NAGARJUNA GOVERNMENT COLLEGE

(AUTONOMOUS)

NALGONDA

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BOARD OF STUDIES

DEPARTMENT OF COMPUTER APPLICATIONS

B.COM (COMPUTER APPLICATIONS)

2018-19

NAGARJUNA GOVERNMENT COLLEGE: NALGONDA

(Autonomous)

DEPARTMENT OF COMPUTER APPLICATIONS

B.COM-COMPUTER APPLICATIONS

BOARD OF STUDIES

2018-19

Board of Studies in the Department of B.Com – Computer Applications has been constituted with the following members for the year 2018-19.

S. No	Name	Designation
1	Dr. D Narayana Rao In-charge Department of Computer Application Nagarjuna Government College Nalgonda	Chair Person Chair Person Board of Studies Dept. of Computer Applications Govt. College, Nalgonda.
2	Dr. R. Rekha Asst Professor MG University Nalgonda	University Nominee 05/09/2018 HOD MCA/MGU/NLG
3	Sri. Y V Rama Rao Asst. Prof. Computer Applications GDC Hayathnagar, Hyderabad	Subject Expert 5/9/2018 Lecturer in..... Government Degree College Hayathnagar, R.R. Dist.
4	Dr. G. Rajitha Devi Asst. Prof. Computer Science GDC Hayathnagar, Hyderabad.	Subject Expert 5/9/2018 Lecturer in..... Government Degree College Hayathnagar, R.R. Dist.
5	Sri. K Shivaraju Lecturer in Computer Applications Nagarjuna Govt. College, Nalgonda	Member

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

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DEPARTMENT OF COMPUTER APPLICATION

BOARD OF STUDIES MEETING

The members of Board of Studies in Computer Application department, Nagarjuna Govt. College, Nalgonda met under the chairmanship of Dr. D Narayana Rao on 05/09/2018 at Department of Computer Application, Nagarjuna Govt. College, and passed the following resolutions

AGENDA

1. To consider and approve the Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) system for B.Com. I, II & III Year students (I,II,III,IV,V & VI Semesters) for the academic year 2018-19.
2. To consider and approve the syllabus of B. Com (Computer Applications) of I/II/III Years for I to VI semesters during the academic year 2018-19.
3. To consider and approve the modules (Units) and setting of Question papers as 70:30 for Theory External and Internal assignments for B.Com. I, II & III Year (I,II,III,IV,V & VI Semesters) for the academic year 2018-19.
4. To consider and approve the Syllabus of practical examinations at the end of I,II,III,IV,V &VI semesters for B.Com. I , II, III year students.
5. To consider and approve the Model question papers for B.Com. I, II & III year (I,II,III,IV,V & VI Semesters) for the academic year 2018-19.
6. To consider and approve the list Examiners for Paper setting and evaluation for the academic year 2018-19.
7. Any other related academic matters.

RESOLUTIONS

1. The Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) System can be implemented for the B.Com. I, II & III Year (I,II,III,IV,V & VI Semesters) students for the academic year 2018-19.

2. The modules and allotted Credits is approved for B.Com. I, II & III year (I,II,III,IV,V & VI semesters) students for the academic year 2018-19.

3. Unitization of syllabus into 5 units for each paper (module)

4. The evaluation of the students for each semester of I, II, III, IV, V & VI Consists 100 marks in the ratio of 70:30 External End Theory exam – 70 marks and internal exam consist 30 marks.

5. Approved the syllabus for I, II, III, V, VII & VIII papers and Model question papers.

6. Approved to conduct the Practical examinations at the end of I, II III, IV, V &VI Semesters. Each paper consist 20 marks. The syllabus is approved and followed the practical question bank (as per University Question bank).

7. Approval the Panel of examiners for paper setting and evaluation for the academic year 2018-19.

8. Approved the proposal of preparation of scheme of valuation and key by Question paper setter.

SIGNATURES OF THE MEMBERS.

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NAGARJUNA GOVT. DEGREE COLLEGE, NALGONDA
DEPARTMENT OF COMPUTER APPLICATIONS

B.Com – COMPUTER APPLICATION

SUBJECT WISE CBCS CREDITS LIST

FOR 2018-19 ACADEMIC YEAR

Sno	YEAR/ Semester	Module (Paper)	Hours (HPW)	Max. Marks	Credits
1	I-YEAR / I-SEM Core-1	Information Technology (IT)	3T+2P Hrs	100 M + 20 M	4
2	I-YEAR / II-SEM Core-2	Relational Database Management Systems (RDBMS)	3T+2P Hrs	100 M + 20 M	4
3	II-YEAR / III-SEM Core-3	Programming with C.	3T+2P Hr	100 M + 20 M	4
4	II-YEAR/IV-SEM Core-4	Objective Oriented Programming with C++	3T+2P Hr	100 M + 20 M	4
5	III-YEAR/V-SEM Core-5 & 6	Excel Foundation	4T+2P Hrs	100 M + 20 M	4
		Web Technology / Business Simulation	4T+2P Hrs	100 M + 20 M	5
6	III-YEAR/VI-SEM Core-7 & 8	E-Commerce/Business Forecasting	4T+2P Hrs	100 M + 20 M	5
		Management Information Systems/ Business Analytics Programming	4T+2P Hrs	100 M + 20 M	5
	TOTAL CREDITS		**44**		**35**

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BOS 2018-19

DEPARTMENT OF COMPUTER APPLICATIONS
B.COM – COMPUTER APPLICATIONS

SYLLABUS

DEPARTMENT OF COMMERCE, N.G.C.

Structure of B.Com (Computer Application) (CBCS) forNagarjuna Govt. College (A), Nalgonda (w.e.f. Academic Year 2018-19)

B.COM (Computer Applications) PROGRAMME

Sl.No.	*Code*	*Course Title*	*Course Type*	*HPW*	*Credits*
(1)	(2)	(3)	(4)	(5)	(6)
FIRST YEAR: SEMESTER-I					
1.	BC107	Information Technology	DSC-4A	3T+2P	4
		Total		**5**	**4**
SEMESTER-II					
2.	BC207	Relational Database Management Systems	**DSE-4B**	3T+2P	4
		Total		**5**	**4**
SECOND YEAR: SEMESTER-III					
3.	BC307	Programming with C	**DSC-4C**	3T+2P	4
		Total		**5**	**4**
SEMESTER-IV					
4.	BC407	Objective Oriented Programming with C++	**DSC-4D**	3T+2P	4
		Total		**5**	**4**
THIRD YEAR: SEMESTER-V					
5.	BC506	Excel Foundation	DSC	4T+2P	4
6.	**BCC508(a)** BCC508(b)	Web Technology / Business Simulation	**DSE** DSE	**4T+2P**	5
		Total		**12**	**9**
SEMESTER-VI					
7.	BCC607 BCC607	**E-Commerce/ Business Forecasting**	**DSE** DSE	4T+2P	5
8.	**BCC608** BCC608	**Management Information Systems/ Business Analytics Programming**	**DSE** DSE	4T+2P	**5**
		Total		**12**	**10**
		GRAND TOTAL		**44**	**35**

AECC: Ability Enhancement Compulsory Course; ***SEC:*** *Skill Enhancement Course;* ***DSC:*** *Discipline Specific Course;* ***DSE:*** *Discipline Specific Elective;* ***GE:*** *Generic Elective; T=Theory; P=Practicals;*

SUMMARY OF CREDITS

Sl. No.	Course Category	No. of Courses	Credits Per Course	Credits
1	**DSC**	4	4X4	16
2	**DSE**	4	3Courses X 5 plus 1Course X 4	19
	TOTAL	**8**		**35**

B.COM – COMPUTER APPLICATI ONS
I-YEAR I-SEMESTER PAPER-I
INFORMATION TECHNOLOGY

Paper: BC107 **Max. Marks: 70+30**
PPW: 5 (3T & 2P) **Exam Duration: 3 Hrs.**
Credits : 4

Objective: *to acquire basic knowledge in Information Technology and its applications in the areas of business.*

UNIT-I: INTRODUCTION:
Introduction to computers - Generations of computers – An overview of computer system - Types of computers - Input & Output Devices. Hardware:Basic components of a computer system – Control unit – ALU - Input/output functions - Memory – RAM – ROM – EPROM - PROM and Other types of memory.

UNIT-II: OPERATING SYSTEM (OS):
Meaning - Definition & Functions - Types of OS - Booting process - DOS – Commands (internal & external) - Wild card characters – Virus & Hackers – Cryptography & cryptology Windows: Using the Start Menu –Control Panel – Using multiple windows – Customizing the Desktop – Windows accessories (Preferably latest version of windows or Linux Ubuntu).

UNIT-III: WORD PROCESSING:
Application of word processing - Menus & Tool Bars - Word processor – Creating – Entering - Saving & printing the document - Editing & Formatting Text - Mail Merge and Macros (Preferably latest version of MS Word or Libre Office Writer).

UNIT-IV: SPREAD SHEET:
Application of work sheet/spread sheet - Menus & Tool bars - Creating a worksheet - Entering and editing of numbers - Cell referencing - Worksheet to analyze data with graphs & Charts. Advanced tools: Functions – Formulae – Formatting numbers - Macros – Sorting- Filtering - Validation &Consolidation of Data (Preferably latest version of MS Excel or Libre Office Calc)

UNIT-V: POWER POINT PRESENTATION:
Application of Power Point Presentation – Menus & Tool bars – Creating presentations – Adding - Editing and deleting slides - Templates and manually creating presentation– Slide show – Saving - Opening and closing a Presentation –Types of slides - Slide Views - Formatting – Insertion of Objects and Charts in slides - Custom Animation and Transition (Preferably latest version of MS Power Point presentation - Libre Office Impress). Internet & Browsing:Services available on internet – WWW – ISP – Browsers. Multimedia: Application of multimedia – Images – Graphics- Audio and Video – IT security.

SUGGESTED READINGS:

1. Introduction to Computers: Peter Norton, McGraw Hill.
2. Fundamentals of Information Technology: Dr. NVN C hary, Kalyani Publishers.
3. Computer Fundamental: AnithaGoel, Pearson.
4. Information Technology Applications for Business: Dr. S. Sudalaimuthu, Himalaya
5. Introduction to Information Technology: ITL ESL, Pearson.
6. Introduction to Information Technology: V. Rajaraman, PHI.
7. Fundamental of Computers: Balaguruswamy, McGraw Hill.
8. PC Software under Windows: Puneet Kumar, Kalyani Publishers.
9. Information Technology and C language: Rajiv Khanna, New Age International.
10. Fundamentals of Information Technology: Alexis Leon, Vikas Publishing House.
11. Informational Technology: P. Mohan, Himalaya Publishing House.
12. Information Technology: R. Renuka, Vaagdevi Publishers.
13. OS-Linux Spoken Tutorials &Libre Office Spoken Tutorials by IIT Bombay.
14. Fundamentals of Information Technology: Rajiv Midha, Tax Mann Publications.

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B.COM – COMPUTER APPLICATIONS
I-YEAR II-SEMESTER PAPER-II
Paper : (BC 207) : RELATIONAL DATABASE MANAGEMENT SYSTEMS

Paper: BC 207 **Max. Marks: 50**
PPW: 5 (3T & 2P) **Exam Duration: 3Hrs**
Credits : 4

Objective: *to acquire basic conceptual background necessary to design and develop simple database system, Relational database mode, ER model and distributed databases, and to write good queries using a standard query language called SQL.*

UNIT-I: BASIC CONCEPTS: Database Management System - File based system - Advantages of DBMS over file based system - Database Approach - Logical DBMS Architecture - Three level architecture of DBMS or logical DBMS architecture - Need for three level architecture - Physical DBMS Architecture - Database Administrator (DBA) Functions & Role - Data files indices and Data Dictionary - Types of Database. Relational and ER Models: Data Models - Relational Model – Domains - Tuple and Relation - Super keys - Candidate keys - Primary keys and foreign key for the Relations – Relational Constraints - Domain Constraint - Key Constraint - Integrity Constraint - Update Operations and Dealing with Constraint Violations - Relational Operations - Entity Relationship (ER) Model – Entities – Attributes – Relationships - More about Entities and Relationships - Defining Relationship for College Database - E-R Diagram - Conversion of E-R Diagram to Relational Database.

UNIT-II: DATABASE INTEGRITY AND NORMALISATION: Relational Database Integrity – The Keys - Referential Integrity - Entity Integrity - Redundancy and Associated Problems – Single Valued Dependencies – Normalisation - Rules of Data Normalisation - The First Normal Form -The Second Normal Form - The Third Normal Form - Boyce Codd Normal Form - Attribute Preservation – Losslessjoin Decomposition - Dependency Preservation. File Organisation : Physical Database Design Issues - Storage of Database on Hard Disks - File Organisation and Its Types - Heap files (Unordered files) - Sequential File Organisation - Indexed (Indexed Sequential) File Organisation - Hashed File Organisation - Types of Indexes - Index and Tree Structure - Multi-key File Organisation - Need for Multiple Access Paths - Multi-list File Organisation - Inverted File Organisation.

UNIT-III: STRUCTURES QUERY LANGUAGE (SQL): Meaning – SQL commands – Data Definition Language - Data Manipulation Language - Data Control Language - Transaction Control Language - Queries using Order by – Where - Group by - Nested Queries. Joins – Views – Sequences - Indexes and Synonyms - Table Handling.

