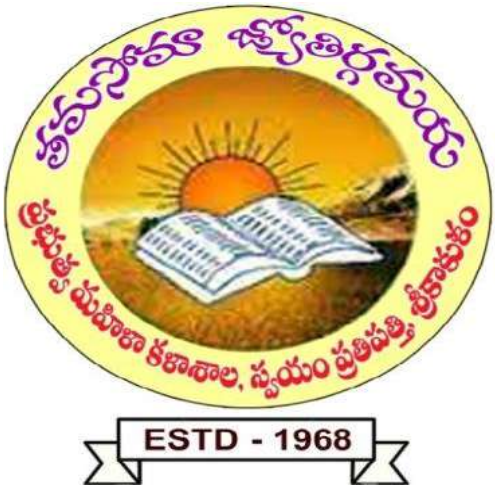
GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)

SRIKAKULAM

DEPARTMENT OF
COMPUTER SCIENCE & APPLICATIONS



BOARD OF STUDIES
COMPUTER APPLICATIONS SYLLABUS
2022-23

Government College forWomen(Autonomous)Srikakulam

Reaccredited by NAAC with 'A' Grade during 3rd Cycle (CGPA 3.09)

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From
Dr.K.Sreeramulu,M.Com.,Ph.D.
Principal
Govt. College for Women (A)
Srikakulam

BOARD OF STUDIES MEETING AGENDA FOR 2021- 22 & 2022 – 23

1) Adoption of Choice Based Credit System (CBCS) for I, II , III ,IV,V end Semesters.

2) Approve and introduce the newly formed syllabi for I,II,III,IV,V,VI Course or subjects.

3) Ratification and introduction of semester mode pattern of Examination, for all semesters.

4) Approve and ratify value added certificate courses.

5) Approval and ratification of Skill Based Programmes

6) Approval and ratification of Life Skill courses and skill development Courses for 1st and 2nd Year Students.

7) Approve and ratify community Service Projects and Internships at end of II, IV,V, VI Semesters.

8) Approve and ratify Model Question Paper, Blue Print etc.in which25 marks Internal Assessment and 75 marks External Assessment

9) Approveand ratify model question paper, for LSC and SDC for 50 marks external pattern

10) Approval of List of Examiners

11) Approval of innovative teaching , learning and evaluation Techniques

12) Approval of Student Seminars, Workshops, Field Trips – student centric activities.

13) Approval of Students Projects and Students Research.

14) Approval of ICT mode of teaching.

15) Approval of encouragement to join students in JKC

16) Approval of encouragement for students to join in NSS and different extension activities.

17) Any other matter

Signature of Principal

Department of Computer Science & Applications
Government College for Women(Autonomous)Srikakulam

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BOS Meeting 20.10.2022

The Board of Studies meeting is held on 20.10.2022 Time: 10.00 am in the Department of Computer Science & Applications, Government College for Women (Autonomous) , Srikakulam for the Autonomous students i.e., 2020 – 21 under the Chairman ship of Smt. S. Vani Kumari , Head of the Department of Computer Applications of this college as per the UGC Letter No.F22-1/2017 (AC) Date: 28.11.2018 and Dr.B.R.Ambekar University , Srikakulam letter, RC.No.BRAU/F J :Autonomous Status 2019 -20 dated 15.03.2019. The following members attended and discussed the various academic matters of the Computer Applications Syllabus and its evaluation.

S.No	BOS Committee	Name & Designation
1.	Chair Person	Name : Smt. S. Vani Kumari Designation :Lecturer in Computer Applications Address :GCW(A),Srikakulam
2.	Subject Expert (University Nominee)	Name : Dr. A. Mary Sowjanya Designation: Asst. Professor, Dept. of CS&SE Address: Andhra University College of Engineering(A),Vishakhapatnam
3.	Subject Expert (Nominated By Academic Council)	Name : Dr. A. Siva Prasad Designation :Lecturer in Computer Science Address : Government Degree College, Tekkali
4.	Subject Expert (Nominated By Academic Council)	Name : Sri. V. Raghava Swamy Dora Designation :Lecturer in Computer Science Address: Dr. V. S. Krishna College(A),Vishakhapatnam
5.	Member of Industrial	Name : Kum P. VijayaDurga Designation :License Manager Software Asset Management Team Address : Wipro, Hyderabad
6.	Member of Alumni	Name: Kum. M. Gayatri Varshitha Pursuing M.Sc Computer Science Dr.BR. Ambedakar University, Etcherla
7.	Members of Department	1)Smt. S. Madhavi Latha , Lecturer in Computer Applications, Government College For Women(A),SKLM 2)Smt. I. Sri Lakshmi, Lecturer in Computer Science Government College For Women(A),SKLM 3)Smt. G. Suma Latha, Lecturer in Computer Science Government College For Women(A),SKLM

GOVT. COLLEGE FOR WOMEN (AUTONOMOUS): SRIKAKULAM
B.Com. Computer Applications Structure of Syllabus
Under CBCS w.e.f. 2020-21

