UNIVERSITY OF KOTA, KOTA
B.Sc. INFORMATION TECHNOLOGY EXAM. – 2016-17

Eligibility: 10+2 Science or Mathematics with 40% marks
Selection: Based on Merit in qualifying examination.

1. Scheme of Instruction:

Each year shall be of ten months (150 working days) duration. Details of lecture hours per week shall be as follows: **Theory:** Three hours/week for each Paper

Practical: Students are required to work in the Laboratory for 4 hours per week for each practical under faculty guidance.

2. Examination Scheme:

1. University shall conduct examinations only after completion of 150 working days of instruction in a year.
2. Each theory paper shall be of 100 marks (75 marks for written examination of 3 hrs duration and 25 marks for internal assessment).
3. Each practical paper shall be of 100 marks.
4. The internal marks will be awarded by committee consisting of Head of the Department & the faculty concerned.
5. The student have to pass internal and external exam separately theory as well as practical papers.

Theory:

1. **Assignments:** 40% of the internal assessment marks for each theory paper will be awarded on the basis of performance in the assignments regularly given to the students, and its records.
2. **Internal Examination:** 40% of the total Internal Assessment marks for each theory paper will be awarded on the basis of performance in written examination conducted by the faculty, one at the end of fourth month and another at the end of eighth month.
3. **Seminar/Oral examination:** 10% of the total internal assessment marks for each paper will be awarded on the basis of performance either in a seminar or internal viva-voce.
4. **Overall performance:** 10% of the total internal assessment marks will be awarded for each paper on the basis of performance and conduct in the classroom.

Practical :

1. **Project**: 80% of the total Internal Assessment Marks for each practical paper during I & II year will be awarded on the basis of project, its presentation and project report submitted by the students. This activity can be held in the team of maximum two students. There should be a project co-ordinator (faculty member of computer science department).
2. **Internal examination:** 10 % of the total Internal Assessment marks for each practical paper during I & II year will be awarded on the basis of performance in practical examination conducted by the faculty, once during the session. In III year it will be 80%.
3. **Overall performance:** 10 % of the total internal assessment marks will be awarded during I & II year for each practical paper on the basis of performance and conduct of the student in the practical lab. In III year it will be 20%.

Note: Detailed breakup of Internal Marks awarded as per above guidelines must be submitted to the university in a tabular format for each paper. Department/College must preserve answer books of internal examination for a period one year from the date of examination and must be presented to the university as and when required.

(a) **I division with distinction:** 75% or more marks in the aggregate provided the candidate has passed all the papers and examinations in the first attempt.
(b) **I division :** 60% or more marks but fails to satisfy the criteria for being classified as first division with distinction laid in (a).
(c) **II division :** All other than those included in (a) and (b) above i.e. $< 60\%$ and $\geq 45\%$.
(d) Passing criteria is as per university ordinance. A candidate must pass the examinations within five years of the initial admission to the first year of the course.

B.Sc (Information Technology) Pt. I Exam – 2016-17

B. Sc. (IT) - I Year Exam. - 2015-16

Courses of Study and Examination

Paper	Paper Name	Lecture Hrs./week	Duration of exam. (hours)	Max. Marks		TOTAL
				University Exam.	Internal Assessment	
Paper-I (BIT-101)	Introduction to Information Technology	3	3	75	25	100
Paper-II (BIT-102)	Basic Mathematics	3	3	75	25	100
Paper-III (BIT-103)	Problem Solving through C Programming	3	3	75	25	100
Paper-IV (BIT-104)	Computer Organization & Architecture	3	3	75	25	100
Paper-V (BIT-105)	Data Base Systems	3	3	75	25	100
	Practical					
Practical-I (BIT-106)	Data Base Lab(Using MSAccess)	4(2+2)	3	75	25	100
Practical-II(BIT-107)	Programming Lab	4(2+2)	3	75	25	100
	Total			**525**	**175**	**700**