UNIT-IV : TRANSACTIONS AND CONCURRENCY MANAGEMENT: Transactions – Concurrent Transactions - Locking Protocol - Serialisable Schedules - Locks Two Phase Locking (2PL) – Deadlock and its Prevention - Optimistic Concurrency Control. Database Recovery and Security: Database Recovery meaning - Kinds of failures - Failure controlling methods - Database errors - Backup & Recovery Techniques - Security & Integrity - Database Security - Authorization.

UNIT-V: DISTRIBUTED AND CLIENT SERVER DATABASES: Need for Distributed Database Systems - Structure of Distributed Database - Advantages and Disadvantages of DDBMS - Advantages of Data Distribution - Disadvantages of Data Distribution - Data Replication - Data Fragmentation. Client Server Databases: Emergence of Client Server Architecture - Need for Client Server Computing - Structure of Client Server Systems & its advantages.

LAB: SQL QUERIES BASED ON VARIOUS COMMANDS.

SUGGESTED READINGS: 1) Database Systems: R.Elmasri & S.B. Navathe, Pearson.; 2) Introduction to Database Management System: ISRD Group, McGraw Hill.; 3) Database Management System: R.Ramakrishnan & J.Gehrke, McGraw Hill.; 4) Modern Database Management: J.A.Hoffer,V.Rames &H.Topi, Pearson.;5) Database System Concepts: Silberschatz, Korth & Sudarshan, McGraw Hill. 6) Simplified Approach to DBMS: Parteek Bhaia, Kalyani Publishers.7) Database Management System: Nirupma Pathak, Himalaya. 8) Database Management Systems: Pannerselvam, PHI.9) Relational Database Management System: Srivastava & Srivastava, New Age 10) PHPMySQL Spoken Tutorials by IIT Bombay. 11) Oracle Database: A Beginner's Guide: I.Abramson, McGraw Hill.

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B.COM – COMPUTER APPLICATIONS
II-YEAR III-SEMESTER PAPER-III

Paper: (BC 307): PROGRAMMING WITH C

Paper: BC 307 **Max. Marks: 70 + 30**
PPW: 5 (3T & 2P) **Exam Duration: 3 Hrs.**
Credits : 4

Objectives: *To gain the skills of Structured (Procedural/Functional) Programming using C Language.*

UNIT-I: INTRODUCTION TO C LANGUAGE, DATA TYPES AND I/O OPERATIONS:
Introduction: Types of Languages – History of C language – Basic Structure – Creating – Compiling - Linking and Executing the C Program - Pre-processors in "C".
Types and I/O operations: Keywords & Identifiers – Constants – Variables - Scope and Life of a Variable - Data types - Storage classes - Reading a character or values - Writing a character or value – Formatted Input and Output operations.

UNIT-II: OPERATORS, EXPRESSIONS AND DECISION MAKING:
Operators: Introduction – Arithmetic – Relational – Logical – Assignment - Conditional - Special operators – Expressions: Arithmetic – Evaluation - Type conversions.
Decision Making & Looping: Introduction - If statements - If-else statements - Switch statements - Conditional statements - While statements - Do statements - For Statements.

UNIT-III: ARRAYS AND STRINGS:
Arrays: Introduction - Defining an array - Initializing an array - One dimensional array – Two dimensional array - Dynamic array.
Strings: Introduction - Declaring and initializing string variables - Reading and Writing strings – String handling functions.

UNIT-IV: BUILT-IN FUNCTIONS AND USER-DEFINED FUNCTIONS:
Built-in functions: Mathematical functions - String functions - Character functions - Date functions.
User defined functions: Introduction - Need for user defined functions - Elements of functions - Return values and their types - Function declaration - Function calls - Recursive functions.

UNIT-V: STRUCTURES AND POINTERS:
Structures: Introduction - Declaring structures variables - Accessing structure members - Functions and Structures - Array of structures - Enumerated Data types - Introduction to Unions.
Pointers: Fundamentals - Understanding pointers - Address - Declaration of Pointers.

LAB: PROGRAMS USING C.

SUGGESTED READINGS:

1. Programming in ANSCI C: Balaguruswamy, McGraw Hill.
2. Programming in C: Ashok Kamthane, Pearson.
3. C How to Program: P.J. Deitel & H.M. Deitel, Pearson & PHI.
4. Programming in C: K.S. Kahlon, Kalyani Publishers.
5. Fundamental of C: Dr. N. Guruprasad, Himalaya Publishing House.
6. C: Learning and Building Business and System Applications: Susant Rout, PHI.
7. Mastering C: K.R. Venugopal, McGraw Hill.
8. Programming in C: J.B. Dixit, Firewal Media.
9. The C Programming Language: B.W.Kernighan & D.M.Ritchie, PHI.
10. C: The Complete Reference: H.Schildt, McGraw Hill.
11. Let Us C: Y.Kanetkar, BPB.
12. C++ Spoken Tutorials by IIT Bombay

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B.COM – COMPUTER APPLICATI ONS
II-YEAR IV-SEMESTER PAPER-IV

Paper: (BC 407): OBJECT ORIENTED PROGRAMMING IN C++

Paper: BC 407 **Max. Marks: 70 + 30**
PPW: 5 (3T & 2P) **Exam Duration: 3 Hrs.**
Credits : 4

Objective: *To gain skills of Object Oriented Programming using C++ Language.*

UNIT-I: INTRODUCTION:

Object Oriented Programming: Concepts – Benefits – Languages - Structured vs. Object Oriented Programming. C++: Genesis - Structure of a program – Tokens - Data Types – Operators - Control Structures - C vs C++ - Functions.

UNIT-II: CLASSES, OBJECTS, CONSTRUCTORS AND DESTRUCTORS:

Encapsulation - Hiding - Abstract data types - Object & Classes – Attributes - Methods - C++ class declaration - State identity and behaviour of an object. Purpose of Constructors – Default Constructor - Parameterized Constructors - Copy Constructor - Instantiation of objects – Default parameter value - Object types - C++ garbage collection - Dynamic memory allocation – Meta class / Abstract classes.

UNIT-III: OVERLOADING, CONVERSIONS, DERIVED CLASSES AND INHERITANCE:

Function and Operator Overloading - Overloading Unary and Binary Operators - Data and Type Conversions - Derived Classes - Concept of Reusability - Visibility modes - Types of Inheritance - Single and Multiple Inheritance - Multilevel Inheritance.

UNIT-IV: POLYMORPHISM, VIRTUAL FUNCTION, STREAMS AND FILES:

Polymorphism - Virtual - Classes - Pointer to Derived class - Virtual functions - Rules for Virtual function - Pure Virtual functions - Stream Classes - Types of I/O - Formatting Outputs - File Pointers – Buffer - C++ Stream - Unformatted console I/O operations – Functions: get( ) - put( ) – formatted console I /O operations - IOS class format functions - Manipulators.

UNIT–V: EXCEPTION HANDLING AND DATA STRUCTURES IN C++:

Exceptions in C++ Programs - Try and Catch Expressions - Exceptions with arguments. Data Structures: Introduction - Linked list - Stacks - Queues.

SUGGESTED READINGS:

1. Objected Oriented Programming with C++: E. Balagurusamy, McGraw Hill.
2. C++ Programming-A Practical Approach: Madhusudan Mothe, Pearson.
3. Object Oriented Programming Using C++: Chadha & Chadha, Kalyani.
4. Programming in C++: A. N. Kamthane, Pearson.
5. The Complete Reference C++: H. Schildt, McGraw Hill.
6. C++:How to Program: Deitel & Deitel, PHI.
7. Mastering C++: KR.Venugopal & R.Buyya, McGraw Hill.
8. Schaum"s Outlines: Programming with C++: by John R Hubbard.
9. Object Oriented Programming using C++: Somashekara, PHI.
10. C++ Spoken Tutorials by IIT Bombay.

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B.COM – COMPUTER APPLICATI ONS
III-YEAR V-SEMESTER PAPER-V
Paper : (BCCA 506) :EXCEL FOUNDATION

Paper: BCCA 506 **Max. Marks: 70+30**
PPW: 6 (4T+2P) **Exam Duration: 3 Hrs**
Credits : 4

Objective: Students will learn how to start working with M S Excel right from basics to Tables, Templates and Printing of their work.

UNIT-I: INTRODUCTING EXCEL: Workbooks and Worksheets, Moving Around a Worksheet, Ribbon tabs, Types of commands on the Ribbon, Using Shortcut Menus, Working with Dialogue Boxes, Task Panes, Getting started on your worksheet, Creating a chart, Printing your worksheet, Saving your worksheet, Exploring Data Types, Modifying Cell Contents, Deleting, Replacing, Editing of a cell. Some handy data entry techniques, Number Formatting.

UNIT-II: WORKSHEET OPERATIONS: Moving and resizing windows, Switching among windows, Activating a worksheet, Adding, Deleting a worksheet, Changing a sheet tab color, Rearranging your worksheets, Hiding, un-hiding a worksheet, Worksheet View, Comparing sheets side by side, Selecting ranges, complete rows and columns, noncontiguous ranges, multisheet ranges, special types of cells. Copying or Moving Ranges. Paste Special dialogue box, Adding comments to cells.

UNIT-III: TABLES AND FORMATTING: Creating a Table, Changing the Look of a Table, Navigating in a Table, Selecting parts of a Table, Adding, Deleting new rows or columns, Moving a Table, Working with the Total Row, Removing duplicate rows from a table. Sorting and filtering a table, Converting Table into Range. Formatting tools on the Home tab, Mini Toolbar, Fonts, Text Alignment, Wrapping text to fit a cell, Colors and Shading, Borders and Lines. Naming Styles.

UNIT–IV: EXCEL FILES & TEMPLATES: Creating a New Workbook, Filtering filenames, Saving and Auto Recovery, Password-Protecting a Workbook, Recovering unsaved work, Protect Workbook options, Checking Compatibility. Creating a Excel Templates, Modifying a template, Custom Excel Templates, Default Templates, Editing your Template, Resetting the default workbook, Saving your Custom Templates, Getting ideas for creating Templates.

UNIT–V: PRINTING YOUR WORK: Normal, Page Layout, Page Break View, Choosing your printer, Specifying what you want to print, Changing Page Orientation, Specifying paper size, Adjusting page margins, Inserting a page break, Removing manual page breaks, Printing Row and Column Titles, Scaling printed output, Header or Footer Options, Preventing certain cells, Objects from being printed, Creating Custom Views of your Worksheet. Creating PDF files.

Introducing Excel:

SUGGESTED READINGS:

1. Excel 2013 Bible: John Walkenbach. Wiley.
2. Microsoft Excel 2013: Data Analysis and Business Modeling: Winston, PHI
3. Excel Data Analysis - Modeling and Simulation: Hector Guerrero, Springer.
4. Excel Functions and Formulas: Bernd Held, BPB Publications.
5. Financial Analysis and Modeling using Excel and VBA: Chandan Sengupta, Wiley

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B.COM – COMPUTER APPLICATI ONS
III-YEAR V-SEMESTER PAPER-VI
BC 508 (a): WEB TECHNOLOGIES

Paper: BC508 (a) **Max. Marks: 70+30**
PPW: 6 (4T + 2P) **Exam Duration: 3 Hrs**
Credits : 5

Objective: *to gain skills of usage of Web Technologies to design Web pages.*

UNIT-I: INTRODUCTION:
Art of creating a web site - Markup language (HTML) – Hypertext - Formatting text - Forms & formulating instructions & formulation elements – Commenting code – Anchors - Back grounds – Images - Hyperlinks – Lists –Tables – Frames - Web design principles.

UNIT-II: AN OVER VIEW OF DYNAMIC WEB PAGES & DYNAMIC WEB PAGE:
An over view of dynamic web pages and dynamic web page technologies: Introduction to Dynamic HTML programing - Cascading style sheets (CSS) - Basic syntax and structure – Events handling - Changing Text and Attributes - Dynamically changing style - Text Graphics and placements - Creating multimedia effects with filters and Transactions.

UNIT-III: JAVA SCRIPT:
Introduction - Client side Java script - Server side Java script - Core features - Data types and variables – Operators - Expressions and statements – Functions – Objects – Array - Date and math related objects - Document object model - Event handling.

UNIT-IV: EVENTS AND EVENT HANDLERS:
General information about Events – Event – OnAbort – OnClick - Ondbl click - Ondrag drop – Onerror - Onfocus - Onkey Press – Onkey Up – Onload - Onmouse Down – Onmouse Move - Onmouse Out – Onmouse Over - Onmove - Onrest – Onresize - Onselect - On submit - Onunload.

UNIT-V: EXTENSIBLE MARKUP LANGUAGE (XML):
Introduction - Creating XML Documents - XML style Sheet - Hyperlinksin XML Document Object Model - XML Query Language.

LAB WORK: CREATING A WEBSITE WITH DYNAMIC FUNCTIONALITY USING CLIENT- SIDE AND SERVER SIDE SCRIPTING.