Sl. No	Sem	Courses	Name of Course (Each Course consists 5 Units with each Unit having 12 hours of class-work)	Hours/Week	Credits	Marks	
						Mid Sem	Sem End
FIRST YEAR							
1	I	1C	Information Technology	4T	3	25	75
		IC-P	MS-Office Lab	2P	1		50
2	II	2C	E-commerce and Web Designing	4T	3	25	75
		2C-P	Web-Designing lab	2P	1		50
SECOND YEAR							
3	III	3C	Programming with C & C++	4T	3	25	75
		3C-P	C-Programming lab	2P	1		50
4	IV	4E	Object Oriented Programming With Java	4T	3	25	75
		4E-P	Object Oriented Programming With Java Lab	2P	1		50
5		4F	Data Base Management System	4T	3	25	75
		4F-P	DBMS lab	2P	1		50
THIRD YEAR							
6,7	V	6A	Big data Analytics using R	4T	3	25	75
		6A-P	Big data Analytics using R Lab	2P	1		50
		7A	Data Science using Python	4T	3	25	75
		7A-P	Data Science using Python Lab	2P	1		50
		OR					
		6B	Mobile application development	4T	3	25	75
		6B-P	Mobile application development Lab	2P	1		50
		7B	Cyber security and malware analysis	4T	3	25	75

		7B-P	Cyber security and malware analysis Lab	2P	1		50
		OR					
		6C	E– commerce application development	4T	3	25	75
		6C-P	E– commerce application development Lab	2P	1		50
		7C	Real time governance system (RTGS)	4T	3	25	75
		7C-P	Real time governance system (RTGS) Lab	2P	1		50
		OR					
		6D	Multimedia Tools and Applications	4T	3	25	75
		6D-P	Multimedia Tools and Applications Lab	2P	1		50
		7D	Digital imaging	4T	3	25	75
		7D-P	Digital imaging Lab	2P	1		50

B.Com. Computer Applications

I Year B Com (CA), Semester- I

Course 1A:Information Technology

Outcomes:

At the end of the course, the students is expected to DEMONSTRATE the following cognitive abilities (thinking skill) and psychomotor skills.

A. *Remembers and states in a systematic way (Knowledge)*
- Describe the fundamental hardware components that make up a computer's hardware and the role of each of these components
- understand the difference between an operating system and an application program, and what each is used for in a computer
- Use technology ethically, safely, securely, and legally
- Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems

B. *Explains (Understanding)*
- Apply standard statistical inference procedures to draw conclusions from data
- Retrieve information and create reports from databases
- Interpret, produce, and present work-related documents and information effectively and accurately

C. *Critically examines, using data and figures (Analysis and Evaluation**)*
- Analyse compression techniques and file formats to determine effective ways of securing, managing, and transferring data
- Identify and analyse user needs and to take them into account in the selection, creation, integration, evaluation, and administration of computing based systems.
- Analyse a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Identify and analyse computer hardware, software

D. Working in 'Outside Syllabus *Area' under a Co-curricular Activity*(Creativity)
Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

E. Efficiently learn and use Microsoft Office applications.

Course 1A :Information Technology

(Five units with each unit having 12 hours of class work)

Unit	Details
I	**Introduction** Computer Definition - Characteristics and Limitations of Computer Hardware: Generations of Computer, Classification of Computers, Applications of Computer, Basic Components of PC, Computer Architecture - Primary and Secondary Memories- Input and Output Devices- Operating System- Function of Operating System- Types of Operating System- Languages and its Types
II	**MS word** Word Processing – Features-Advantages and Applications- Parts of Word Window-Toolbar-Creating, Saving, Closing, Opening and Editing of a Document-Moving and Coping a Text-Formatting of Text and Paragraph- Bullets and Numbering-Find and Replace - Insertion of objects-Headers and Footers- Page Formatting- Auto Correct- Spelling and Grammar- Mail Merge- Macros
III	**MS Excel** Features – Spread Sheet-Workbook – Cell-Parts of a window-Saving, Closing, Opening of a Work Book – Editing – Advantages – Formulas- Types of Function-Templates – Macros – Sorting- Charts – Filtering – Consolidation – Grouping- Pivot Table
IV	**MS Power point** Introduction – Starting – Parts-Creating of Tables- Create Presentation – Templates-Auto Content Wizard-Slide Show-Editing of Presentation-Inserting Objects and charts
V	**MS Access** Orientation to Microsoft Access - Create a Simple Access Database - Working with Table Data - Modify Table Data - Sort and Filter Records - Querying a Database - Create Basic Queries - Sort and Filter Data in a Query - Perform Calculations in a Query - Create Basic Access Forms - Work with Data on Access Forms - Create a Report - Add Controls to a Report - Format Report

Learning Resources (Course 1C:Information Technology)

References:

(1) P.Mohan computer fundamentals- HimalayaPublications.
(2) R.K.Sharma and Shashi K Gupta, Computer Fundamentals - Kalyani Publications
(3) Fundamentals of Computers ByBalagurusamy, Mcgraw Hill
(4) Computer Fundamentals Anita Goel Pearson India
(5) Introduction to Computers Peter Norton
(6) Fundamentals of Computers Rajaraman V Adabala N
(7) Office 2010 All-in-One For Dummies Peter Weverka
(8) MS-Office S.S. Shrivastava
(9) MS-OFFICE 2010 Training Guide Prof. Satish Jain, M. Geetha, KratikaBPB Publications

Online Resources:

1. https://support.office.com/en-us/office-training-center
2. https://www.skillshare.com/browse/microsoft-office
3. https://www.tutorialspoint.com/computer_fundamentals/index.htm
4. https://www.javatpoint.com/computer-fundamentalstutorial
5. https://edu.gcfglobal.org/en/subjects/office/
6. https://www.microsoft.com/en-us/learning/training.aspx

Practical Component: @ 2 hours/week/batch

- MS word creation of documents letters invitations etc, tables, mailmerge, animations in word, formatting text
- MS Excel performing different formulas, creating charts,macros
- MS power point slide creation, creation of animation
- MS Access creation of database, forms and reports

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity)
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Field studies (individual observations and recordings as per syllabus content and related areas (Individual or team activity)Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

General

1. Group Discussion
2. Visit to Software Technology parks / industries

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Coding exercises,
4. Practical assignments and laboratory reports
5. Observation of practical skills,
6. Individual and group project reports,
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

Course 2C: E-commerce & Web Designing

I **Unit I: Introduction:**

Meaning, Nature, Concepts, Advantages, Disadvantages and reasons for Transacting Online, Types of E-Commerce, e-commerce Business Models (Introduction , Key Elements of a Business Model And Categorizing Major E-Commerce Business Models), Forces Behind e-commerce.

Technology used in E-commerce: The dynamics of World Wide Web and Internet (Meaning, EvolutionAnd Features); Designing, Building and Launching e-commerce website (A systematic approach involving decisions regarding selection of hardware, software, outsourcing Vs. in-house development of a website)

II **Unit-II: E-payment System:**

Models and methods of e–payments (Debit Card, Credit Card, Smart Cards, e-money), Digital Signatures (Procedure, Working And Legal Position), Payment Gateways, Online Banking (Meaning, Concepts, Importance, Electronic Fund Transfer, Automated Clearing House, Automated Ledger Posting), Risks Involved in e-payments.

III **Unit-III: On-line Business Transactions:**

Meaning, Purpose, Advantages and Disadvantages of Transacting Online, E-Commerce Applications in Various Industries Like {Banking, Insurance, Payment of Utility Bills, Online Marketing, E-Tailing (Popularity, Benefits, Problems and Features), Online Services (Financial, Travel and Career), Auctions, Online Portal, Online Learning, Publishing and Entertainment} Online Shopping (Amazon, Snap Deal, Alibaba, Flipkart, etc.)

Introduction to E-Commerce Security Environment, Security Threats in The E-Commerce Environment (Security Intrusions And Breaches, Attacking Methods Like Hacking, Sniffing, Cyber-Vandalism Etc.), Technology Solutions related to networks and (Encryption, Security Channels Of Communication, Protecting Networks And Protecting Servers And Clients)

IV **Unit-IV: Website designing**

Designing a home page, HTML document, Anchor tag Hyperlinks –textual hyperlinks, image hyperlinks document links, Head and body section, Header Section, Title, Prologue, Links, Colorful Pages, Comment, Body Section, Heading Horizontal Ruler, Paragraph, Tabs, Images And Pictures, Lists and Their Types, Nested Lists, Table Handling. Frames: Frameset Definition, Frame Definition, Nested Framesets, Forms and Form Elements.

V **Unit V:** DHTML and Style Sheets

What is DHTML ,Defining Styles, elements of Styles, Properties of styles, linking a style sheet to a HTML Document, Inline Styles, External Style Sheets, Internal Style Sheets &Multiple Style Sheets.formatting blocks of information using css box model, layers.

Course 3C: Programming with C & C++

(Five units with each unit having 12 hours of class work)

Model Outcomes:

At the end of the course, the students is expected to DEMONSTRATE the following cognitive abilities (thinking skill) and psychomotor skills.

B. Remembers and states in a systematic way (Knowledge)

1. Develop programming skills
2. Declaration of variables and constants use of operators and expressions
3. learn the syntax and semantics of programming language
4. Be familiar with programming environment of C and C++
5. Ability to work with textual information (characters and strings) & arrays

C. Explains (Understanding)

6. Understanding a functional hierarchical code organization
7. Understanding a concept of object thinking within the framework of functional model
8. Write program on a computer, edit, compile, debug, correct, recompile and run it

D. Critically examines, using data and figures (Analysis and Evaluation)

9. Choose the right data representation formats based on the requirements of the problem
10. Analyze how C++ improves C with object-oriented features
11. Evaluate comparisons and limitations of the various programming constructs and choose correctone for the task in hand.