***for each practical paper students have to submit the project.**

B. Sc. (IT) - II Year Exam.- 2016-17

2. Courses of Study and Examination

Paper	Paper Name	Lecture Hrs./week	Duration of exam. (hours)	Max. Marks		TOTAL
				University Exam.	Internal Assessment	
Paper-I (BIT-201)	Computer Oriented Statistical Methods	3	3	75	25	100
Paper-II (BIT-202)	Visual Programming	3	3	75	25	100
Paper-III (BIT-203)	Fundamentals of Operating Systems	3	3	75	25	100
Paper-IV (BIT-204)	Web Technology I	3	3	75	25	100
Paper-V (BIT-205)	Business Organization and Management	3	3	75	25	100
	Practical					
Practical-I (BIT-206)	Visual Programming Lab	4(2+2)	3	75	25	100
Practical-II(BIT-207)	Web Technology Lab	4(2+2)	3	75	25	100
	Total			**525**	**175**	**700**

***for each practical paper students have to submit the project.**

B. Sc. (IT) - III Year Exam.- 2016-17

3. Courses of Study and Examination

Paper	Paper Name	Lecture Hrs./week	Duration of exam. (hours)	Max. Marks		TOTAL
				University Exam.	Internal Assessment	
Paper-I (BIT-301)	Programming in Java	3	3	75	25	100
Paper-II (BIT-302)	Client Server Technology	3	3	75	25	100
Paper-III (BIT-303)	System Analysis & Design	3	3	75	25	100
Paper-IV (BIT-304)	Web Technology II	3	3	75	25	100
Paper-V (BIT-305)	Multimedia Tools & Applications	3	3	75	25	100
Practical-I (BIT-306)	System Design Project	4(2+2)	3	75	25	100
Practical-II(BIT-307)	JAVA Lab	4(2+2)	6	75	25	100
	Total			**525**	**175**	**700**

***for each practical paper students have to submit the project.**

B. Sc. (IT) - I Year Exam.- 2016-17

BIT - 101: Introduction to Information Technology

Time: 3 Hrs. **Max. Marks: 75**

UNIT - I

Computer Basics: Algorithms, A Simple Model of a Computer, Characteristics of Computer, Problem-solving Using Computers.

Data Representation: Representation of Characters in computers, Representation of Integers, Representation of Fractions, Hexadecimal Representation of Numbers, Decimal to Binary Conversion, Error-detecting codes.

Input & Output Devices: Description of Computer Input Units, Other Input Methods, Computer Output Units.

UNIT - II

Computer Memory: Memory Cell, Memory Organization, Read Only Memory, Serial Access Memory, Physical Devices Used to Construct Memories, Magnetic Hard Disk, floppy Disk Drives, Compact Disk Read Only Memory, Magnetic Tape Drives.

Processor: Structure of Instructions, Description of a Processor, Machine Language Programs, An Algorithm to Simulate the Hypothetical computer.

UNIT - III

Binary Arithmetic: Binary Addition, Binary Subtraction, Signed Numbers, Two's Complement Representation of Numbers, Addition/Subtraction of Numbers in 2's Complement Notation, Binary Multiplication, Binary Division, Floating Point Representation of Numbers, Arithmetic Operations with Normalized Floating Point Numbers.

Computer Architecture: Interconnection of Units, Processor to Memory communication, I/O to Processor Communication, Interrupt Structures, Multiprogramming, Processor Features, Reduced Instruction Set Computers (RISC), Virtual Memory.

UNIT-IV

Software Concepts: Types of Software, Software Qualities & Attributes, Programming Languages (Its types and differences).

Operating Systems: Definition, O.S. functions, brief introduction of OS types, A Brief History of Linux, MS-DOS, Windows Operating System.

UNIT - V

Computer Generation & Classifications: First, Second, Third, Fourth and Fifth Generation of computers, Classification of Computers, Concept of Distributed and parallel Computers.

Internet: Concept of Network, World Wide Web, Uniform Resource Locator, Web Browsers, IP Address, Domain Name, Internet Service Providers, Introduction to Internet Security, Internet Requirements, Web Search Engine, Net Surfing, Internet Services, Intranet and Extranet.

Text / Reference Books

1. P.K.Sinha "Introduction to Information Technology",
2. V. Rajaraman, "Fundamentals of Computers", 3rd Edition, PHI Publications

3. Nasib S. Gill, "Essentials of Computer & Network Technology", Khanna Publications.
5.Deepak Bharihoke, "Fundamentals of Information Technology", Excel Books.