SUGGESTED READINGS:

1. Web Technology: Pradeep Kumar, HPH
2. Internet & World Wide Web How to Program: Deitel & Deitel, Pearson.
3. Web programming: Chris Bates.
4. HTML & XML An Introduction NIIT, PHI.
5. HTML for the WWW with XHTML & CSS: Wlizabeth Castro, Pearson
6. Internet and Web Technologies: Raj Kamal, McGraw Hill.
7. Web Technology: A Developer's Perspective: Gopalan & Sivaselvan, PHI.
8. The Complete Reference PHP: S. Holzner, McGraw Hill.
9. Internet Technology and Web Page Design: R.Singh&M.Sonia, Kalyani.
10. Web Programming using PHP and MySQL: A.Babu, K.Meena & Sivakumar. HPH.
11. Web Technology and Design by Xavier, New Age International Pub.

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B.COM – COMPUTER APPLICATI ONS
III-YEAR VI-SEMESTER PAPER-VII
Paper : (BCC 607) (a): E-COMMERCE

Paper: BCC607 (a) **Max Marks: 70+30**
PPW: 6 (4T + 2P) **Exam Duration: 3 Hrs**
Credits : 5

Objective: *to acquire conceptual and application knowledge of ecommerce.*

UNIT-I: INTRODUCTION:

E-Commerce: Meaning - Advantages & Limitations - E-Business: Traditional & Contemporary Model, Impact of E-Commerce on Business Models - Classification of E-Commerce: B2B - B2C - C2B - C2C - B2E - Applications of Ecommerce: E-Commerce Organization Applications – Emarketing - E-Advertising - E-Banking - Mobile Commerce - E-Trading - E-Learning - EShopping.

UNIT-II: FRAMEWORK OF E-COMMERCE:

Framework of E-Commerce: Application Services - Interface Layers - Secure Messaging - Middleware Services and Network Infrastructure - Site Security - Firewalls & Network Security - TCP/IP – HTTP - Secured HTTP – SMTP - SSL. Data Encryption: Cryptography – Encryption – Decryption - Public Key - Private Key – Digital Signatures - Digital Certificates.

UNIT-III: CONSUMER ORIENTED E-COMMERCE APPLICATIONS:

Introduction - Mercantile Process Model: Consumers Perspective and Merchant's Perspective - Electronic Payment Systems: Legal Issues & Digital Currency - E-Cash & E-Cheque – Electronic Fund Transfer (EFT) - Advantages and Risks - Digital Token-Based E-Payment System – Smart Cards.

UNIT-IV: ELECTRONIC DATA INTERCHANGE:

Introduction - EDI Standards - Types of EDI - EDI Applications in Business – Legal – Security and Privacy issues if EDI - EDI and E-Commerce - EDI Software Implementation.

UNIT-V: E-MARKETING TECHNIQUES:

Introduction - New Age of Information - Based Marketing - Influence on Marketing - Search Engines & Directory Services - Charting the On-Line Marketing Process - Chain Letters - Applications of 5P's (Product, Price, Place, Promotion, People) E-Advertisement - Virtual Reality & Consumer Experience - Role of Digital Marketing.

Lab work: *Using Microsoft Front Page Editor and HTML in Designing a Static Webpage/Website.*

SUGGESTED READINGS:

1. Frontiers of Electronic Commerce: Ravi Kalakota, Andrew B Whinston, Pearson
2. E-Commerce: Tulasi Ram Kandula, HPH.
3. E-Commerce: An Indian Perspective: P.T. Joseph, S.J, PHI
4. Electronic Commerce, Framework Technologies & Applications: Bharat Bhasker, McGraw Hill
5. Introduction To E-Commerce: Jeffrey F Rayport, Bernard J. Jaworski: Tata McGraw Hill
6. Electronic Commerce, A Managers' Guide: Ravi Kalakota, Andrew B Whinston
7. E-Commerce & Computerized Accounting: Rajinder Singh, Er. Kaisar Rasheed, Kalyani
8. E-Commerce & Mobile Commerce Technologies: Pandey, Saurabh Shukla, S. Chand
9. E-Business 2.0, Roadmap For Success: Ravi Kalakota, Marcia Robinson, Pearson
10. Electronic Commerce: Pete Loshin / John Vacca, Firewall Media
11. E-Commerce, Strategy, Technologies And Applications : David Whiteley, Tata Mcgraw Hill

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B.COM – COMPUTER APPLICATI ONS
III-YEAR VI-SEMESTER PAPER-VIII
Paper : (BCC 608) (a): MANAGEMENT INFORMATION SYSTEM

Paper: BCC 608 (a) **Max Marks: 70+30**
PPW: 6 (4T + 2P) **Exam Duration: 3hrs**
Credits : 5

Objective: *To equip the students with finer nuances of MIS.*

UNIT-I: AN OVERVIEW OF MANAGEMENT INFORMATION SYSTEMS (MIS): Concept & Definition of MIS - MIS Vs. Data Processing - MIS & Decision Support Systems - MIS & Information Resources Management - End User Computing – MIS Structure - Managerial View of IS – Functions of Management - Management Role - Levels of Management.

UNIT-II: FOUNDATION OF INFORMATION SYSTEMS:
Introduction to Information System in Business - Fundamentals of Information Systems - Solving Business Problems with Information Systems - Types of Information Systems, Effectiveness and Efficiency Criteria in Information System - Frame Work For IS - Sequence of Development of IS.

UNIT-III: CONCEPT OF PLANNING & CONTROL:
Concept of Organizational Planning - Planning Process - Computational Support for Planning - Characteristics of Control Process - Nature of Control in an Organization. IS Planning – Determination of Information Requirements - Business Systems Planning – End Means Analysis - Organizing the Plan.

UNIT-IV: BUSINESS APPLICATIONS OF INFORMATION TECHNOLOGY:
Internet & Electronic Commerce – Intranet - Extranet & Enterprise Solutions – Information System for Business Operations - Information System for Managerial Decision Support - Information System for Strategic Advantage.

UNIT-V: ADVANCED CONCEPTS IN INFORMATION SYSTEMS:
Enterprise Resource Planning - Supply Chain Management - Customer Relationship Management and Procurement Management - Systems Analysis and Design – System Development Life Cycle – Prototyping – Sad - Project Management - Cost Benefit Analysis - Detailed Design - Implementation.

SUGGESTED READINGS:

1. Management Information System: CVS. Murthy, HPH.
2. Management Information System: O Brian, TMH.
3. Management Information System: Gordon B.Davis & Margrethe H.Olson, TMH.
4. Information System for Modern Management: Murdick, PHI.
5. Management Information System: Jawadekar, TMH.

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EXAMINATIONS PATTERN

For I, II, III, IV, V & VI Semesters

Semester End exam	**70 Marks**
Internal Exam	**30 Marks**
Total	**100 Marks**

Semester Question Paper Pattern

Part-A **Short Questions** **(5X4=20)**

Five Questions out of eight (Overall Choice)

Part-B **Long Questions** **(5X10=50)**

Five Questions (Internal Choice)

Two Questions from each unit should be given

Internal Paper Pattern

Written Exam	20 Marks
Assignment	5 Marks
Seminar	5 Marks
Total	**30 Marks**

Practical Question Paper Pattern

Practical Exam and Execution	10 Marks
Record	5 Marks
Viva-voice	5 Marks
Total	**20 Marks**

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MODEL QUESTION PAPER PATTERN

DEPARTMENT OF COMPUTER APPLICATIONS

B. Com (Computer Applications) I/II/III Year Semester Examinations
Computer Subjects
(With effect from 2016-17)

Time:2.30 Hrs **Marks: 70**
M

Part-A

I. Answer the Following Questions.(Short answer Questions)

5X4M=20M

1.
2.
3.
4.
5.
6.
7.
8.

Part-B

II. Answer the following Questions.(Essay Questions) 5X10M=50M

9. A)
   Or
   B)
10. A)
   Or
   B)
11. A)
   Or
   B)
12. A)
   Or
   B)
13. A)
   Or
   B)

--*

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Department of Computer Application

Panel of Examiners of Paper setting and Evaluation

S No	Subject	Name and Address of the College	Mobile No	Remarks
		I Year		
01	Information Technology(IT)	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
02	Relationa Database Management System (RDBMS)	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
		II Year		
03	Programming With C	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	

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04	OOP with C++	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
		III Year		
05	Excel Foundation	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
6	Web Technology	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
7	E- Commerce	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	

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		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
08	Management Information System (MIS)	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associate Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	

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DEPARTMENT OF COMPUTER APPLICATIONS

B.A (COMPUTER APPLICATIONS)

2018-19

NAGARJUNA GOVERNMENT COLLEGE: NALGONDA

(Autonomous)

DEPARTMENT OF COMPUTER APPLICATIONS

B.A-COMPUTER APPLICATIONS

BOARD OF STUDIES

2018-19

Board of Studies in the Department of B.A – Computer Applications has been constituted with the following members for the year 2018-19.

S. No	Name	Designation
1	Dr. D Narayana Rao In-charge Department of Computer Application Nagarjuna Government College Nalgonda	Chair Person Chair Person Board of Studies Dept. of Computer Applications N.G. College, Nalgonda.
2	Dr. R. Rekha Asst. Professor MG University Nalgonda	University Nominee 05/09/2018 HOD MCA/MGU/NLG.
3	Sri. Y V Rama Rao Asst. Prof. Computer Applications GDC Hayathnagar, Hyderabad	Subject Expert 5/9/2018 Lecturer in ..... Government Degree College Hayathnagar, R.R. Dist.
4	Dr. G. Rajitha Devi Asst. Prof. Computer Science GDC Hayathnagar, Hyderabad.	Subject Expert 5/9/2018 Lecturer in ..... Government Degree College Hayathnagar, R.R. Dist.
5	Sri. K Shivaraju Lecturer in Computer Applications Nagarjuna Govt. College, Nalgonda	Member

NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

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DEPARTMENT OF COMPUTER APPLICATION

B.A-COMPUTER APPLICATIONS

BOARD OF STUDIES MEETING

The members of Board of Studies in Computer Application department, Nagarjuna Govt. College, Nalgonda met under the chairmanship of Dr. D Narayana Rao on 05/09/2018 at Department of Computer Application, Nagarjuna Govt. College, and passed the following resolutions

AGENDA

1. To consider and approve the Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) system for B.A - I, II & III Year students (I,II,III,IV,V & VI Semesters) for the academic year 2018-19.
2. To consider and approve the syllabus of B.A (Computer Applications) of I/II/III Years for I to VI semesters during the academic year 2018-19.
3. To consider and approve the modules (Units) and setting of Question papers as 70:30 for Theory External and Internal assignments for B.A - I, II & III Year (I,II,III,IV,V & VI Semesters) for the academic year 2018-19.
4. To consider and approve the Syllabus of practical examinations at the end of I,II,III,IV,V &VI semesters for B.A - I , II, III year students.
5. To consider and approve the Model question papers for B.A - I, II & III year (I,II,III,IV,V & VI Semesters) for the academic year 2018-19.
6. To consider and approve the list Examiners for Paper setting and evaluation for the academic year 2018-19.
7. Any other related academic matters.

RESOLUTIONS

1. The Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) System can be implemented for the B.A - I, II & III Year (I,II,III,IV,V & VI Semesters) students for the academic year 2018-19.

2. The modules and allotted Credits is approved for B.A - I, II & III year (I,II,III,IV,V & VI semesters) students for the academic year 2018-19.

3. Unitization of syllabus into 4 units for each paper (module)

4. The evaluation of the students for each semester of I, II, III, IV, V & VI Consists 100 marks in the ratio of 70:30 External End Theory exam – 70 marks and internal exam consist 30 marks.

5. Approved the syllabus for I, II, III, V, VII & VIII papers and Model question papers.

6. Approved to conduct the Practical examinations at the end of I, II III, IV, V &VI Semesters. Each paper consist 50 marks. The syllabus is approved and followed the practical question bank (as per University Question bank).

7. Approved the Syllabus the General Elective in V & VI Semester.
   a) Information Technologies-1 b) Information Technologies-2

8. Approval the Panel of examiners for paper setting and evaluation for the academic year 2018-19.

9. Approved the proposal of preparation of scheme of valuation and key by Question paper setter.

SIGNATURES OF THE MEMBERS.

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DEPARTMENT OF COMPUTER APPLICATIONS

B.A – COMPUTER APPLICATION

SUBJECT WISE CBCS CREDITS LIST

Sno	YEAR/ Semester	Module (Paper)	Hours (HPW)	Max. Marks	Credits
	I-YEAR				
1	I-YEAR / I-SEM Core-1	Programming in C	4T+2P Hrs	100 M + 50 M	4+1=5
2	I-YEAR / II-SEM Core-2	Programming in C++	4T+2P Hrs	100 M + 50 M	4+1=5
	II-YEAR				
3	SEC-1	SEC-1	2T		2
	II-YEAR / III-SEM Core-3	Relational Database Management System	3T+2P Hr	100 M + 50 M	4+1=5
4	SEC-2	SEC-2	2T		2
	II-YEAR/IV-SEM Core-4	Computer Networks	3T+2P Hr	100 M + 50 M	4+1=5
	III-YEAR				
5	GE-1	Information Technologies-1	2T		2
	SEC-3	SEC-3			2
	III-YEAR/V-SEM Core-5 & 6	Multimedia Systems	3T+2P Hrs	100 M + 50 M	3+1=4
		Web Technologies / Visual Programming	3T+2P Hrs	100 M + 50 M	3+1=4
6	GE-2	Information Technologies-2	2T		2
	SEC-4	SEC-4			2
	III-YEAR/VI-SEM Core-7 & 8	Mobile Applications	3T+2P Hrs	100 M + 50 M	3+1=4
		PHP Programming/ Information Security and Cyber Laws	3T+2P Hrs	100 M + 50 M	3+1=4
	TOTAL CREDITS		**50**		**48**

BOS 2018-19

DEPARTMENT OF COMPUTER APPLICATIONS
B.A – COMPUTER APPLICATIONS

SYLLABUS

DEPARTMENT OF COMPUTER APPLICATION, N.G.C.