D. Working in 'Outside Syllabus *Area' under a Co-curricular Activity*(Creativity)

Planning of structure and content, writing, updating and modifying computer programs for user solutions

E. Exploring C programming and Design C++ classes for code reuse (Practical skills***)

SYLLABUS

Course 3C: Programming with C & C++

Unit	Details
I	**Introduction and Control Structures:** History of 'C' - Structure of C program – C character set, Tokens, Constants, Variables, Keywords, Identifiers – C data types - C operators - Standard I/O in C - Applying if and Switch Statements
II	**Loops And Arrays:** Use of While, Do While and For Loops - Use of Break and Continue Statements - Array Notation and Representation - Manipulating Array Elements - Using Multi Dimensional Arrays
III	**Strings and Functions:** Declaration and Initialization of String Variables - String Handling Functions -Defining Functions - Function Call - Call By Value, Call By Reference – Recursion
IV	**Classes and Objects** Introduction to OOP and its basic features - C++ program structure - Classes and objects - Friend Functions- Static Functions –Constructor – Types of constructors – Destructors - Unary Operators
V	**Inheritance:** Inheritance - Types of Inheritance -Types of derivation- Public – Private - Protected Hierarchical Inheritance - Multilevel Inheritance – Multiple Inheritance - Hybrid Inheritance

Learning Resources (Course 3C: : Programming with C & C++)

References:

(1) E. Balagurusamy "Object oriented programming with C++
(2) R.Ravichandran "Programming with C++"
(3) Mastering C by K R Venugopal and Sudeep R Prasad, McGraw Hill
(4) Expert C Programming: Deep Secrets Kindle Edition Peter van der Linden
(5) Let Us C Yashavant Kanetkar
(6) The C++ Programming Language Bjarne Stroustrup

(7) C++ Primer Stanley B. Lippman, JoséeLajoie, Barbara E. Moo

Online Resources:

https://www.tutorialspoint.com/cprogramming/index.html
https://www.learn-c.org/
https://www.programiz.com/c-programming
https://www.w3schools.in/c-tutorial/
https://www.cprogramming.com/tutorial/c-tutorial.html
https://www.tutorialspoint.com/cplusplus/index.html
https://www.programiz.com/cpp-programminghttp://www.cplusplus.com/doc/tutorial/
https://www.learn-cpp.org/
https://www.javatpoint.com/cpp-tutorial

Practical Component: @ 2 hours/week/batch

1. Write C programs for
   a. Fibonacci Series
   b. Prime number
   c. Palindrome number
   d. Armstrong number.
2. 'C' program for multiplication of two matrices
3. 'C' program to implement string functions
4. 'C' program to swap numbers
5. 'C' program to calculate factorial using recursion
6. 'C++' program to perform addition of two complex numbers using constructor
7. Write a program to find the largest of two given numbers in two different classes using friend function
8. Program to add two matrices using dynamic contructor
9. Implement a class string containing the following functions:
   a. Overload + operator to carry out the concatenation of strings.
   b. Overload == operator to carry out the comparison of strings.
10. Program to implement inheritance.

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

MEASURABLE

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity)
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams)
4. Field studies (individual observations and recordings as per syllabus content and related areas (Individual or team activity)
5. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity))

General

Group Discussion

Visit to Software Technology parks / industries

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted:

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Coding exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports,
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

Course 4E: Object Oriented Programming with Java

Learning Outcomes:

At the end of the course, the student will able to;

- Understanding the meaning and necessity of audit in modern era
- Comprehend the role of auditor in avoiding the corporate frauds
- Identify the steps involved in performing audit process
- Determine the appropriate audit report for a given audit situation
- Apply auditing practices to different types of business entities
- Plan an audit by considering concepts of evidence, risk and materiality

SYLLABUS:

Unit I: Introduction to OOPs:

Problems in Procedure Oriented Approach, Features of Object Oriented Programming Introduction to Java: Features of Java, The Java Virtual Machine (JVM), Parts of Java program, Naming Conventions in Java, Data Types in Java, Operators in Java, Reading Input using scanner Class, Displaying Output using System. out.println (), Command Line Arguments.

Unit II: Control Statements in Java:

if... else, do... while Loop, while Loop, For loop, Switch Statement, break Statement, continue Statement

Arrays: Types of Arrays, array name, length,

Strings: Creating Strings, String Class Methods, String Comparison, Immutability of Strings.

Unit III: Classes and Objects: Object Creation, Initializing the Instance Variables, Access Specifiers, Constructors

Inheritance: Inheritance, Types of Inheritance

Polymorphism: Method overloading, Operator overloading

Abstract Classes: Abstract Method and Abstract Class

Unit IV: Packages: Package, Different Types of Packages, Creating Package and Accessing a Package Streams: Stream classes, Creating a File using File Output Stream, Reading Data from a File using File Input Stream, Creating a File using File Writer, Reading a File using File Reader

Unit V: Exception Handling: Errors in Java Program, Exceptions, throws Clause, throw Clause, Types of Exceptions

Threads: Single Tasking, Multi-Tasking, Uses of Threads, Creating a Thread and Running it, Terminating the Thread, Thread Class Methods.

References:

1. The Complete Reference JAVA Seventh Edition Herbert Schildt. Tata McGraw Hill Edition.
2. Core Java: An Integrated Approach, Dr. R. Nageswara Rao &Kogent Learning Solutions Inc.
3. E. Balaguruswamy, Programming with JAVA, A primer, 3e, TATA McGrawHill Company

Online Resources:

https://stackify.com/java-tutorials/
https://www.w3schools.com/java/
https://www.javatpoint.com/java-tutorial
https://www.tutorialspoint.com/java/index.html