BIT - 102: Basic Mathematics

Time: 3 Hrs. **Max. Marks: 75**

UNIT - I

Number Systems, LCD & GCD, Fibonacci numbers, Sequences and series: AP, GP and HP, Sum of n terms, arithmetic, geometric, harmonic means between two numbers (excluding arithmetic geometric series).
Logarithms: definition, Laws regarding product, quotient, exponent and change of base.

UNIT – II

SETS: Sets, Subsets, Equal Sets, Null set, Universal set, Finite & Infinite sets, Open & Closed sets etc., Operations on Sets, Partition of sets, Cartesian product.

Unit - III

Relations and Functions: relation, properties of relations, equivalence relation, equivalence relation with partition , partial order relation, maximal and minimal points, pigeonhole principle, function, domain and range, onto, into and one-to-one functions, composite functions, inverse functions, introduction of algebraic, trigonometric, logarithmic, exponential, hyperbolic functions, zeros of functions.

UNIT – IV

Differentiation: Derivative, derivatives of sum, differences, product & quotients, derivatives of composite functions, logarithmic differentiation, mean value theorem, expansion of functions, (Maclaurin's & Taylor's.), indeterminate forms, L'Hospitals rule, maxima & minima, concavity, asymptote, singular points, curve tracing, successive differentiation & Leibnitz theorem.

UNIT - V

Basic Concepts of Graph Theory: Vertices, edges, degree, paths, circuits, cycles, complete graphs and trees. Multi-graphs, weighted graphs and directed graphs, Adjacency matrix of a graphs. Connected and disconnected graphs. Permutations (Simple and under restrictions), combinations (selections with and without replacement).

Text / Reference Books

1. C. L. Liu.: "Elements of Discrete Mathematics", Tata MGraw Hill.
2. Thomas, G.B. and R. L. Finney: "Calculus & Analytical Geometry", Addison-Wesley, 9th Edition.
3. Chandrika Prasad : "Mathematics for Engineers", Prasad Mudranalaya, Allahabad, 19th edition
4. Shanti Narayan: "Differential Calculus", S. Chand & Co.
5. Shanti Narayan: "Integral Calculus", S. Chand & Co.

BIT -103: Problem Solving through C Programming

Time: 3 Hrs. **Max. Marks: 75**

UNIT- I

Algorithm and Algorithm Development: Definition and properties of algorithm, flow chart Symbols, example of simple algorithms. Program design, errors: syntax error and semantic error, debugging, program verification, testing, documentation and maintenance. Variable names, data type and sizes, constants, declarations, arithmetic operators, relational and logical operators, type conversions, increment and decrement operators, bitwise operators, assignment operators and expressions, precedence and order of evaluation, standard input and output statements.

UNIT- II

Control Flow: Statements and blocks, if-else, nested if, switch, looping statement: while, for, do-while, break and continue, go-to and labels.

Arrays : declarations, integer and character array, reading and writing an array, one and two dimensional array, operations on arrays.

UNIT – III

Functions and Program Structure: Basics of function, function definition and declaration, external variables, scope rules, header files, static variables, register variables, block structure, initialization, recursion, the C preprocessor.

Pointer : Pointers and addresses, pointers and function arguments, address arithmetic. Character pointers, pointers to pointers, Pointers to functions.

UNIT - IV

Structures: Basics of structures, structures and functions, arrays of structures, pointers to structures, self-referential structures, type-def, unions.

UNIT - V

File Handling: access methods , different file operations and functions, concept of text & Binary files, file I/O, command line argument, Formatted file input and output.

Text / Reference Books

1. Deendayalu R., “Computer science Volume I and II”, Second Edition,Tata McGraw-Hill Publishing Company Limited, New Delhi.
2. Rajaraman V., “Fundamentals of computers”, Second Edition, Prentice Hall of India Private Limited, New Delhi.
3. Kernighan B.W. and Ritchie D.M., “The C Programming Language”, Prentice Hall of India Private Limited New Delhi.
4. Dromey R., “How to solve it by computers”. Prentice Hall of India Private Limited, New Delhi.

BIT -104 Computer Organization & Architecture

Time: 3 Hrs. **Max. Marks: 75**

UNIT- I

Basic Computer Organization: Instruction codes, direct and indirect address, timing and control signal generation, instruction execution cycle, memory reference instructions, input output instructions.

Register Transfer and Micro Operations: Bus and memory transfers, three state bus buffers, binary adder, binary incrementer, arithmetic circuit, and logic and shift micro operations, ALU.