Structure of B.A (Computer Application) (CBCS) for Nagarjuna Govt. College (A), Nalgonda (w.e.f. Academic Year 2016-17)

Code	Course Title	Course Type	HpW	Credits
	SEMESTER – I			
BS106	Programming in C	DSC–3A	4T+2P=6	4 + 1 =5
	SEMESTER – II			
BS206	Programming in C++	DSC–3B	4T+2P=6	4 + 1 =5
	SEMESTER – III			
BS301	SEC	SEC–1	2T	2
BS306	Relational Database Management Systems	DSC–3C	4T+2P=6	4 + 1 =5
	SEMESTER – IV			
BS401	SEC	SEC–2	2T	2
BS406	Computer Networks	DSC–3D	4T+2P=6	4 + 1 =5
	SEMESTER – V			
BS501	Information Technologies –1	GE–1	2	2
BS502	SEC	SEC–3	2	2
BS505	Multimedia Systems	DSC–3E	3T+2P=5	3 + 1 =4
BS506	Elective–A: Web Technologies	DSE–1E	3T+2P=5	3 + 1 =4
	Elective–B: Visual Programming	DSE–2E		
	SEMESTER – VI			
BS601	Information Technologies –2	GE–2	2T	2
BS602	SEC	SEC–4	2T	2
BS605	Mobile Applications	DSC–3F	3T+2P=5	3 + 1 =4
BS606	Elective–A: PHP Programming	DSE–1F	3T+2P=5	3 + 1 =4
	Elective–B: Information Security and Cyber Laws	DSE–2F		
		Total Number of Credits		**48**

Syllabus for Computer Applications

B.A Programme under Choice Based Credit System

B.A (Computers)

I-Year / Semester – I, PAPER-I

DSC–3A

Programming in C

106

Theory: 4 credits and Practical: 1 credit
Theory: 4 Hours/Week and Practical: 2 Hours/Week

Unit – I

Computer Fundamentals: Introduction of Computers, Classification of Computers, Anatomy of a Computer, Memory Hierarchy, Introduction to OS, Operational Overview of a CPU.

Program fundamentals: Generation and Classification of Programming Languages, Compiling, Interpreting, Loading, Linking of a Program, Developing Program, Software Development.

Algorithms: Definitions, Different Ways of Stating Algorithms (Step-form, Pseudo-code, Flowchart), Strategy for Designing Algorithms, Structured Programming Concept.

Basics of C: Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation–precedence and associativity, Type Conversions.

Unit – II

Input-Output: Non-formatted and Formatted Input and Output Functions, Escape Sequences,

Control Statements: Selection Statements – if, if-else, nested if, nested if-else, comma operator, conditional operator, switch; Iterative Statements – while, for, do-while; Special Control Statement – goto, break, continue, return, exit.

Arrays and Strings: One and Two Dimensional Arrays, Character Arrays, Functions from ctype.h, string.h.

Unit – III

Functions: Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to Functions, Score of Variables, Storage Classes, Inline Functions, and Recursion.

Pointers: Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Dynamic Memory Allocation.

Unit – IV

User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union), Structures Vs Unions, Enumeration Types.

Files: Introduction, Using Files, Working with Text Files and Binary Files, Other File Management Functions.

Text Pradip Dey, Manas Ghosh, *Computer Fundamentals and Programming in C* (2e)

References

1. Ivor Horton, *Beginning C*
2. Herbert Schildt, *The Complete Reference C*
3. Paul Deitel, Harvey Deitel, *C How To Program*
4. Byron S. Gottfried, *Theory and Problems of Programming with C*
5. Brian W. Kernighan, Dennis M. Ritchie, *The C Programming Language*
6. B. A. Forouzan, R. F. Gilberg, *A Structured Programming Approach Using C*

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C Lab

Practical: 2 Hours/Week Credit: 1 :-

1.Write a program to find the largest two numbers using if and conditional operator.

2.Write a program to calculate arithmetic operations of two numbers using switch.

3.Write a program to print the reverse of a given number.

4.Write a program to print whether the given number is a prime or not.

5.Write a program to find largest and smallest elements in a given list of numbers.

6.Write a program to find the sum of two matrices.

7.Write a program to find the product of two matrices.

8.Write a program to print the reverse of a given string.

9.Write a program to find the factorial of a positive integer using iteration and recursion.

10.Write a program to find the GCD of two positive integers using iteration and recursion.

11.Write a program to demonstrate the call by value and the call by reference concepts.

12.Write a program to illustrate the use of Enumeration data type.

13.Write a program to illustrate the use of structure concept.

14.Write a program to illustrate the use of union concept.

15.Write a program to write content into a file and display contents of a file

16.Write a program to copy content of one file into another file and display the content of new file.

Note:
1.Write the Pseudo code and draw Flow Chart for the above programs.

2.Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows 10.

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Syllabus for Computer Applications

B.A Programme under Choice Based Credit System

B.A (Computers)

I-Year / Semester – II, PAPER-II

DSC–3B

Programming in C++

206

Theory: 4 credits and Practical: 1 credit
Theory: 4 Hours/Week and Practical: 2 Hours/Week

Unit – I

Introduction to C++: Applications, Example Programs, Tokens, Data Types, Variables, Operators, Expressions, Control Structures, Arrays, Strings, Pointers.

Functions: Introduction, Prototype, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters, Inline Functions, Default Arguments, Overloading Functions, Passing Arrays to Functions.

Unit – II

Object Oriented Programming: Procedural Programming Vs Object-Oriented Programming, Terminology, Benefits, Languages, and Applications.

Classes: Introduction, Defining an Instance of a Class, Why Have Private Members? Separating Class Specification from Implementation, Inline Member Functions, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors, Private Member Functions, Instance and Static Members, Friends of Classes, Member-wise Assignment, Copy Constructors, Operator Overloading.

Unit – III

Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification, Constructors and Destructors in Base and Derived Classes, Redefining Base Class Functions, Polymorphism and Virtual Member Functions, Abstract Base Classes and Pure Virtual Functions, Multiple Inheritance. C++ Streams: Stream Classes, Unformatted I/O Operations, Formatted I/O Operations.

Unit – IV

Exceptions: Introduction, Throwing an Exception, Handling an Exception, Object-Oriented Exception Handling with Classes, Multiple Exceptions, Extracting Data from the Exception Class, Re-throwing an Exception. Templates: Function Templates–Introduction, Function Templates with Multiple Type, Overloading with Function Templates, Class Templates – Introduction, Defining Objects of the Class Template, Class Templates and Inheritance.

Text Tony Gaddis, *Starting out with C++: from control structures through objects* (7e)

References

1. B. Lippman, *C++ Primer*
2. Bruce Eckel, *Thinking in C++*
3. K.R. Venugopal, *Mastering C++*
4. Herbert Schildt, *C++: The Complete Reference*
5. Bjarne Stroustrup, *The C++ Programming Language*
6. Sourav Sahay, *Object Oriented Programming with C++*

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C++ Lab

Practical: 2 Hours/Week Credit: 1

1.Write a program to print the sum of digits of a given number

2.Write a program to check whether the given number is Armstrong or not

3.Write a program to check whether the given string is Palindrome or not

4.Write a program to read the student name, roll no, marks and display the same using class and object.

5.Write a program to find area of a rectangle, circle, and square using class and object.

6.Write a program to implement inline function inside and outside of a class for

a.Finding the area of a square

b.Finding the area of a cube

7.Write a program to implement friend function and friend class

8.Write a program to implement constructor and destructor with in a class.

9.Write a program to demonstrate hierarchical inheritance.

10.Write a program to demonstrate multiple inheritances.

11.Write a program to demonstrate the constructor overloading.

12.Write a program to demonstrate static polymorphism.

13.Write a program to demonstrate dynamic polymorphism.

14.Write a program to implement polymorphism using pure virtual functions.

15.Write a program to demonstrate the function templates and class templates.

16.Write a program to demonstrate exception handling using try, catch, and finally.

Note: Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows 10.

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

II-Year / Semester – III, Paper-III

DSC–3C **Relational Database Management Systems** BS306

Theory	4 Hours/Week	4 credits
Practical	2 Hours/Week	1 credit

Unit – I

Introduction to Databases: Introduction, Traditional File-Based Systems, Database Approach, Roles in the Database Environment, Advantages and Disadvantages of DBMSs, The Three-Level ANSI-SPARC Architecture, Database Languages, Data Models, Functions of a DBMS, Components of a DBMS. Relational Model: Introduction, Terminology, Integrity Constraints, Views.

Unit – II

SQL: Introduction, Data Manipulation–Simple Queries, Sorting Results, Using the SQL Aggregate Functions, Grouping Results, Sub-queries, ANY and ALL, Multi-table Queries, EXISTS and NOT EXIST, Combining Result Tables, Database Updates.

SQL: The ISO SQL Data Types, Integrity Enhancement Feature–Domain Constraints, Entity Integrity, Referential Integrity, General Constraints, Data Definition–Creating a Database, Creating a Table, Changing a Table Definition, Removing a Table, Creating an Index, Removing an Index, Views–Creating a View, Removing a View, View Resolution, Restrictions on Views, View Updatability, WITH CHECK OPTION, Advantages and Disadvantages of Views, View Materialization, Transactions.

Unit – III

Advanced SQL: The SQL Programming Language–Declarations, Assignments, Control Statements, Exceptions,
Cursors, Subprograms, Stored Procedures, Functions, and Packages, Triggers, Recursion.
Entity–Relationship Modeling: Entity Types, Relationship Types, Attributes, Keys, Strong and Weak Entity Types, Attributes on Relationships, Structural Constraints, Problems with ER Models–Fan Traps, Chasm Traps.
Enhanced Entity–Relationship Modeling: Specialization/Generalization, Aggregation, Composition.

Unit – IV

Functional–Dependencies: Anomalies, Partial Functional Dependency, Transitive Functional Dependency. Normalization: The Purpose of Normalization, How Normalization Supports Database Design, Data Redundancy and Update Anomalies, Functional Dependencies in brief, The Process of Normalization,1NF, 2NF, 3NF, BCNF. The Database Design Methodology for Relational Databases (Appendix–D).

Transaction Management: Transaction Support–Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods.

Text
Reference

Thomas M. Connolly, Carolyn E. Begg, *Database Systems–A Practical Approach to Design, Implementation, and Management (6e)*
Sharon Allen, Evan Terry, *Beginning Relational Data Modeling*

Jeffrey A. Hoffer, V. Ramesh, Heikki Topi, *Modern Database Management* Raghu Ramakrishnan, Johannes Gehrke, *Database Management Systems* Ramez Elmasri, Shamkant B. Navathe, *Fundamentals of Database Systems* Abraham Silberschatz, Henry F. Korth, S. Sudarshan, *Database System Concepts*

Carlos Coronel, Steven Morris, Peter Rob, *Database Systems: Design, Implementation, and Management*

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Relational Database Management Systems Lab BS306

Practical 2 Hours/Week 1 credit

Consider the relational schema for part of the DreamHome case study is:

Branch (branchNo, street, city, postcode)
Staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)
PropertyForRent (propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)
Client (clientNo, fName, lName, telNo, prefType, maxRent, eMail)
PrivateOwner (ownerNo, fName, lName, address, telNo, eMail, password)
Viewing (clientNo, propertyNo, viewDate, comment)
Registration (clientNo, branchNo, staffNo, dateJoined)

1. Create a database with name "DreamHome" and now create all the tables listed above with constraints.
2. Insert a new row into the table supplying data for all columns.
3. Modify data in the database using UPDATE
4. Delete data from the database using DELETE
5. Changing a table definition using ALTER
6. Removing a table using DROP
7. Removing rows in table using TRUNCATE
8. Create an index and removing an index
9. Practice other standard SQL commands for creating, modifying, displaying data of tables.
10. List full details of all staff.
11. List all staff with a salary greater than £10000.
12. List the property numbers of all properties that have been viewed.
13. Produce a list of salaries for all staff, showing only the staffNo, fName, lName, and salary details.
14. List all cities where there is either a branch office or a property for rent.
15. List all cities where there is a branch office but no properties for rent.
16. List all cities where there is both a branch office and at least one property for rent.
17. List the names and comments of all clients who have viewed a property for rent.
18. Produce a status report on property viewings.
19. List complete details of all staff who work at the branch in Glasgow.
20. List the addresses of all branch offices in London or Glasgow
21. List all staff with a salary between £20,000 and £30,000.
22. Identify all clients who have viewed all properties with three rooms.
23. How many properties cost more than £350 per month to rent?
24. How many different properties were viewed in May 2013?
25. Find the total number of Managers and the sum of their salaries.
26. Find the minimum, maximum, and average staff salary.
27. Find the number of staff working in each branch and the sum of their salaries.
28. List all managers and supervisors.
29. Find all owners with the string 'Glasgow' in their address.
30. List the details of all viewings on property PG4 where a comment has not been supplied.
31. Produce a list of salaries for all staff, arranged in descending order of salary.
32. Produce an abbreviated list of properties arranged in order of property type.
33. Find the number of staff working in each branch and the sum of their salaries.
34. For each branch office with more than one member of staff, find the number of staff working in each branch and the sum of their salaries.
35. List the staff who work in the branch at '163 Main St'.
36. List all staff whose salary is greater than the average salary, and show by how

37. List the properties that are handled by staff who work in the branch at '163 Main St'.
38. Find all staff whose salary is larger than the salary of at least one member of staff at branch B003.
39. Find all staff whose salary is larger than the salary of every member of staff at branch B003
40. List the names of all clients who have viewed a property, along with any comments supplied.
41. For each branch office, list the staff numbers and names of staff who manage properties and the properties that they manage.
42. For each branch, list the staff numbers and names of staff who manage properties, including the city in which the branch is located and the properties that the staff manage.