Practical Component:@ 2 hours/week/batch

1. Write a program to implement command line arguments.
2. Write a program to read Student Name, Reg.No, Marks and calculate Total, Percentage,and Result. Display all the details of students .
3. Write a program to perform String Operations.
4. Java program to implement Addition of two N X N matrices.
5. Java program to implement bubble sort.
6. Java program to demonstrate the use of Constructor.
7. Calculate area of the following shapes using method overloading.
   a.Rectangle b. Circle c. Square
8. Implement multilevel inheritance
9. Java program for to display Serial Number from 1 to 5 by creating two Threads
10. Java program to demonstrate the following exception handlings
    a. Divided by Zero b. Array Index Out of Bound c. Arithmetic Exception

SYLLABUS

Course 4F: Database Management System

Unit	Details
I	**Overview of Database Management System** Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management System, Classification of Database Management System.
II	**File-Based System** File Based System. Drawbacks of File-Based System, DBMS Approach, Advantage of DBMS, Data Models, Components of Database System, Database Architecture, DBMS Vendors and their products.
III	**Entity-Relationship Model:** Introduction, The Building Blocks of an Entity-Relationship, Classification of Entity Set, Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, Aggregation and Composition, CODD's Rules, Relational Data Model, Concept of Relational Integrity.
IV	**Structured Query Language** Introduction, History of SQL Standards, Commands in SQL, Data types in SQL, Data Definition Language (DDL),Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.
V	**PL/SQL:** Introduction, Structure of PL/SQL,PL/SQL Language Elements, Data Types, Control Structure, Steps to Create a PL/SQL Program, Iterative Control Cursors, Steps to Create a Cursor, Procedure, Functions, Packages, Exceptions Handling, Database Triggers, Types of triggers.

Learning Resources (Course 4F: Database Management System)

References:

1. Paneerselvam:Database Management system,PHI.
2. David Kuklinski, Osborne, Data management system McGraw Hill Publication.
3. Shgirley Neal And Kenneth LC Trunik Database management system in Business-PHI.
4. Godeon C. EVEREST, Database Management-McGraw Hill Book Company.
5. MARTIN,Database Management-Prentice Hall of India, New Delhi.
6. BipinC.Desai ,`An Introduction to Database System`,Galgotia Publications
7. Korth, Database Management System.
8. Navathe, Database Management System.
9. S. Sumathi, S. Esakkirajan,Fundamentals of Relational Database Management System

Online resources:

http:// www.onlinegdb.com/
http:// www.tutorialspoint.com/
http://learnsql.com
https://www.codecademy.com/learn/learn-sql/
https://www.w3schools.com/sql/default.asp

Practical Component: @ 2 hours/week/batch

1. Create tables department and employee with required constraints.
2. Initially only the few columns (essential) are to be added. Add the remaining columns separately by using appropriate SQL command.
3. Basic column should not be null
4. Add constraint that basic should not be less than 5000.
5. Calculate hra, da, gross and net by using PL/SQL program.
6. The percentage of hra and da are to be stored separately.
7. When the da becomes more than 100%, a message has to be generated and with user permission da has to be merged with basic.
8. Empno should be unique and has to be generated automatically.

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity)
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams)
4. Field studies (individual observations and recordings as per syllabus content and related areas (Individual or team activity)
5. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity)

General

3. Group Discussion
4. Visit to Software Technology parks / industries

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted:

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Coding exercises,
4. Practical assignments and laboratory reports,
5. Observation of practical skills,
6. Individual and group project reports,
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations,
10. Peers and self-assessment, outputs form individual and collaborative work

Skill Enhancement Courses (SECs) for Semester V

Pair Options of SECs for Semester–V

(To choose One pair from the Four alternate pairs of SECs)

Univ. Code	Course NO.6&7	Name of Course	Hrs. / Week	Max Marks IE	Max Marks EE	Credits
	6A	Big data Analytics using R	5	25	75	4
	7A	Data Science using Python	5	25	75	4
		OR				
	6B	Mobile application development	5	25	75	4
	7B	Cyber security and malware analysis	5	25	75	4
		OR				
	6C	E– commerce application development	5	25	75	4
	7C	Real time governance system (RTGS)	5	25	75	4
		OR				
	6D	Multimedia Tools and Applications	5	25	75	4
	7D	Digital imaging	5	25	75	4

Note-1: For Semester–V, for the domain subject Computer Applications, any one of the above four pairs of SECs shall be chosen as courses 6 and 7, i.e., 6A & 7A or 6B & 7B or 6C& 7C or 6D & 7D.The pair shall not be broken (ABCD allotment is random, not on any priority basis).

Note-2: One of the main objectives of Skill Enhancement Courses (SEC) is to inculcate practical skills related to the domain subject in students. The syllabus of SEC will be partially skill oriented. Hence, teachers shall also impart practical training to students on the skills embedded in syllabus citing related real field situations.

Note-3: Since, the proposed SECs are connected to Computer Programming/Software Tools and Skill enhancement, the students need to get exposure on the syllabus content by practicing on the computer even though there is no formal assignment of credits and laboratory hours for practical sessions. So, as part of the Co-curricular activities and continuous assessment, students should be engaged in practicing on computer for at least 15 hours per subject/course.

Course-6A: BIGDATA ANALYTICS USING R

Learning Outcomes:

- Upon successful completion of the course, a student will be able to:
- Understand data and classification of digital data.
- Understand Big Data Analytics.
- Load data in to R.
- Organize data in the form of R objects and manipulate them as needed.
- Perform analytics using R programming.