UNIT- II

Central Processing Unit: General register organization, memory stack, one address, two address instructions, data transfer, arithmetic, logical and shift instructions, software and hardware interrupts (only brief introduction), arithmetic and instruction pipelines.

UNIT- III

Computer Arithmetic: Addition and subtraction with signed magnitude data, multiplication algorithms, hardware algorithm and booth algorithm, division algorithm.

UNIT - IV

Input Output Organization: Asynchronous data transfer- handshaking, asynchronous serial transfer, interrupt initiated I/O, DMA transfer, interfacing, peripherals with CPU (introduction), keyboard, mouse, printer, scanner, network card.

UNIT- V

Memory Organization: ROM, RAM, hard disk, CD-ROM, Cache memory- direct mapping scheme, virtual memory concept.

Text / Reference Books

1. Mano M., “Computer System Architecture”, Pearson Education.
2. Ram B., “Computer Fundamentals, Architecture & Organisation”, New Age International, New Delhi

BIT-105 Data Base Systems

Time: 3 Hrs. **Max. Marks: 75**

UNIT- I

Introduction: Purpose of the data base system, data abstraction, data model, data independence, data definition language, data manipulation language, data base administrator, data base users, overall structure, schema and subschema.

UNIT- II

ER Model: entities, mapping constrains, keys, E-R diagram, reduction of E-R diagrams to tables, generation, aggregation, design of an E-R database scheme.

UNIT-III

Network model: basic concepts, data structure diagrams, DBTG CODASYL model, DBTG data retrieval facility, DBTG update facility, DBTG set processing facility, mapping networks to file, networks system.

UNIT-IV

Hierarchical model: basic concepts, tree structure diagrams, data retrieval facility, update facility, virtual records, mapping hierarchical to files, hierarchical system.

UNIT-V

File and system structure: overall system structure, file organisation, logical and physical files organization, sequential and random, indexing and hashing. Introduction to Ms-Access, Data base creation

Text / Reference Books

1. Date C.J., "Database Systems", Addision Wesley.
2. Korth, "Database Systems Concepts", McGraw Hill.
3. Database Management System", Ramakrishna, Gehkre, McGraw – Hill
4. Database management systems", Leon alexis, leon Mathews, "Vikash publication
5. Database system, Rob, coronel, 7th edition, Cenage Learning.

B. Sc. (IT) - II Year Exam.-2017-18

BIT - 201 Computers Oriented Statistical Methods

Time: 3 Hrs **Max. Marks: 75**

Unit 1

Introduction to Statistics: meaning, scope of statistics, collection and classification of data.

Unit 2

Application based processing logic of measures of central tendency, dispersion, skewness and kurtosis.

Unit 3

Bivariate Data: Correlation - Meaning types of correlation, Karl Pearson's Correlation and rank correlation, properties of correlation coefficients.

Unit 4

Linear Regression: Processing logic and numerical based on fitting of regression lines (using least square method).

Unit 5

Various properties related to regression coefficients.

Text / Reference Books

1. S.C. Kapoor, and all, "Elements of Mathematical Statistics", S. Chand & Sons.
2. S.C. Gupta, "Fundamentals of Mathematical statistics", PIII, 1991
3. Bala Guruswamy, "Computers oriented Statistical Methods", S.Chand, 1990
4. S.P. Gupta, "Fundamentals of Statistics", S.Chand 1993.
5. M.R. Speigel, "Statistics", Schaum Series, McGraw-Hill, 1981.

BIT - 202 Visual Programming

Time: 3 Hrs **Max.Marks: 75**

UNIT I

Client Server Basics: Client-Server And Other Computing Architectures, Understand File Server Versus Client-Server Database Deployment, Two Tier Versus Three Tire Client Server.
Client-Server Model, Visual Basic Building Blocks And Default Controls: Forms, Using Controls, Exploring Properties, Methods And Events, Introduction To Intrinsic Controls, Working With Text, Working With Choices, Special Purpose Controls.
VB Advance Controls: Events, Menu bar, Popup Menus, Tool bar, Message Box, Input Box, Built-in Dialog Boxes, Creating MDI, Working with Menus

UNIT II

VB Programming Fundamentals And Variables: Introduction to Variables, Variable Declaration, Arrays, Introduction to Constants And Option Explicit Statement, Assignment Statements, Working With Math Operations, Strings, Formatting Functions.
Controlling and Managing Program: All Control Statements, Loops, Error Trapping, Working with Procedures, Functions, Controlling How Your Program Starts.
Common controls and control arrays: Introduction to Common controls- Tree view, list view, tab strip, Creating and working with control arrays.