    Find the number of properties handled by each staff member, along with the branch number of the member of staff.
44. List all branch offices and any properties that are in the same city.
45. List all properties and any branch offices that are in the same city.
46. List the branch offices and properties that are in the same city along with any unmatched branches or properties.
47. Find all staff who work in a London branch office.
48. Construct a list of all cities where there is either a branch office or a property.
49. Construct a list of all cities where there is both a branch office and a property.
50. Create a view so that the manager at branch B003 can see the details only for staff who work in his or her branch office.
51. Create a view of the staff details at branch B003 that excludes salary information, so that only managers can access the salary details for staff who work at their branch.
52. Create a view of staff who manage properties for rent, which includes the branch number they work at, their staff number, and the number of properties they manage.
53. Removing a view using DROP VIEW
54. Give the user with authorization identifier Manager all privileges on the Staff table.
55. Give users Personnel and Director the privileges SELECT and UPDATE on column salary of the Staff table.
56. Revoke the privilege SELECT on the Branch table from all users.
57. Revoke all privileges you have given to Director on the Staff table.
58. Demonstrate exceptions in PL/SQL
59. Demonstrate cursors in PL/SQL
60. Write PL/SQL queries to create procedures.
61. Write PL/SQL queries to create functions.
62. Write PL/SQL queries to create package.
63. Write PL/SQL queries to create triggers.
64. Write PL/SQL queries using recursion.

Consider the relational schema for part of the Hotel case study is:

Hotel (hotelNo, hotelName, city)
Room (roomNo, hotelNo, type, price)
Booking (hotelNo, guestNo, dateFrom, dateTo, roomNo)
Guest (guestNo, guestName, guestAddress)

65. Create a database with name "Hotel" and now create all the tables listed above with constraints.
66. Insert a new row into the table supplying data for all columns.
67. Modify data in the database using UPDATE
68. Delete data from the database using DELETE
69. Changing a table definition using ALTER
70. Removing a table using DROP
71. Removing rows in table using TRUNCATE
72. Practice other standard SQL commands for creating, modifying, displaying data of tables.
73. List full details of all hotels.
74. List full details of all hotels in London.
75. List the names and addresses of all guests living in London, alphabetically ordered by

76. List all double or family rooms with a price below £40.00 per night, in ascending order of price.
77. List the bookings for which no dateTo has been specified.
78. How many hotels are there?
79. What is the average price of a room?
80. What is the total revenue per night from all double rooms?
81. How many different guests have made bookings for August?
82. List the price and type of all rooms at the Grosvenor Hotel.
83. List all guests currently staying at the Grosvenor Hotel.
84. List the details of all rooms at the Grosvenor Hotel, including the name of the guest staying in the room, if the room is occupied.
85. What is the total income from bookings for the Grosvenor Hotel today?
86. List the rooms that are currently unoccupied at the Grosvenor Hotel.
87. What is the lost income from unoccupied rooms at the Grosvenor Hotel?
88. List the number of rooms in each hotel.
89. List the number of rooms in each hotel in London.
90. What is the average number of bookings for each hotel in August?
91. What is the most commonly booked room type for each hotel in London?
92. What is the lost income from unoccupied rooms at each hotel today?
93. Insert rows into each of these tables.
94. Update the price of all rooms by 5%.
95. Investigate the SQL dialect on any DBMS that you are currently using. Determine the system's compliance with the DML statements of the ISO standard. Investigate the functionality of any extensions that the DBMS supports. Are there any functions not supported?
96. Demonstrate that queries written using the UNION operator can be rewritten using the OR operator to produce the same result.
97. Apply the syntax for inserting data into a table.
98. Create a view containing the cheapest hotels in the world.
99. Create the Hotel table using the integrity enhancement features of SQL.
100. Create a database trigger for the following situations:

The price of all double rooms must be greater than £100.

The price of double rooms must be greater than the price of the highest single room.

A booking cannot be for a hotel room that is already booked for any of the specified dates.

A guest cannot make two bookings with overlapping dates.

Maintain an audit table with the names and addresses of all guests who make bookings for hotels in London (do not store duplicate guest details).

Note:

Recommended to use open source database software like MySQl, MongoDB, PostgreSQL, etc... In practical examination, students have to

Create database

Create tables with their integrity constraints.

Insert the data into tables and then execute the queries.

Answer any six queries from ten queries given by the examiner.

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

II-Year / Semester – IV , Paper-IV

DSC–3D

Computer Networks

BS406

Theory	3 Hours/Week	3 credits
Practical	2 Hours/Week	1 credit

Unit – I

Introduction: Computer-System Architecture, Computing Environments. Operating-System Structures: Operating-System Services, User Interface for Operating-System, System Calls, Types of System Calls, Operating System Structure.

Process Concept, CPU Scheduling Concepts, Scheduling Criteria, Overview of Main Memory, Virtual Memory, Mass-Storage Structure, File Systems and File System Implementation.

Unit – II

Introduction: Data Communication Components, Line Configuration, Topologies, Transmission Mode, Categories of Networks, ISO Reference Model–Layered Architecture, TCP/IP Reference Model.

Transmission Media: Guided Media–Twisted Pair Cable, Coaxial Cable, Optical Fiber, Unguided Media– Satellite Communication, and Cellular Telephony.

Unit – III

Data Link Layer: Error Detection–VRC, LRC, CRC, Checksum, Error Correction–Hamming Code, Burst Error Correction, Line Discipline–ENQ/ACK, Poll/Select, Flow Control–Stop-and-Wait, Sliding Window, Error Control–Stop-and-Wait ARQ, Sliding Window ARQ Go-Back-n ARQ, Selective-Reject ARQ.

Local Area Networks: Introduction to IEEE 802, Ethernet-CSMA/CD, Implementation, Token Ring,-Token Passing, Implementation. Overview of Multiplexing and Switching.

Unit – IV

Networking and Internetworking Devices: Repeaters, Bridges, Routers, Gateways. Brouters, Switches,

Distance Vector Routing Algorithm. Transport Layer: Duties of Transport Layer, Connection.

Upper OSI Layers; Session Layer, Presentation Layer, Application Layer.

Text

Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, *Operating System Concepts (9e)*

Behrouz A. Forouzan, *Data Communication and Networking (2e Update)*

References

Andrew S. Tanenbaum, *Modern Operating Systems*

Dhananjay M. Dhandhere, *Operating Systems – A Concept Based Approach*

S.S. Shinde, *Computer Networks*

William Stallings, *Data and Computer Communications*

Andrew S. Tanenbaum, David J Wetherall, *Computer Networks*

Behrouz A Forouzan, Firouz Mosharraf, *Computer Networks A Top-Down Approach*

James F. Kurose, Keith W. Ross, *Computer Networking: A Top-Down Approach Featuring the Internet*

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Computer Networks Lab

BS406

Practical 2 Hours/Week 1 credit

1. Use vi editor to create different files, writing data into files, modifying data in files.
2. Use different types of Unix commands on the files created in first program.
3. Write shell programs using 'case', 'then' and 'if' & 'else' statements.
4. Write shell programs using while, do-while and for loop statements.
5. Write a shell script that accepts two integers as its arguments and computers the value of first number raised to the power of the second number.
6. Write a shell script that takes a command–line argument and reports on whether it is directory, a file, or something else.
7. Write a shell script that accepts a file name, starting and ending line numbers as arguments and displays all the lines between the given line numbers.
8. Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions.
9. Write a program to create a socket and implement connect function.
10. Write a program to display hello world using signals.
11. Write a program to implement the sliding window protocol.
12. Write a program to implement listener and talker.
13. Write a program to implement TCP echo using client–server program
14. Write a program to implement UDP echo using client–server program.
15. Write a TCP client–server program to convert a given string into reverse.
16. Write a UDP client–server program to convert a given string into reverse.

Note: Recommended to use Open Source Software like Fedora, Ubuntu, CentOS, etc... Write above program using C language on Unix/Linux Systems.

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Syllabus for Computer Applications

B.A Programme under Choice Based Credit System

B.A (Computers)

III-Year / Semester – V , GE-1

GE–1 Information Technologies – 1 BS501

Theory 2 Hours/Week 2 credits

Unit – I

Introduction to Computers: What is a Computer? Characteristics of Computers, Generations of Computers, Classification of Computers, Basic Computer Organization, Applications of Computers.

Input and Output Devices: Input Devices, Output Devices, Soft Copy Devices, Hard Copy Devices.

Computer Memory and Processors: introduction, Memory Hierarchy, Processor Registers, Cache Memory, Primary Memory, Secondary Storage Devices, Hard Disks, Optical Drives, USB Flash Drives, Memory Cards.

Unit – II

Computer Software: Introduction, Classification of Computer Software, System Software, Applications Software, Firmware, Middleware, Acquiring Computer Software.

Operating Systems: Introduction, Evolution of OS, Process Management, Memory Management, File Management, Device Management, Security Management, Command Interpreter, Windows, Linux.

Text References

Reema Thareja, *Fundamentals of Computers*

P. K. sinha, *Computer Fundamentals*

Anita Goel, *Computer Fundamentals*

V. Rajaraman, *Fundamentals of Computers*

E. Balagurusamy, *Fundamentals of Computers*

J. Glenn Brookshear, Dennis Brylow, *Computer Science An Overview*

Note: Student friendly video lecturers pertaining to this course are available at http://spoken-tutorial.org/

Teachers are advised to teach this courses in the computer lab itself, so that the interested students may derive some time to perform few programs their own.

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

III-Year / Semester – V , Paper-V

DSC–3E

Multimedia Systems

BS505

Theory	3 Hours/Week	3 credits
Practical	2 Hours/Week	1 credit

Unit – I

Multimedia: Introduction, Definitions, Where to Use Multimedia- Multimedia in Business, Schools, Home, Public Places, Virtual Reality; Delivering Multimedia.

Text: Meaning, Fonts and Faces, Using Text in Multimedia, Computers and Text, Font Editing and Design Tools, Hypermedia and Hypertext.

Images: Before You Start to Create, Making Still Images, Color.

Unit – II

Sound: The Power of Sound, Digital Audio, MIDI Audio, MIDI vs. Digital Audio, Multimedia System Sounds, Audio File Formats. Adding Sound to Your Multimedia Project.

Animation: The Power of Motion, Principles of Animation, Animation by Computer, Making Animations. Video: Using Video, How Video Works and Is Displayed, Digital Video Containers, Obtaining Video Clips, Shooting and Editing Video.

Unit – III

Making Multimedia: The Stages of a Multimedia Project, the Intangibles, Hardware, Software, Authoring Systems.

The Internet and Multimedia: Internet History, Internetworking, Multimedia on the Web.

Designing for the World Wide Web: Developing for the Web, Text for the Web, Images for the Web, Sound for the Web, Animation for the Web, Video for the Web.

Text References

Tay Vaughan, *Multimedia: Making it work (8e)*

Keyes, *Multimedia Handbook*

K. Andleigh, K. Thakkar, *Multimedia System Design*

Ralf Steinmetz, Klara Naharstedt, *Multimedia: Computing, Communications Applications* Student friendly video lecturers pertaining to this course are available at http://spoken-tutorial.org/

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Multimedia Systems Lab

BS505

Practical 2 Hours/Week 1 credit

Implement the followings using Blender -

1. Create an animation using the tools panel and the properties panel to draw the following – Line, oval, circle, pencil, brush, lasso tool etc...
2. Create an animation using the tools panel and the properties panel to draw the following – rectangle, square, triangle, diamond, octagon etc...
3. Create an animation using text tool to set the font, size, color etc.
4. Create an animation using free transform tool that should use followings-Move Objects, Skew Objects, Stretch Objects, Rotate Objects,
   Stretch Objects while main taining proportion, Rotate Objects after relocating the center dot
5. Create an animation using layers having following features-Insert layer, Delete layer, Guide layer, Mask layer.
6. Modify the document (changing background color etc.)using the following tools Eraser tool, Hand tool, Ink bottle tool, Zoom tool, Paint Bucket tool, Eyedropper tool
7. Create an animation for bus car race in which both starts from the same point and car wins the race.
8. Create an animation for bus car race in which both starts from the same point and bus wins the race.
9. Create an animation in which text Hello gets converted into GoodBye (using motion/shape tweening).
10. Create an animation in which text gets converted into digits (like hello is 85121215).
11. Create an animation having five images having fade-in fade-out effect.
12. Create an scene to show the sunrise (using multiple layers and motion tweening)
13. Create an scene to show the sunset (using multiple layers and motion tweening)
14. Create an animation to show the ripple effect.
15. Create an animation (using Shape tweening and shape hints) for transforming one shape into another.
16. Create an animation for bouncing ball (you may use motion guide layer).