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

Unit – 1:Introduction to Big data (12 h)

Data, classification Of Digital Data--structured, unstructured, semi-structured data, characteristics of data, evaluation of big data, definition and challenges of big data, what is big data and why to use big data ?, business intelligence Vs big data.

Unit – 2: Big data Analytics (10 h)

What is and isn't big data analytics? Why hype around big data analytics? Classification of analytics, top challenges facing big data, importance of big data analytics, technologies needed to meet challenges of big data.

Unit – 3: Introduction to R and getting started with R (13h)

What is R? Why R? , advantages of R over other programming languages, Data types in R-logical, numeric, integer, character, double, complex, raw, coercion, ls() command, expressions, variables and functions, control structures, Array, Matrix, Vectors, R packages.

Unit – 4: Exploring data in R (13h)

Data frames-data frame access, ordering data frames, R functions for data frames dim(), nrow(), ncol(), str(), summary(), names(), head(), tail(), edit() .Load data frames—reading from .CSV files, sub setting data frames, reading from tab separated value files, reading from tables.

Unit – 5: Data Visualization using R (12h)

Reading and getting data into R (External Data): XML files, Web Data, JSON files, Databases, Excel files.

Working with R Charts and Graphs: Histograms, Bar Charts, Line Graphs, Scatterplots, Pie Charts

BOOKS

Seema Acharya , Subhashini Chellappan --- Big Data And Analytics second edition, Wiley

Seema Acharya--Data Analytics using R, McGraw Hill education (India) Private Limited.

Big Data Analytics, Introduction to Hadoop, Spark, and Machine-Learning, Raj kamal, Preeti Saxena, McGraw Hill, 2018.

Big Data, Big Analytics: Emerging Business intelligence and Analytic trends for Today's Business, Michael Minelli, Michelle Chambers, and Ambiga Dhiraj, John Wiley & Sons,2013

Reference Books:

1. An Introduction to R, Notes on R: A Programming Environment for Data Analysis and Graphics. W. N. Venables, D.M. Smith and the R Development Core Team

Course-6A: Big Data Analytics Using R Lab (Practical) Syllabus (15 Hrs.)

1. Create a vector in R and perform operations on it.
2. Create integer, complex, logical, character data type objects in R and print their values and their class using print and class functions.
3. Write code in R to to demonstrate sum(), min(), max() and seq() functions.
4. Write code in R to manipulate text in R using grep(), toupper(), tolower() and substr() functions.
5. Create data frame in R and perform operations on it.
6. Import data into R from text and excel files using read.table () and read.csv () functions.
7. Write code in R to find out whether number is prime or not.
8. Print numbers from 1 to 100 using while loop and for loop in R.
9. Write a program to import data from csv file and print the data on the console.
10. Write a program to demonstrate histogram in R.

Note: The list of experiments need not be restricted to the above list. Detailed list of Programming/software tool based exercises can be prepared by the concerned Faculty members.

Course-7A: DATA SCIENCE USING PYTHON:

Learning Outcomes:

- Upon successful completion of the course, a student will be able to:
- Understand basic concepts of data science
- Understand why python is a useful scripting language for developers.
- Use standard programming constructs like selection and repetition.
- Use aggregated data (list, tuple, and dictionary).
- Implement functions and modules.

Syllabus : (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

Unit – 1: Introduction to data science (12h)

Data science and its importance, advantages of data science, the process of data science, Responsibilities of a data scientist, qualifications of data scientists, would you be a good data scientist, why to use python for data science.

Unit – 2: Introduction to python (14h)

What is python , features of python, history of python, writing and executing the python program, basic syntax, variables, keywords, data types ,operators ,indentation, Conditional statements-if, if-else, nested if-else, looping statements-for, while, break, continue, pass

Unit – 3: Control structures and strings (10h)

Strings - definition, accessing, slicing and basic operations

Lists - introduction, accessing list, operations, functions and methods,

Tuples - introduction, accessing tuple

Dictionaries - introduction, accessing values in dictionaries

Unit – 4: Functions and modules (13h)

Functions - defining a function, calling a function, types of functions, function arguments, local and global variables, lambda and recursive functions, Modules- math and random

Unit-5: Classes & Objects (11h)

Classes and Objects, Class method and self-argument, class variables and object variables, public and private data members, private methods, built-in class attributes, static methods.

Reference Books:

1. Steven cooper--- Data Science from Scratch, Kindle edition
2. Reemathareja—Python Programming using problem solving approach, Oxford Publication

Course-7A: Data Science Using Python; Lab (Practical) Syllabus (15 Hrs.)

1. Python Program to Find the Square Root
2. Python Program to Swap Two Variables
3. Python Program to Generate a Random Number
4. Python Program to Check if a Number is Odd or Even
5. Python Program to Find the Largest Among Three Numbers
6. Python Program to Check Prime Number
7. Python Program to Display the multiplication Table
8. Python Program to Print the Fibonacci sequence
9. Python Program to Find the Sum of Natural Numbers
10. Python Program to Find Factorial of Number Using Recursion
11. Python Program to work with string methods.
12. Python Program to create a dictionary and print its content.
13. Python Program to create class and objects.

