–V

Local and Remote Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets, Getting Input from the User.

TEXT BOOKS:

1. *E. Balaguruswamy,* ***"Programming In Java",*** *2nd Edition, TMH Publications* ISBN

& REFERENCE BOOKS:

1. *Peter Norton,* ***"Peter Norton Guide To Java Programming",*** *Techmedia Publications*

CS – 604 SOFTWAR ENGINEERING
(FOR HONS. COURSE)
Effective From Session 2012-2013

Maximum Marks: 35 **Minimum Pass Marks: 12**

UNIT I
SOFTWARE PROCESS
Introduction –S/W Engineering Paradigm – life cycle models (water fall, incremental, spiral, WINWIN spiral, evolutionary, prototyping, object oriented) - system engineering – computer based system – verification – validation – life cycle process – development process –system engineering hierarchy.

UNIT II
SOFTWARE REQUIREMENTS
Functional and non-functional - user – system –requirement engineering process – feasibility studies – requirements – elicitation – validation and management – software prototyping – prototyping in the software process – rapid prototyping techniques – user interface prototyping -S/W document. Analysis and modeling – data, functional and behavioral models – structured analysis and data dictionary.

UNIT III
DESIGN CONCEPTS AND PRINCIPLES
Design process and concepts – modular design – design heuristic – design model and document. Architectural design – software architecture – data design – architectural design – transform and transaction mapping – user interface design – user interface design principles. Real time systems - Real time software design – system design – real time executives – data acquisition system - monitoring and control system. SCM – Need for SCM – Version control – Introduction to SCM process – Software configuration items.

UNIT IV
TESTING
Taxonomy of software testing – levels – test activities – types of s/w test – black box testing – testing boundary conditions – structural testing – test coverage criteria based on data flow mechanisms – regression testing – testing in the large. S/W testing strategies – strategic approach and issues - unit testing – integration testing – validation testing – system testing and debugging.

UNIT V
SOFTWARE PROJECT MANAGEMENT
Measures and measurements – S/W complexity and science measure – size measure – data and logic structure measure – information flow measure. Software cost estimation – function point models – COCOMO model- Delphi method.- Defining a Task Network – Scheduling

– Earned Value Analysis – Error Tracking - Software changes – program evolution dynamics – software maintenance – Architectural evolution. Taxonomy of CASE tools.

TEXT BOOK

1. Roger S.Pressman, Software engineering- A practitioner's Approach, McGraw-Hill International Edition, 5th edition, 2001.

REFERENCES

1. Ian Sommerville, Software engineering, Pearson education Asia, 6th edition, 2000.
2. Pankaj Jalote- An Integrated Approach to Software Engineering, Springer Verlag, 1997.
3. James F Peters and Witold Pedryez, "Software Engineering – An Engineering Approach", John Wiley and Sons, New Delhi, 2000.
4. Ali Behforooz and Frederick J Hudson, "Software Engineering Fundamentals", Oxford University Press, New Delhi, 1996.

CS – 605 SCIENTIFIC COMPUTATION
(FOR HONS. COURSE)
Effective From Session 2012-2013

Maximum Marks: 35 **Minimum Pass Marks: 12**

Note : - The question paper must be make as 50% theory and 50% computer programming based on syllabus.

Unit I :

Numerical computation : Computer Arithmetic: floating point number operations, normalization and their consequences, : Floating point represent of Numbers – Sources of Errors – Non-Associativity of Arithmetic – Propagated Errors – Pitfalls in Computation. Bisection, False position, Newton Raphson, Secant method, Graffes root squaring method, Convergence of solution.

Unit II :

Simultaneous Linear equations : Solution of simultanious liner equations - Gauss elimination method, Gauss- Seidal iterative method. Gauss Jordan elimination method. Triangularization method and Pivaoting condensation. III conditions equations and refinement of solutions.

Unit III :

Numerical Differentiation and Integration : Solutions of Differential equation.

Trapezoidal rule, Simpson 1/3 rule, Simpson 3/8 Eulers method, Runga - Kutta method, Predictor - Corrector method

Unit IV :

Interpolation and Approximation : Polynomial interpolation, Newton difference formula, Newton divide formula, Newton forward formula, Newton backward formula, Langrange Formula. Approximation of function by Taylor series.

Unit V :

Curve fitting method : Least square method, Nonlinear cure fitting. Data fitting, Cube Splines and Approximation Chebyshey Polynomials. Automatic error monitoring

Text Books :

1. Numerical methods for Scientific and Engineering Computation by M.K.Jain, S.R.K.Iyengar, R.K. Jain.

Reference Books :

1. Computer Oriented Numerical Methods By V. RAJARAMAN.
2. Method of Numerical Analysis By SHASTRI.
3. Computer Based Numerical Algorithm By KRISHNAMURTHY.
4. Computer Oriented Numerical Methods By BALAGURUSWAMI.

****