Practical exercises based on concepts listed in theory using Presentation tools in office automation Note: tool/ GIMP/Blender / Audacity/ Animation Tools/ Image Editors/ Video Editors.

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

III-Year / Semester – V , Paper-VI (Elective-1)

DSE–1E

Web Technologies

BS506

Theory	3 Hours/Week	3 credits
Practical	2 Hours/Week	1 credit

Unit – I

Structuring Documents for the Web: Introducing HTML and XHTML, Basic Text Formatting, Presentational Elements, Phrase Elements, Lists, Editing Text, Core Elements and Attributes, Attribute Groups Links and Navigation: Basic Links, Creating Links with the <a> Element, Advanced E- mail Links.

Images, Audio, and Video: Adding Images Using the <img> Element, Using Images as Links Image Maps, Choosing the Right Image Format, Adding Flash, Video and Audio to your web pages. Tables: Introducing Tables, Grouping Section of a Table, Nested Tables, Accessing Tables

Forms: Introducing Forms, Form Controls, Sending Form Data to the Server

Frames: Introducing Frameset, <frame> Element, Creating Links Between Frames, Setting a Default Target Frame Using <base> Element, Nested Framesets, Inline or Floating Frames with <iframe>.

Unit – II

Cascading Style Sheets: Introducing CSS, Where you can Add CSS Rules.

CSS Properties: Controlling Text, Text Formatting, Text Pseudo Classes, Selectors, Lengths, Introducing the Box Model.

More Cascading Style Sheets: Links, Lists, Tables, Outlines, The :focus and :activate Pseudo classes Generated Content, Miscellaneous Properties, Additional Rules, Positioning and Layout with CSS

Page Layout: Understating the Site's Audien ce, Page Size, Designing Pages, Coding your Design, Developing for Mobile Devices.

Design Issues: Typography, Navigation, Tables, Forms.

Unit – III

Learning JavaScript: How to Add Script to Your Pages, the Document Object Model, Variables, Operators, Functions, Control Statements, Looping, Events, Built- In Objects,

Working with JavaScript: Practical Tips for Writing Scripts, Form Validation, Form Enhancements, JavaScript Libraries.

Putting Your site on the web: Meta tags, Testing your site, Talking the Leap to Live, Telling the World about your site, Understanding your visitors.

Text References

Jon Duckett, *Beginning HTML, XTML, CSS and JavaScript*
Chris Bates, *Web Programming*
M. Srinivasan, *Web Technology: Theory and Practice*
Achyut S. Godbole, Atul Kahate, *Web Technologies*
Kogent Learning Solutions Inc, *Web Technologies Black Book*
Ralph Moseley and M. T. Savaliya, *Developing Web Applications*
P.J. Deitel & H.M. Deitel, *Internet and World Wide Web How to program*

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Web Technologies Lab

BS506

Practical 2 Hours/Week 1 credit

1 a. Write a HTML program using basic text formatting tags, <hn>, <p>,
, <pre>. b. Write a HTML page for Example Cafe using above text formatting tags.

a. Write a HTML program using presentational element tags <b>, <i>, <strike>, <sup>, <sub>, <big>, <small>, <hr>

2 b. Write a HTML program using phrase element tags <blockquote>, <cite>, <abbr>, <acronym>, <kbd>, <address>

3 a. Write a HTML program using different list types.

b. Write a HTML page that displays ingredients and instructions to prepare a recipe.

a. Write a HTML program using grouping elements and .

4 b. Write a HTML Menu page for Example cafe site.

5 a. Write a HTML program using images, audios, videos.

b. Write a HTML program to create your time table.

6 Write a HTML program to create a form using text inputs, password inputs, multiple line text input, buttons, check boxes, radio buttons, select boxes, file select boxes.

7 Write a HTML program to create a frames and links between frames.

8 Write a HTML program to create different types of style sheets.

9 Write a HTML program to create CSS on links, lists, tables and generated content.

10 Write a HTML program to create your college web site using multi column layouts.

11 Write a HTML program to create your college web site using for mobile device.

12 Write a HTML program to create login form and verify username and password using DOM

a. Write a JavaScript program to calculate area of rectangle using function.

13 b. Write a JavaScript program to wish good morning, good afternoon, good evening depending on the current time.

14 a. Write a JavaScript program using switch case?.

b. Write a JavaScript program to print multiplication table of given number using loop.

15 a. Write a JavaScript programs using any 5 events.

b. Write a JavaScript program using JavaScript built in objects.

16 Write a JavaScript program to create registration form and validate all fields using form validation

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

III-Year / Semester – V , Paper-VI (Elective-2)

DSE–2E

Visual Programming

BS506

Theory	3 Hours/Week	3 credits
Practical	2 Hours/Week	1 credit

Unit – I

Introduction to VB: Writing windows application with VB, Programming languages - procedural, object oriented, event driven; VB Environment, Writing first VB project, compiling, debugging, and running the programs.

Controls : Introduction to controls textboxes, frames, check boxes, option buttons, images, setting borders and styles, the shape control, the line control, working with multiple controls and their properties, designing the user interface, keyboard access, tab controls, default & cancel property, coding for controls.

Variables, constants, and Calculation: Data types, naming rules and conversion, constants-named and intrinsic, declaring variables, scope of variables, val function, arithmetic operations, formatting data Counting and accumulating Sums.

Unit – II

Decisions and Conditions : If statement, Conditions-comparing numeric variables and constants, comparing strings, compound conditions (and, or, not), nested if statements, using if statements with option buttons & check boxes, displaying message in message box, input validation. Calling event procedures, debugging VB projects, Debugging Step-by-Step Tutorial.

Modular programming: Menus, using common dialog box, writing general procedure. Forms Handling : Multiple forms, creating, adding, removing forms, hide, show method, load, unload statement, me keyword, referring to objects on a different forms, Variables and constants in Multiple-Forms.

Iteration Handling: Lists Boxes and Combo Boxes, Do/loops, for/next loops, using msgbox function, using string function.

Unit – III

Arrays: control Arrays, the case structure, single-dimension arrays, for Each/Next statement, table lookup, using list boxes with array, multidimensional arrays.

Database Connectivity: VB and database, using the data control, viewing a database file-step-by-step, Navigating the Database in code, using list boxes and comboboxes as data-bound controls, adding a lookup table and navigation-stepby-step, updating a database file, Recordsets, working with database fields, creating a new Dynaset.

Advanced topics in VB: ActiveX controls, Dynamic link libraries (DLL), Multiple Document interface (MDI).

Text

Julia Case Bradley, Anita C. Millspaugh, *Programming in Visual Basic 6.0 (TMHE 2000–14th Reprint 2004)*

References

Diane Zak, *Programming with Microsoft Visual Basic 2012*

Tony Gaddis, Kip Irvine. *Starting Out With Visual Basic 2012*

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Visual Programming Lab

BS506

Practical 2 Hours/Week 1 credit

1. Write a program to print a table of numbers from 5 to 15 and their squares and cubes.
2. Write a program to print the largest of three numbers.
3. Write a program to print the factional of a number.
4. Write a program to print the GCD of any two positive integers.
5. Write a program to print the given number in reverse order of digits.
6. Write a program to print the given number is prime or not.
7. Create an application that prompts the user to enter today's sales for five stores. The program should then display a simple bar graph comparing each store's sales.
8. Create an application that allows the user to enter each month's amount of rainfall and calculates the total and average rainfall for a year.
9. Write code that declares a string array with three elements and then stores your first, middle, and last names in the array's elements.
10. Enter a list of positive numbers terminated by zero. Find the sum and average of these numbers.
11. A person deposits Rs. 1000 in a fixed account yielding 5% interest. Complete the amount in the account at the end of each year for n years.
12. Read n numbers. Count the number of negative numbers, positive numbers and zeros in the list.
13. Read n numbers. Count the number of negative numbers, positive numbers and zeroes in the list. (Use arrays.)
14. Read a single dimension array. Find the sum and average of these numbers.
15. Read a two dimension array. Find the sum of two 2D Array.
16. Create a database Employee and Make a form to allow data entry to Employee Form with the following command buttons:

Employee Form

Employee Nam
Employee Id:
Date of Joining
Designation:
Department:
Address:
Basic Pay:

PREV | NEXT | FIRST | LAST | ADD | SAVE | DELETE | CANCEL

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

III-Year / Semester – VI , GE-2

GE–2 Information Technologies – 2 BS601

Theory 2 Hours/Week 2 credits

Unit – I

Introduction to Algorithms and Programming Languages: Algorithm, Control Structures, Flowcharts, Pseudo code, Programming Languages, Generations of Programming Languages.

Database Systems: File Oriented Approach, Database Oriented Approach, Database Views, Three-Schema Architecture, Database Models, Components of DBMS, Introduction of SQL Queries.

Unit – II

Computer Networks: Introduction, Connection Media, Data Transmission Mode, Data Multiplexing, Data Switching, Network Topologies, Types of Networks, Networking Devices, OSI Model. The Internet: Internet Services, Types of Internet Connections, Internet Security.

Emerging Computer Technologies: Distributed Networking, Peer-to-peer Computing, Grid Computing, Cloud Computing, Utility Computing, On0demand Computing, Wireless Network, Bluetooth, Artificial Intelligence.

Text
References

Reema Thareja, *Fundamentals of Computers*
P. K. sinha, *Computer Fundamentals*
Anita Goel, *Computer Fundamentals*
V. Rajaraman, *Fundamentals of Computers*
E. Balagurusamy, *Fundamentals of Computers*
J. Glenn Brookshear, Dennis Brylow, *Computer Science An Overview*

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

III-Year / Semester – VI , Paper-VII

DSC–3F

Mobile Applications

BS605

Theory	3 Hours/Week	3 credits
Practical	2 Hours/Week	1 credit

Unit – I

Introduction to Programming and App Inventor: Introduction, What Is a Computer Program? Introducing App Inventor, Getting Hands-On with App, Tutorial 1-1,1-2,1-3,1-4 Working with Media: Displaying Images, Tutorial 2-1,2-2,2-3,Duplicating Blocks and Using Dropdowns, Sounds, Color Blocks, Layout Components, Tutorial 2-7 Input, Variables, and Calculations: The Text Box Component, Performing Calculations, Tutorial 3-1, 3-2 ,Storing Data with Variables Tutorial 3-3, Creating Blocks with Type blocking, Math Functions.

Unit – II

Decision Blocks and Boolean: Introduction to Decision Blocks, Relational Operators and the if Block, Tutorial 4-1, The if then else Block Tutorial 4-2, A First Look At Comparing Strings, Logical Operators, Tutorial 4-4, Nested Decision Blocks, Tutorial 4-5 The if then else if Block, The Screen's Initialize Event, The ListPickerComponent, The CheckBox Component, Repetition Blocks, Times, and Dates: The Notifier Component, The while Loop, Tutorial 5-1, The for each Loop Tutorial 5-2, The Clock Component, The DatePicker Component Procedures and Functions.

Unit – III

Lists -Graphics and Animation: The Canvas Component, Tutorial 9-1, The Ball and ImageSprite Component, Tutorial 9-2, 9-3,Using the Clock Component to Create AnimationsWorking with Text: Concatenating Strings, Comparing Strings, Trimming a String, Converting Case, Finding a Substring Tutorial 10-3,Replacing a Substring , Extracting a Substring, Splitting a Substring Text to Speech and Text Messaging.

Text Tony Gaddis, Rebecca Halsey, *Starting Out with App Inventor for Android (1e)*

References

Mark L. Murphy, *Beginning Android*
J.F. DiMarzio, *Android – A Programmer's Guide*
W Frank Ableson, Robi Sen, Chris King, *Android in Action*
Lucas Jordan, Pieter Greyling, *Practical Android Projects*
http://appinventor.mit.edu/

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Mobile Applications Lab

BS605

Practical 2 Hours/Week 1 credit

1. Create the Screen for the Hello World App
2. Develop a mobile app to Create Good Morning Translator App
3. Design a mobile app to change the Screen's Background Image
4. Create a mobile app for layout components and Color Blocks
5. Design the mobile app for the Kilometer Converter
6. Create mobile app to calculate Test Average
7. Develop a mobile app to demonstrate Range Checker
8. Develop a mobile app for Grader App
9. Design a mobile app to demonstrate checkbox components
10. Demonstrate a mobile app for while loop
11. Design a mobile app to Calculate Sum of Consecutive Numbers
12. Design a mobile app to create Lights
13. Design a mobile app to demonstrate lists
14. Design a mobile app to validate an Email Address
15. Design a mobile app to display images of all states and union territories in India
16. Design a mobile app of your college having college information, features, events and placements

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Syllabus for Computer Applications

B.A Programme under Choice Based Credit System

B.A (Computers)

III-Year / Semester – VI , Paper-VIII (Elective-1)

DSE–1F **PHP Programming** BS606

Theory	3 Hours/Week	3 credits
Practical	2 Hours/Week	1 credit

Unit – I

Introducing PHP – What is PHP? Why use PHP? Evolution of PHP, Installing PHP, Other ways to run PHP, Creating your first script. PHP Language Basics – Using variables, Understanding Data Types, Operators and Expressions, Constants. Decisions and Loops – Making Decisions, Doing Repetitive Tasks with Looping, Mixing Decisions and Looping with HTML. Strings – Creating and Accessing Strings, Searching Strings, Replacing Text with Strings, Dealing with Upper and Lowercase, Formatting Strings. Arrays – Creating Arrays, Accessing Array Elements, Looping Through Arrays with for-each, Working with Multidimensional Arrays, Manipulating Arrays.