UNIT III

Visual Basic and databases: Understanding the Data Controls and Bound Controls, Introduction to Data Form Wizard, Introduce DAO, Working with Record sets, Record Pointer, Filters, Indexes, Sorts And Manipulation of Records.
Remote and ActiveX Data Objects: Working With ODBC, Remote Data Objects and Remote data Control, Introducing ADO, ADO Data Control.

UNIT IV

Using Data Grid Control and Active X Data Objects.
ActiveX Controls, Extending ActiveX Controls and Classes: Creating, Testing, Compiling, Enhancing and User Drawn ActiveX Controls, Using ActiveX Control Interface Wizard and Property Pages Wizard, Introducing Ambient, Extender Objects, Creating Property Pages, Building Class Modules, ActiveX DLL.

UNIT V

Client-Server Development Tools: COM, Services Models, Development Tools Included with VB 6, Working with Source Safe Projects.
Reports and Packaging: Data Reports and Crystal Reports, Packaging A Standard EXE Project, VB And Internet: Introduction to VBScript, Tools used with VBScript and VBScript Languages, Introduction to Active Server Pages, ASP Objects.

Text / Reference Books

1. Gary Cornell – "Visual Basic 6 from the Ground up" - Tata McGraw Hill - 1999.
2. Noel Jerke – "Visual Basic 6 (The Complete Reference)" - Tata McGraw Hill - 1999.

BIT 203: Fundamentals of Operating Systems

Time: 3 Hrs **Max.Marks: 75**

Unit I

Introduction: Definition of an Operating System, Mainframe, desktop, single user & multi user OS distributed, real-time and handheld OS.

Unit II

Operating System Structures: System components, Operating System services, system calls, systems programs, system structure, virtual machines.
Process Management: criteria, scheduling algorithms, algorithm evaluation.
Process Synchronization: The critical section problem, semaphores, classical problems of synchronization.

Unit IV

Memory Management: Swapping, contiguous memory allocation, paging, segmentation, segmentation with paging.

Unit V

Virtual Memory: Demand paging, page replacement, allocation of frames, thrashing.

Text / Reference Books

1. Silberschatz G.G., "Operating System Concepts", John Wiley & Sons Inc.
2. A. Tananbaum "Modern Operating Systems", Prentice Hall Publications.

BIT 204: Web Technology I

Time: 3 Hrs **Max.Marks: 75**

Unit I

Introduction to Basics of Internet:

Concepts of Internet : Domain, IP Addressing, Resolving Domain Names, Overview of TCP/IP and its Services, WWW.

Unit II

Designing Pages with HTML

Introduction to HTML, Essential Tags, Deprecated 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,

Unit III

Hypertext, Hyperlink and Hypermedia, Links, Anchors and URLs, concept of navigation, Different Section of a Page and Graphics, Footnote and e-Mailing, Creating Table, Frame, Form and Style Sheet.

Unit IV

DHTML

Dynamic HTML, Document Object Model, Features of DHTML, CSSP (Cascading Style Sheet Positioning) and JSSS (JavaScript assisted Style Sheet), Layers of Netscape, The ID Attribute, DHTML Events.

Unit V

Web Designing Tools

Front Page Basics , Web Terminologies, Phases of Planning and Building Web Sites, The FTP, HTTP and WPP, Features, Front Page Views, Adding Pictures, Backgrounds, Links, Relating Front Page to DHTML.