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned Faculty members.*

Max Marks: 100

Course-**6B: MOBILE APPLICATION DEVELOPMENT**

Learning Outcomes:

Upon successful completion of the course, a student will be able to:

1. Identify basic terms ,tools and software related to android systems
2. Describe components of IDE, understand features of android development tools
3. Describe the layouts and controls
4. Explain the significance of displays using the given view
5. Explain the features of services and able to publish android Application
6. Developing interesting Android applications using MIT App Inventor

Unit-1:(Total hours: 75 including Theory, Practical, Training, Unit tests etc.) 10 Hrs

1.1Introduction to Android ,open headset alliance, Android Ecosystem

1.2Need of Android

1.3Features of Android

1.4Tools and software required for developing an Application

Unit-2: 13Hrs

2.1operating system, java JDK, Android SDK

2.2Android development tools

2.3Android virtual devices

2.4steps to install and configure Android studio and sdk

2.5Android activities

Unit-3: 14Hrs

3.1 control flow, directory structure

3.2 components of a screen

3.3 fundamental UI design

3.4 linear layout, absolute layout , table layout

3.5 text view

3.6 edit text

3.7 button, image button, radio button

3.8 radio group, check box, and progress bar

3.9 list view, grid view, image view, scroll view

3.10 time and date picker

3.11 toast

Unit-4: 10Hrs

4.1 android platform services

4.2 Android system Architecture

4.3 Android Security model

Unit-5 **13Hrs.**

5.1 Introduction of MIT App Inventor

5.2ApplicationCoding

5.3Programming Basics & Dialog

5.4Audio& Video File

Text Books:

1. Erik Hellman, "Android Programming – Pushing the Limits", 1st Edition, Wiley India Pvt Ltd, 2014.
2. App Inventor: create your own Android apps by Wolber, David (David Wayne)

Reference Books:

1. Dawn Griffiths and David Griffiths, "Head First Android Development", 1st Edition, O'Reilly SPD Publishers, 2015.
2. J F DiMarzio, "Beginning Android Programming with Android Studio", 4th Edition, Wiley India Pvt Ltd, 2016. ISBN-13: 978-8126565580
3. Anubhav Pradhan, Anil V Deshpande, " Composing Mobile Apps" using Android, Wiley 2014, ISBN: 978-81-265-4660-2
4. Android Online Developers Guide
5. http://developer.android.com/reference/ Udacity: Developing Android
6. Apps- Fundamentals
7. https://www.udacity.com/course/developing-android-appsfundamentals--ud853-nd
8. http://www.appinventor.mit.edu/

Course-6B**: Mobile Application Development: Lab (Practical) Syllabus (15 Hrs.)**

Outcomes:

1. Understand the android platform
2. Design and implementation of various mobile applications

Experiments:

1. Demonstrate mobile technologies and devices
2. Demonstrate Android platform and applications overview
3. Working with texts , shapes, buttons and lists
4. Develop a calculator application
5. Implement an application that creates a alarm clock

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

Course-**7B**: **CYBER SECURITY AND MALWARE ANALYSIS**

(Skill Enhancement Course (Elective), 4 credits)

COURSE OUTCOMES:

Upon successful completion of this course, students should have the knowledge and skills to

1. Understand the computer networks, networking tools and cyber security
2. Learn about NIST Cyber Security Framework
3. Understand the OWASP Vulnerabilities
4. Implement various Malware analysis tools
5. Understand about Information Technology act 2000

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

UNIT 1: Introduction to Networks & cyber security 14hrs

- Computer Network Basics
- Computer network types
- OSI Reference model
- TCP/IP Protocol suite
- Difference between OSI and TCP/IP
- What is cyber, cyber-crime and cyber-security
- All Layer wise attacks
- Networking devices: router, bridge, switch, server, firewall
- How to configure: router
- How to create LAN

UNIT 2: NIST Cyber security framework 12hrs

- Introduction to the components of the framework
- Cyber security Framework Tiers
- What is NIST Cyber security framework

- Features of NIST Cyber security framework
- Functions of NIST Cyber security framework
- Turn the NIST Cyber security Framework into Reality/ implementing the framework

UNIT 3: OWASP 12hrs

- What is OWASP?
- OWASP Top 10 Vulnerabilities
    - ❖ Injection
    - ❖ Broken Authentication
    - ❖ Sensitive Data Exposure
    - ❖ XML External Entities (XXE)
    - ❖ Broken Access Control
    - ❖ Security Misconfiguration
    - ❖ Cross-Site Scripting (XSS)
    - ❖ Insecure Deserialization
    - ❖ Using Components with Known Vulnerabilities
    - ❖ Insufficient Logging and Monitoring
- Web application firewall

UNIT 4: MALWARE ANALYSIS 12hrs

- What is malware
- Types of malware
    - ❖ Key loggers
    - ❖ Trojans
    - ❖ Ran some ware
    - ❖ Rootkits
- Antivirus
- Firewalls

- Malware analysis
    - ❖ VM ware
    - ❖ How to use sandbox
    - ❖ Process explorer
    - ❖ Process monitor

UNIT 5: CYBER SECURITY: Legal Perspectives 10hrs

- Cybercrime and the legal landscape around the world
- Indian IT ACT 2000 --Cybercrime and Punishments
- Challenges to Indian law and cybercrime scenario in India