Unit – II

Functions – What is a Function? Why Functions are useful? Calling Functions, Working with Variable Functions, Writing your own Functions, Working with References, Writing Recursive Functions. Objects – Introduction OOP Concepts, Creating Classes and Objects in PHP, Creating and using Properties, Working with Methods, Object Overloading with _get(), _set() and _call(), Using Inheritance to Extend Power of Objects, Constructors and Destructors, Automatically Loading Class Files, Storing as Strings. Handling HTML Forms with PHP – How HTML form works, Capturing Form Data with PHP, Dealing with Multi-Value Fields, Generating Web Forms with PHP, Storing PHP Variables in Forms, Creating File Upload Forms, Redirecting After a Form Submission.

Unit – III

Working with Files and Directories - Getting Information on Files, Opening and Closing Files, Reading and Writing to Files, Copying, Renaming, and Deleting Files, Working with Directories. Introducing Databases and SQL – Deciding How to Store Data, Understanding Relational Databases, Setting Up MySQL, A Quick Play with MySQL, Connecting MySQL from PHP. Retrieving Data from MySQL with PHP –Retrieving Data with SELECT, Creating a Member Record Viewer. Manipulating MySQL Data with PHP – Inserting, Updating, and Deleting Records.

Text Matt Doyle, *Beginning PHP 5.3* (Wrox – Wiley Publishing)

References

Ellie Quigley, *PHP and MySQL by Example*
Joel Murach, Ray Harris, *Murach's PHP and MySQL*
Brett McLaughlin, *PHP & MySQL: The Missing Manual*
Luke Welling, Laura Thomson, *PHP and MySQL Web Development*
W. Jason Gilmore, *Beginning PHP and MySQL From Novice to Professional*
Andrew Curioso, Ronald Bradford, Patrick Galbraith, *Expert PHP and MySQL*

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PHP Programming BS606

Practical 2 Hours/Week 1 credit

1 a)Write a PHP script to find the factorial of a given number.
b)Write a PHP script to find the sum of digits of a given number.

2 a)Write a PHP script to find whether the given number is a prime or not.
b)Write a PHP script to demonstrate the use of break, continue statements using nested loops.

3 a)Write a PHP script to display the Fibonacci sequence with HTML page.
b)Write a PHP script to create a chess board.

4 a)Write a PHP script using built-in string function like strstr(), strops(), substr_count(), etc...
b)Write a PHP script to transform a string to uppercase, lowercase letters, make a string's firstcharacter uppercase.

5 a)Write a PHP script that inserts a new item in an array in any position.
b)Write a PHP function to check whether all array values are strings or not.

6 a)Write a PHP script to count number of elements in an array and display a range of array elements.
b)Write a PHP script to sort a multi-dimensional array set by a specific key.

7 a)Write a PHP script using a function to display the entered string in reverse.
b)Write a PHP script using function for sorting words in a block of text by length.

8 a)Write a PHP script for creating the Fibonacci sequence with recursive function.
b)Write a PHP script using pass by value and pass by reference mechanisms in passing arguments tofunctions.

9 a)Write a PHP script to demonstrate the defining and using object properties.
b)Write a PHP script to demonstrate the inheritance.

10 a)Write a PHP script to demonstrate the object overloading with _get(), _set(), and _call().
b)Write a PHP script to demonstrate the overloading property accesses with _get() and _set().

11 a)Write a PHP script to demonstrate the method overloading and method overriding mechanisms.
b)Write a PHP script to demonstrate the use of final classes and final methods.

12 a)Write a PHP script to demonstrate the use interfaces.
b)Write a PHP script using constructors and destructors.

13 Write a PHP application to handling HTML forms with PHP script.

14 a)Write a PHP script to create a file, write data into file and display the file's data.
b)Write a PHP script to check and change file permissions, copying, renaming and deleting files.

15 a)Write a PHP application for connecting to MySQL and reading data from database table.
b)Write a PHP application for inserting, updating, deleting records in the database table.

16 Write a PHP application for student registration form.

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.A (Computers)

III-Year / Semester – VI , Paper-VIII (Elective-2)

DSE–2F | **Information Security and Cyber Laws** | BS606

Theory	3 Hours/Week	3 credits
Practical	2 Hours/Week	1 credit

Unit – I

Introduction to Information Systems and Security - Information Systems, Types of IS, Development of IS, Introduction to Information Security, Need for Information Security, Threats to Information Systems, Information Assurance, Cyber Security.

Introduction to Application Security and Counter Measures – Introduction to Application Security, Data Security Considerations, Security Technologies, Security Threats, Security Threats to E-Commerce.

Unit – II

E-Cash and Electronic Payment System, Credit/Debit/Smart Cards, Digital Signature, Cryptography and Encryption.

Introduction to Security Measures – Secure Information System Development, Application Development Security, Information Security Governance and Risk Management, Security Architecture and Design, Security Issues in Hardware, Data Storage, and Downloadable Devices, Physical Security of IT Assets, Backup Security Measures.

Unit – III

Introduction to Security Policies and Cyber Laws – Need for an Information Security Policy, Information Security Standards – ISO, Introducing Various Security Policies and Their Review Process, Introduction to Indian Cyber Law, Objective and Scope of the IT Act, 2000, Intellectual Property Issues, Overview of Intellectual-Property- Related Legislation in India, Patent, Copyright, Law Related to Semiconductor Layout and Design, Software License.

Text References

Dr. Surya Prakash T, Ritendra G, Praveen Kumar S, KLSI, *Introduction to information security and cyber laws (Dreamtech Publication)*

Anderson, Ross, *Security Engineering*

G.R.F. Snyder, T. Pardoe, *Network Security*

Mark Stamp, *Information Security: Principles and Practice*

A. Basta, W.Halton, *Computer Security: Concepts, Issues and Implementation*

Mark S. Merkow, Jim Breithaupt, *Information Security: Principles and Practice*

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Information Security and Cyber Laws Lab BS606

Practical 2 Hours/Week 1 credit

1 Demonstrate the use of Network tools: ping, ipconfig, ifconfig etc...
2 Demonstrate the use of Network tools: tracert, arp, netstat, whois etc...

3 Use of Password cracking tools: John the Ripper, Ophcrack. Verify the strength of passwords using these tools.
4 Write a program for performing encryption and decryption operations of Caesar cipher.
5 Write a program for performing encryption and decryption operations of Rail cipher.
6 Write a program for performing encryption and decryption operations of Monoalphabetic cipher.
7 Write a program for performing encryption and decryption operations of Playfair cipher.

8 Write a program for performing encryption and decryption operations using Transposition technique.
9 Use nmap to analyze a remote machine.
10 Use zenmap to analyze a remote machine.
11 Use Burp proxy to capture and modify the message.
12 Demonstrate sending of a protected word document.
13 Demonstrate sending of a digitally signed document.
14 Demonstrate sending of a protected worksheet.
15 Demonstrate use of steganography tools.
16 Demonstrate use of gpg utility for signing and encrypting purposes.

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MOOCs [Massive Online Open Courses] Free Resources

E-Learning:

▪ NPTEL	:nptel.ac.in	[Core Subjects Certification]
▪ C++ INSTITUTE	:cppinstitute.org	[C++ Certification]
▪ ORACLEEDUCATION	:education.oracle.com	[Java, DBMS Certification]
▪ BIG DATA UNIVERSITY	:bigdatauniversity.com	[Big Data Certification]
▪ COURSERA	:coursera.org	[Core Subjects Certification]
▪ CODEACADEMY	:codecademy.com	[Coding Certification]
▪ KHANACADEMY	:khanacademy.org	[Core Subjects Certification]
▪ PIXAR IN A BOX	:khanacademy.org/partner-content/pixar	
▪ VIDEOLECTURES	:videolectures.net	
▪ YOUTUBEEDU	:plus.google.com/+YouTubeEDU/posts	
▪ DISNEY RESEARCH	:disneyresearch.com	
▪ ALISON	:alison.com	[Core Subjects Certification]
▪ INTERNET ARCHIVE	:archive.org	

Freeware:

▪ SCILAB	: scilab.org	[MatLab Equivalent]
▪ GEOGEBRA	:geogebra.org	[Software for Class Room Teaching]

Search Engine:

▪ WOLFRAM ALPHA	:wolframalpha.com	[Computing Engine]
▪ CITESEER	:citeseerx.ist.psu.edu	[Searching Research Articles]
▪ DOAJ	:doaj.org	[Open Access to Journals]

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EXAMINATIONS PATTERN

For I, II, III, IV, V & VI Semesters

Semester End exam	**70 Marks**
Internal Exam	**30 Marks**
Total	**100 Marks**

Semester Question Paper Pattern

Part-A **Very Short Questions** **(5X2M=10M)**

Five Questions (No Choice)

Part-B **Short Questions** **(4X5M=20M)**

Five Questions out of ***four*** (Overall Choice)

Part-C **Short Questions** **(4X10M=40M)**

Four Questions (Internal Choice)

Two Questions from each unit should be given

Internal Paper Pattern

Written Exam	20 Marks
Assignment	5 Marks
Seminar	5 Marks
Total	**30 Marks**

Practical Question Paper Pattern

Practical Exam and Execution	30 Marks
Record	10 Marks
Viva-voice	10 Marks
Total	**50 Marks**

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MODEL QUESTION PAPER PATTERN

DEPARTMENT OF COMPUTER APPLICATIONS

B. A (Computer Applications) I/II/III Year Semester Examinations
Computer Subjects
(With effect from 2016-17)

Time: 2.30 Hrs **Marks: 70 M**

Part-A

I. Answer ALL the Questions. (Very Short answer Questions)

5X2M=20M

1.
2.
3.
4.
5.

Part-B

II. Answer any *four* Questions.(Short answer Questions)

4X5M=20M

6.
7.
8.
9.
10.

Part-C

III. Answer the following Questions.(Essay Questions) 4X10M=40M

11. A)
    Or
    B)
12. A)
    Or
    B)
13. A)
    Or
    B)
14. A)
    Or
    B)

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NAGARJUNA GOVERNMENT COLLEGE: NALGONDA

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Department of Computer Application

Panel of Examiners of Paper setting and Evaluation

S No	Subject	Name and Address of the College	Mobile No	Remarks
		I Year		
01	Programming in C	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
02	Programming in C++	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
		II Year		
03	Relationa Database Management System (RDBMS)	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
04	Computer NEtworks	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	

		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
		III Year		
05	Multimedia Systems	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
6	Web Technologies	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
7	Mobile Applications	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
08	nformation Security and Cyber Laws	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science	9908521900	

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BOARD OF STUDIES

DEPARTMENT OF COMPUTER APPLICATIONS

B.Sc (COMPUTER APPLICATIONS)

2018-19

NAGARJUNA GOVERNMENT COLLEGE: NALGONDA

(Autonomous)

DEPARTMENT OF COMPUTER APPLICATIONS

B.Sc-COMPUTER APPLICATIONS

BOARD OF STUDIES

2018-19

Board of Studies in the Department of B.Sc – Computer Applications has been constituted with the following members for the year 2018-19.

S. No	Name	Designation
1	Dr. D Narayana Rao In-charge Department of Computer Application Nagarjuna Government College Nalgonda	Chair Person Chair Person Board of Studies Dept. of Computer Applications N.G. College, Nalgonda.
2	Dr. R. Rekha Asst. Professor MG University Nalgonda	University Nominee 05/09/2018 HOD MCA/MGU/NLG.
3	Sri. Y V Rama Rao Asst. Prof. Computer Applications GDC Hayathnagar, Hyderabad	Subject Expert 5/9/2018 Lecturer in..... Government Degree College Hayathnagar, R.R. Dist.
4	Dr. G. Rajitha Devi Asst. Prof. Computer Science GDC Hayathnagar, Hyderabad.	Subject Expert 5/9/2018 Lecturer in..... Government Degree College Hayathnagar, R.R. Dist.
5	Sri. K Shivaraju Lecturer in Computer Applications Nagarjuna Govt. College, Nalgonda	Member

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NAGARJUNA GOVERNMENT COLLEGE, NALGONDA

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DEPARTMENT OF COMPUTER APPLICATION

B.ScA-COMPUTER APPLICATIONS

BOARD OF STUDIES MEETING

The members of Board of Studies in Computer Application department, Nagarjuna Govt. College, Nalgonda met under the chairmanship of Dr. D Narayana Rao on 05/09/2018 at Department of Computer Application, Nagarjuna Govt. College, and passed the following resolutions

AGENDA

1. To consider and approve the Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) system for B.Sc - I Year students (I & II Semesters) for the academic year 2018-19.
2. To consider and approve the syllabus of B. B.Sc (Computer Applications) of I Year for I and II semesters during the academic year 2018-19.
3. To consider and approve the modules (Units) and setting of Question papers as 70:30 for Theory External and Internal assignments for B.Sc – I Year (I & II Semesters) for the academic year 2018-19.
4. To consider and approve the Syllabus of practical examinations at the end of I & II semesters for B.Sc - I year students.
5. To consider and approve the Model question papers for B.Sc – I year (I & II Semesters) for the academic year 2018-19.
6. To consider and approve the list Examiners for Paper setting and evaluation for the academic year 2018-19.
7. Any other related academic matters.