Text / Reference Books

1. “HTML Black Book” – Steven Holzner – Dreamtech Press
2. “HTML, Java Script, DHTML, PERL, CGI” – Evan Bayross – BPB

BIT 205: Business Organization and Management

Time: 3 Hrs **Max.Marks: 75**

Unit I

Business – Meaning and Contents, Business as a system, Business and Legal and Economic Environment, Forms of Business Organization (meaning, merits & demerits)
Management- Management Principles, Henry fayol's principles of management, Taylor's Scientific Management, Management Process, Basic Functions (in short),Meaning, Nature and Process, Role of Manager

Unit II

Organizational Behavior- Need of Understanding human behavior in organizations, Challenges and opportunities for OB, Contributing disciplines to the field of OB Conceptual Models of OB

Unit III

Managing Personnel- HRM- Meaning and Functions, Man Power Planning, Job Analysis and Design, Training, Career Planning & Development, Motivation, Compensation Management

Unit IV

Managing Finance-Concept of fixed and Working Capital, Main Sources of Finance, Accounting, Meaning, Users, Budgeting- Meaning, Type of Budgets

Unit V

Managing Production- Basic Concepts, Objectives, Elements of Productions, Planning, and Control.
Managing Sales and Marketing- Basic Concepts of marketing, Sales Promotions (including Salesmanship)

Text / Reference Books

1. B.P. Singh & T.N. Chabbra, "Business Organisation and Management Functions", Dhanpat Rai & Co. 2000.
2. Philip Kotler, "Marketing Management" –(9th Ed.) Prentice Hall of India.
3. Dr. S.N. Maheshwari, "Financial Management – Principles and Practice" (6th revised Ed.) S. Chand & Sons.
4. Stephen P. Robbins, "Organisational Behaviour" (8th Ed.) Prentice Hall of India.

BIT 206: Practical I: Visual Programming Lab

Experiments based on the paper BIT 202 and project development for Internal Assessment.

BIT 207: Practical II: Web Technology Lab

Experiments based on the paper BIT 204 and project development for Internal Assessment.

B. Sc. (IT) - III Year Exam.- 2018-19

BIT 301: Programming in Java

Time: 3 Hrs. **Max. Marks: 75**

Unit - I

Introduction to Java, Features of Java, Object Oriented Concepts, Lexical Issues, Data Types, Variables, Arrays, Operators, Control Statements.

Unit - II

Classes, Objects, Constructors, Overloading method, Access Control, Static and fixed methods, Inner Classes, String Class, Inheritance, Overriding methods, Using super, Abstract class.

Unit - III

Packages, Access Protection, Importing Packages, Interfaces, Exception Handling, Throw and Throws, Thread, Synchronization, Messaging, Runnable Interface, Inter thread Communication, Deadlock, Suspending, Resuming and stopping threads, Multithreading.

Unit - IV

I/O Streams, File Streams, Applets, String Objects, String Buffer, Char Array, Java Utilities, Code Documentation.

Unit - V

Networks basics, Socket Programming, Proxy Servers, TCP/IP Sockets, Net Address, URL, Datagrams, Working with windows using AWT Classes, AWT Controls, Layout Managers and Menus.

Text / Reference Books

1. Cay S.Horstmann, Gary Cornell – "Core Java 2 Volume I – Fundamentals",5th Edn. PHI, 2000.
2. P. Naughton and H. Schildt – "Java2 (The Complete Reference)" - Third Edition,TMH 1999.
3. K. Arnold and J. Gosling – "The Java Programming Language" - Second Edition, Addison Wesley, 1996.

BIT 302: Client Server Technology

Time:3 Hrs **Max. Marks:75**

Unit 1

Client/Server Computing: Evolution of client/server concept, definition, history, need and motivation for client/server approach, client/server approach, Client / server types and its examples.

Unit 2

Client/server development tools, advantages of client/server technology connectivity, user productivity reduction in network traffic, faster delivery of system.

Unit 3

The Role of Client - Client request for service, dynamic data exchange, OLE, Common Object Request Broker Architecture (CORBA), Components of client/server application.
The Role of Server - Server function, network operating system: Novel Netware, LAN Manager, Server Operating System Application Architecture.

Unit 4

Architecture : Components of client-server architecture, application partitioning, the two layer and three-layer architectures, communication between clients and servers, use of APIs in client/server computing, middleware technology in client/server computing. Open System Interconnectivity (OSI), Inter Process Communication (IPC).

Unit 5

Client/Server System Development Network Management. Remote System Administration. LAN Network Management, Security Issue, Developing application on RDMS, GII design concepts.

Text / Reference Books

1. Robert Orfali, Dar Harkey and J.Edwards : “the Essential Client/Server Survival Guide”: Galgotia, 2001.
2. Beth Gold Bernstien and david Marea Designing Enterprise Client/Server System, PHI, 1998.
3. Devire and Drawna, "Client/Server Computing", McGraw Hill 1993.
4. Thomas S. Ligon, "Client-Server Communication "McGraw Hill 1997.
5. Berson : Client/Server Architecture, Architecture, 2nd Edition, Mc-Graw Hill.