RESOLUTIONS

1. The Choice Based Credit System (CBCS) and Cumulative Grade Point Average (CGPA) System can be implemented for the B.Sc – I Year (I & II Semesters) students for the academic year 2018-19.

2. The modules and allotted Credits is approved for B.Sc – I year (I & II semesters) students for the academic year 2018-19.

3. Unitization of syllabus into 4 units for each paper (module)

4. The evaluation of the students for each semester of I & II Consists 100 marks in the ratio of 70:30 External End Theory exam – 70 marks and internal exam consist 30 marks.

5. Approved the syllabus for I & II papers and Model question papers.

6. Approved to conduct the Practical examinations at the end of I and II Semesters. Each paper consist 50 marks. The syllabus is approved and followed the practical question bank (as per University Question bank).

7. Approval the Panel of examiners for paper setting and evaluation for the academic year 2018-19.

8. Approved the proposal of preparation of scheme of valuation and key by Question paper setter.

SIGNATURES OF THE MEMBERS.

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NAGARJUNA GOVT. DEGREE COLLEGE, NALGONDA
DEPARTMENT OF COMPUTER APPLICATIONS

B.Sc – COMPUTER APPLICATION

SUBJECT WISE CBCS CREDITS LIST

Sno	YEAR/ Semester	Module (Paper)	Hours (HPW)	Max. Marks	Credits
	I-YEAR				
1	I-YEAR / I-SEM Core-1	Programming in C	4T+2P Hrs	100 M + 50 M	4+1=5
2	I-YEAR / II-SEM Core-2	Programming in C++	4T+2P Hrs	100 M + 50 M	4+1=5
	II-YEAR				
3	SEC-1	SEC-1	2T		2
	II-YEAR / III-SEM Core-3	Relational Database Management System	3T+2P Hr	100 M + 50 M	4+1=5
4	SEC-2	SEC-2	2T		2
	II-YEAR/IV-SEM Core-4	Computer Networks	3T+2P Hr	100 M + 50 M	4+1=5
	III-YEAR				
5	GE-1	Information Technologies-1	2T		2
	SEC-3	SEC-3			2
	III-YEAR/V-SEM Core-5 & 6	Multimedia Systems	3T+2P Hrs	100 M + 50 M	3+1=4
		Web Technologies / Visual Programming	3T+2P Hrs	100 M + 50 M	3+1=4
6	GE-2	Information Technologies-2	2T		2
	SEC-4	SEC-4			2
	III-YEAR/VI-SEM Core-7 & 8	Mobile Applications	3T+2P Hrs	100 M + 50 M	3+1=4
		PHP Programming/ Information Security and Cyber Laws	3T+2P Hrs	100 M + 50 M	3+1=4
	TOTAL CREDITS		**50**		**48**

BOS 2018-19

DEPARTMENT OF COMPUTER APPLICATIONS
B.Sc – COMPUTER APPLICATIONS

SYLLABUS

DEPARTMENT OF COMPUTER APPLICATION, N.G.C.

Structure of B.Sc (Computer Application) (CBCS) for Nagarjuna Govt. College (A), Nalgonda (w.e.f. Academic Year 2016-17)

Code	Course Title	Course Type	HpW	Credits
	SEMESTER – I			
BS106	Programming in C	DSC–3A	4T+2P=6	4 + 1 =5
	SEMESTER – II			
BS206	Programming in C++	DSC–3B	4T+2P=6	4 + 1 =5
	SEMESTER – III			
BS301	SEC	SEC–1	2T	2
BS306	Relational Database Management Systems	DSC–3C	4T+2P=6	4 + 1 =5
	SEMESTER – IV			
BS401	SEC	SEC–2	2T	2
BS406	Computer Networks	DSC–3D	4T+2P=6	4 + 1 =5
	SEMESTER – V			
BS501	Information Technologies –1	GE–1	2	2
BS502	SEC	SEC–3	2	2
BS505	Multimedia Systems	DSC–3E	3T+2P=5	3 + 1 =4
BS506	Elective–A: Web Technologies	DSE–1E	3T+2P=5	3 + 1 =4
	Elective–B: Visual Programming	DSE–2E		
	SEMESTER – VI			
BS601	Information Technologies –2	GE–2	2T	2
BS602	SEC	SEC–4	2T	2
BS605	Mobile Applications	DSC–3F	3T+2P=5	3 + 1 =4
BS606	Elective–A: PHP Programming	DSE–1F	3T+2P=5	3 + 1 =4
	Elective–B: Information Security and Cyber Laws	DSE–2F		
		Total Number of Credits		**48**

Syllabus for Computer Applications

B.Sc Programme under **Choice Based Credit System**

B.Sc (Computer Applications)
I-Year / Semester – I, PAPER-1

DSC–3A

Programming in C
106

Theory: 4 credits and Practical: 1 credit
Theory: 4 Hours/Week and Practical: 2 Hours/Week

Unit – I

Computer Fundamentals: Introduction of Computers, Classification of Computers, Anatomy of a Computer, Memory Hierarchy, Introduction to OS, Operational Overview of a CPU.

Program fundamentals: Generation and Classification of Programming Languages, Compiling, Interpreting, Loading, Linking of a Program, Developing Program, Software Development.

Algorithms: Definitions, Different Ways of Stating Algorithms (Step-form, Pseudo-code, Flowchart), Strategy for Designing Algorithms, Structured Programming Concept.

Basics of C: Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation–precedence and associativity, Type Conversions.

Unit – II

Input-Output: Non-formatted and Formatted Input and Output Functions, Escape Sequences,

Control Statements: Selection Statements – if, if-else, nested if, nested if-else, comma operator, conditional operator, switch; Iterative Statements – while, for, do-while; Special Control Statement – goto, break, continue, return, exit.

Arrays and Strings: One and Two Dimensional Arrays, Character Arrays, Functions from ctype.h, string.h.

Unit – III

Functions: Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to Functions, Score of Variables, Storage Classes, Inline Functions, and Recursion.

Pointers: Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Dynamic Memory Allocation.

Unit – IV

User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union), Structures Vs Unions, Enumeration Types.

Files: Introduction, Using Files, Working with Text Files and Binary Files, Other File Management Functions.

Text Pradip Dey, Manas Ghosh, *Computer Fundamentals and Programming in C* (2e)

References

1. Ivor Horton, *Beginning C*
2. Herbert Schildt, *The Complete Reference C*
3. Paul Deitel, Harvey Deitel, *C How To Program*
4. Byron S. Gottfried, *Theory and Problems of Programming with C*
5. Brian W. Kernighan, Dennis M. Ritchie, *The C Programming Language*
6. B. A. Forouzan, R. F. Gilberg, *A Structured Programming Approach Using C*

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C Lab

Practical: 2 Hours/Week Credit: 1 :-

1.Write a program to find the largest two numbers using if and conditional operator.

2.Write a program to calculate arithmetic operations of two numbers using switch.

3.Write a program to print the reverse of a given number.

4.Write a program to print whether the given number is a prime or not.

5.Write a program to find largest and smallest elements in a given list of numbers.

6.Write a program to find the sum of two matrices.

7.Write a program to find the product of two matrices.

8.Write a program to print the reverse of a given string.

9.Write a program to find the factorial of a positive integer using iteration and recursion.

10.Write a program to find the GCD of two positive integers using iteration and recursion.

11.Write a program to demonstrate the call by value and the call by reference concepts.

12.Write a program to illustrate the use of Enumeration data type.

13.Write a program to illustrate the use of structure concept.

14.Write a program to illustrate the use of union concept.

15.Write a program to write content into a file and display contents of a file

16.Write a program to copy content of one file into another file and display the content of new file.

Note:
1.Write the Pseudo code and draw Flow Chart for the above programs.

2.Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows 10.

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Syllabus for Computer Applications

B.A Programme under **Choice Based Credit System**

B.Sc (Computer Applications)
I-Year / Semester – II, PAPER-II

DSC-3B

Programming in C++

206

Theory: 4 credits and Practical: 1 credit
Theory: 4 Hours/Week and Practical: 2 Hours/Week

Unit – I

Introduction to C++: Applications, Example Programs, Tokens, Data Types, Variables, Operators, Expressions, Control Structures, Arrays, Strings, Pointers.

Functions: Introduction, Prototype, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters, Inline Functions, Default Arguments, Overloading Functions, Passing Arrays to Functions.

Unit – II

Object Oriented Programming: Procedural Programming Vs Object-Oriented Programming, Terminology, Benefits, Languages, and Applications.

Classes: Introduction, Defining an Instance of a Class, Why Have Private Members? Separating Class Specification from Implementation, Inline Member Functions, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors, Private Member Functions, Instance and Static Members, Friends of Classes, Member-wise Assignment, Copy Constructors, Operator Overloading.

Unit – III

Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification, Constructors and Destructors in Base and Derived Classes, Redefining Base Class Functions, Polymorphism and Virtual Member Functions, Abstract Base Classes and Pure Virtual Functions, Multiple Inheritance. C++ Streams: Stream Classes, Unformatted I/O Operations, Formatted I/O Operations.

Unit – IV

Exceptions: Introduction, Throwing an Exception, Handling an Exception, Object-Oriented Exception Handling with Classes, Multiple Exceptions, Extracting Data from the Exception Class, Re-throwing an Exception. Templates: Function Templates–Introduction, Function Templates with Multiple Type, Overloading with Function Templates, Class Templates – Introduction, Defining Objects of the Class Template, Class Templates and Inheritance.

Text Tony Gaddis, *Starting out with C++: from control structures through objects* (7e)

References

1. B. Lippman, *C++ Primer*
2. Bruce Eckel, *Thinking in C++*
3. K.R. Venugopal, *Mastering C++*
4. Herbert Schildt, *C++: The Complete Reference*
5. Bjarne Stroustrup, *The C++ Programming Language*
6. Sourav Sahay, *Object Oriented Programming with C++*

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C++ Lab

Practical: 2 Hours/Week Credit: 1

1.Write a program to print the sum of digits of a given number

2.Write a program to check whether the given number is Armstrong or not

3.Write a program to check whether the given string is Palindrome or not

4.Write a program to read the student name, roll no, marks and display the same using class and object.

5.Write a program to find area of a rectangle, circle, and square using class and object.

6.Write a program to implement inline function inside and outside of a class for

a.Finding the area of a square

b.Finding the area of a cube

7.Write a program to implement friend function and friend class

8.Write a program to implement constructor and destructor with in a class.

9.Write a program to demonstrate hierarchical inheritance.

10.Write a program to demonstrate multiple inheritances.

11.Write a program to demonstrate the constructor overloading.

12.Write a program to demonstrate static polymorphism.

13.Write a program to demonstrate dynamic polymorphism.

14.Write a program to implement polymorphism using pure virtual functions.

15.Write a program to demonstrate the function templates and class templates.

16.Write a program to demonstrate exception handling using try, catch, and finally.

Note: Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows 10.

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EXAMINATIONS PATTERN

For I and II Semesters

Semester End exam	**70 Marks**
Internal Exam	**30 Marks**
Total	**100 Marks**

Semester Question Paper Pattern

Part-A **Very Short Questions** **(5X2M=10M)**

Five Questions (No Choice)

Part-B **Short Questions** **(4X5M=20M)**

Five Questions out of four (Overall Choice)

Part-C **Short Questions** **(4X10M=40M)**

Four Questions (Internal Choice)

Two Questions from each unit should be given

Internal Paper Pattern

Written Exam	20 Marks
Assignment	5 Marks
Seminar	5 Marks
Total	**30 Marks**

Practical Question Paper Pattern

Practical Exam and Execution	30 Marks
Record	10 Marks
Viva-voice	10 Marks
Total	**50 Marks**

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MODEL QUESTION PAPER PATTERN

DEPARTMENT OF COMPUTER APPLICATIONS

B.Sc (Computer Applications) I Year, I and II Semester Examinations
Computer Subjects
(With effect from 2018-19)

Time: 2.30 Hrs **Marks: 70 M**

Part-A

I. Answer ALL the Questions. (Very Short answer Questions)

5X2M=20M

1.
2.
3.
4.
5.

Part-B

II. Answer any *four* Questions.(Short answer Questions)

4X5M=20M

6.
7.
8.
9.
10.

Part-C

III. Answer the following Questions.(Essay Questions) 4X10M=40M

11. A)
    Or
    B)
12. A)
    Or
    B)
13. A)
    Or
    B)
14. A)
    Or
    B)

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Department of Computer Application

Panel of Examiners of Paper setting and Evaluation

S No	Subject	Name and Address of the College	Mobile No	Remarks
		I Year		
01	Programming in C	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	
02	Programming in C++	1. Y V Rama Rao Asst. Prof in Computer Application GDC Hayathnagar, Hyderabad	9912890463	
		2. Dr. G Rajitha Devi Asst. Prof in Computer Science GDC Hayathnagar, Hyderabad	9441910560	
		3. Dr. R Rekha Associative Professor MGU, Nalgonda	9490232651	
		4. S. Yamuna Rani Asst. Prof. in Computer Science GDC Malkajgiri, Hyderabad	9908521900	

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