BIT-303 System Analysis & Design

Time: 3 Hrs. **Max. Marks: 75**

UNIT-I

System Concept: Definition, Characteristics, Elements of system, Physical and abstract system, open and closed system, man-made information systems.
System Development Life Cycle: Various phases of system development, Considerations for system planning and control for system success.
System Planning: Base for planning a system, Dimensions of Planning.

UNIT-II

Initial Investigation: Determining users requirements and analysis, fact finding process and techniques.
Feasibility study: Determination of feasibility study, Technical, Operational & Economic Feasibilities, System performance constraints, and identification of system objectives, feasibility report.
Cost/Benefit Analysis: Data analysis, cost and benefit analysis of a new system. Categories determination and system proposal.

UNIT-III

Tools of structured Analysis: Logical and Physical models, context, diagram, data dictionary, data diagram, form driven methodology, IPO and HIPO charts, Gantt charts, system model, pseudo codes, Flow charts- system flow chart, run flow charts etc., decision tree, decision tables, data validation.
Input/ Output and Form Design: Input and output form design methodologies, menu, screen design, layout consideration.

UNIT-IV

Management standards – Systems analysis standards, Programming standards, Operating standards. Documentation standards –User Manual, system development manual, programming manual, programming specifications, operator manual.
System testing & quality: System testing and quality assurance, steps in system implementation and software maintenance.
System security: Data Security, Disaster/ recovery and ethics in system development, threat and risk analysis. System audit.

UNIT-V

Organisation of EDP: Introduction, Job Responsibilities & duties of EDP Personnels- EDP manager, System Analyst, Programmers, Operators etc. Essential features in EDP rganization.
Selection of Data Processing Resources: purchase, lease, rent-advantages and disadvantages. Hardware and software procurement – In-house purchase v/s hiring and lease.

Text / Reference Books

1. V K Jain, "System Analysis & Design" Dreamtech Press

2. A Hoffer, F George, S Valaciah "Modern System Analysis &Design' Low Priced Edn. Pearson Education.
3. V.K.Kapoor, "Information Technology & Computer Applications", Sultan Chand & Sons, New Delhi

BIT 304: Web Technology II

Time: 3 Hrs. **Max. Marks: 75**

Unit - I

Internet Basics, Introduction to HTML, List, Creating Table, Linking document, Frames, Graphics to HTML Doc, Style sheet, Style sheet basic, Add style to document, Creating Style sheet rules, Style sheet properties, Font, Text, List, Color and background color, Box, Display properties.

Unit - II

Introduction to Java script, Advantage of Java script, Java script Syntax, Data type, Variable, Array, Operator and Expression, Looping, Constructor, Function, Dialog box.

Unit - III

Javascript document object model, Introduction, Object in HTMl, Event Handling, Window Object, Document object, Browser Object, Form Object, Navigator object, Screen object Build in Object, User defined object, Cookies.

Unit - IV

ASP. NET Language Structure, Page Structure - Page event, Properties &Compiler Directives. HTML server controls - Anchor, Tables, Forms, Files. Basic Web server Controls, Lable, Textbox, Button, Image, Links, Check & Radio button, Hyperlink. Data List Web Server Controls - Check box list, Radio button list, Drop down list, List box, Data grid, Repeater.

Unit - V

Request and Response Objects, Cookies, Working with Data - OLEDB connection class, command class, transaction class, data adaptor class, data set class. Advanced Issues - Email, Application Issues, Working with ITS and page Directives, Error handling. Security-Authentication, IP Address, Secure by SSL & Client Certificates.

Text / Reference Books

1. I. Bayross, "Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Perl CGI", BPB Publications, 2000
2. J. Jaworski, "Mastering Javascript", BPB Publications, 1999
3. T. A. Powell, "Complete Reference HTML" (Third Edition),TMH, 2002
4. G.Buczek, "ASP.NET Developers Guide", TMH, 2002

BIT 305: MULTIMEDIA TOOLS AND APPLICATIONS

Time: 3 Hrs. **Max. Marks: 75**

Unit - I

Multimedia : Introduction, Main elements, Need, Benefits, Framework. Multimedia devices, Applications, Introduction to multimedia presentation software, Concept of virtual reality.

Unit - II

Image Editing Software (Photoshop): Basic Concepts, Image handling, Layers, Channel and Masks, Screen Capture, Different File formats (GIF, JPEG & PNG), painting and editing.

Unit - III

Web Development : Internet and WWW, History of Internet, Basic services, Concept of Web browser, Web document, Web server, Basics of Web site design, Characteristics of good website, Publishing and Registering websites, Introduction to Internet Service Providers and Search Engines.

Unit - IV

HTML : Introduction to HTML, structure of HTML code, various tags, Frames, creating link in Web pages, Forms, APPLET tag, CSS, DOM, DHTML, XML : Introduction, Structure, XML Markup, Viewing XML, document (using CSS, DOM)

Unit - V

Web Scripting : Installing & Managing Web Server (IIS, PWS), Javascript, VBScript, ASP : Introduction, features, ASP objects, Database connectivity (ODBC).

Text / Reference Books

1. Deborah S. Roy, Eric J Roy, Mastering HTML, 4.0.
2. A. Russel Jones, Mastering Active Server Pages 3.0, BPB Publications
3. Reinhardt, Lentz, Flash 5 Bible, IDG Books, New Delhi
4. Deke, McClelland & Ulrichfiller Laurie, Photoshop 9 CS2 Bible, Wiley India.
5. Bangia Ramesh, Multimedia and Web Technology, Firewall Media.
6. Leon Alexis, Leon Mathews, Internet For Everyone, Leon TECHWorld.
7. WiraSinha Anushka, Flash in a Flash Web Development, PHI
8. Jeffcoate Judith, Multimedia In Practice- Technology and Applications, Pearson Education.

BIT 306: Practical - I

System Design Project: The students have to design and develop a software project by adopting

SDLC approach in groups (not more than 3 or 4).

- Problem definition and requirement Analysis report
- Design and implementation

• Documentation (report)

BIT 307: Practical – II

Experiments based on the paper BIT 204 and project development for Internal Assessment.

Innovations and Employability in the area of Computer Science

Innovations

Computer Science is the most creative and diverse field of all the technology fields. If you can imagine an outcome, this major will provide you the tools to create it. In addition to providing a solid grounding in all the most significant areas of computer science, The syllabus is designed for students considering their individual needs, who want to study a broad computer science curriculum with an emphasis on combining both the theory and practice of computer science. Then the syllabus will be able to develop computer professionals with a good grasp of how to design and build high quality systems for industry that are usable in real world socio-technical contexts.

The overall aim to develop this syllabus of Computer Science course is to deliver a broad but rigorous Computer Science education coupled with direct exposure to cutting edge research. Graduates and Post Graduate of this programme are intended to continue directly into careers involving innovative thinking and problem solving, as part of an advanced research, development or other applied field of computer science.

Employability

Selection to study the Computer Science opens up many avenues for future career prospects.
Almost every major challenge in the world turns to the use of computer science to solve problems; from medical research, education, supporting aid work in disaster areas, helping to create a sustainable environment, the logistics of moving products around the world, to the world of business and securing and managing the vast levels of data through visualisation, security and transmission; not to mention the world of media.

Being a successful Computer professional is not just about solving technical problems, but also collaboration, leadership, and teamwork; which is why our degree courses encourage you to gain these interdisciplinary and interpersonal skills in addition too.

- Computers and computing technology lies at the heart of organisations across all industrial sectors; and our graduates are equipped to support and develop these systems.
- Computer Technology is the fastest developing technology in the world, and the requirement for graduates with the skills to work in this field is continuing to grow, whilst the actual supply of graduates with the skills is dropping worldwide.

Computer Science will fulfill the growing market demand in government and private sectors both for expertise in following:

Databases
Communication Networking
Image processing
Animation
Software development ..... etc

JOB OPPORTUNITIES FOR UNDERGRADUATE STUDENTS

A. [BCA/B.Sc. (CS/IT)/BA/BSc./B.Com (with Computer)/PGDCA] graduate can work as a

1. Computer Operator/Computer
2. Informatic Assistant etc. In a government sector
3. BDP, Desktop Publishing, BPO professionals
4. Low-level Web designers, Graphic designers
5. Data entry operators
6. Technical Assistant