Textbooks:

1. Computer Networks | Fifth Edition | By Pearson (6th Edition)|Tanenbaum, Feamster & Wetherill
2. Computer Networking | A Top-Down Approach | Sixth Edition | By Pearson | Kurose James F. Ross Keith W.
3. Cyber Security by Sunit Belapure, Nina Godbole|Wiley Publications
4. TCP/IP Protocol Suite |Mcgraw-hill| Forouzan|Fourth Edition

Website References:

- https://csrc.nist.gov/Projects/cybersecurity-framework/nist-cybersecurity-framework-a- quick-start-guide
- https://owasp.org/www-project-top-ten/
- https://owasp.org/www-project-juice-shop/

Course-7B: Cyber Security and Malware Analysis; Lab (Practical) Syllabus (15 Hrs.)

Experiments:

1. Configure a LAN by using a switch
2. Configure a LAN by using Router

3. Perform the packet sniffing mechanism by download the “wire shark” tool and extract the packets

4. Perform an SQL Injection attack and its preventive measure to avoid Injection attack

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

Course Code: Max Marks: 100

Course-**6C**: **E– COMMERCE APPLICATION DEVELOPMENT**

(Skill Enhancement Course (Elective), 4 credits)

Learning Outcomes:

Upon successful completion of the course, a student will be able to:

1. To apply in an integrative and summative fashion the students' knowledge in all fields of business studies by drafting a website presence plan.
2. To understand the factors needed in order to be a successful in ecommerce
3. To gain the skills to bring together knowledge gathered about the different components of building a web presence
4. To critically think about problems and issues that might pop up during the establishment of the web presence
5. To apply Word Press as a content management system (CMS), Plan their website by choosing colour schemes, fonts, layouts, and more

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

Unit-1: (10h)

Introduction to E– commerce: Meaning and concept – E– commerce,E– commerce v/s Traditional Commerce,E– Business & E– Commerce – History of E– Commerce,EDI – Importance, features & benefits of E– Commerce,Impacts, Challenges & Limitations of E– Commerce

Unit-2: (12h)

Business models of E – Commerce: Business to Business

2.1.2 Business to customers 2.1.3Customers to Customers

2.1.4 Business to Government

2.1.5 Business to Employee

2.2Influencing factors of successful E– Commerce

2.3Architectural framework of Electronic Commerce

2.4Web based E Commerce Architecture.

2.5Internet Commerce

Unit-3: (12h)

3.1 Electronic data Interchange

3.2 EDI Technology

3.3 EDl- Communications

3.4 EDI Agreements

3.5 E– Commerce payment system.

3.6 Digital Economy

Unit -4: (13h)

4.1 A Page on the web - HTML Basics

4.2 Client Side scripting -JAVA SCRIPT basics

4.3 Server side Scripting- PHP basics.

Unit-5: (13h)

5.1 Logging in to Your Word press Site

5.2 word press dash board

5.3 creating your first post

5.4 adding photos and images

5.5 creating hyper link

5.6 adding categories and tags

Textbooks:

1. Turban, Rainer, and Potter, Introduction to E-Commerce, second edition, 2003
2. H. M. Deitel, P. J. Deitel and T. R. Nieto, E-Business and E-Commerce: How to Programe, Prentice hall, 2001
3. WordPress All-in-One For Dummies -written by Lisa Sabin Wilson with contributions by Michael Torbert, Andrea Rennick, Cory Miller, and Kevin Palmer

Reference Books:

1. Elias. M. Awad, “Electronic Commerce", Prentice-Hall of India Pvt Ltd.
2. Ravi Kalakota, Andrew B. Whinston, "Electronic Commerce-A Manager's guide", Addison-Wesley
3. https://w3cschools.com
4. David Whiteley, E-Commerce: Strategy, Technologies and Applications, Tata McGraw Hill.

Course-6C: E– Commerce Application Development; Lab (Practical) Syllabus (15 Hrs)

Case study of e –commerce

1. Home page design of web site
2. Validation using PHP
3. Implement Catalogue design
4. Implement Access control mechanism(eg: username and password)
5. Case study on business model of online E-Commerce store

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

Course Code: Max Marks: 100

Course-**7C: REAL TIME GOVERNANCE SYSTEM (RTGS)**

(Skill Enhancement Course (Elective), 4 credits)

COURSE OUTCOMES:

Upon successful completion of this course, students will have the knowledge and skills to

1. Understand the terms regarding Governance, E-Governance and RTGS
2. Learn about E-Governance Infrastructure
3. Understand the E-Governance implementation in several countries
4. Understand the E-Governance implementation in several Indian states
5. Understand the applications of RTG

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

UNIT 1: Introduction to E-Governance 12hrs

- Government, Governance and Good Governance
- What is E-Governance or Electronic Governance?
- E-Government and E-Governance: A conceptual Analysis
  - ❖ Objectives
  - ❖ Components
  - ❖ application domains
  - ❖ four phase model
  - ❖ implementing E-Governance
  - ❖ issues while implementing E-Governance
  - ❖ Opportunities and challenges
- Types of E-Governance
- What is Real-Time Governance (RTG)

- Real Time Governance Society (RTGS)

UNIT 2: E-Governance Infrastructure 14hrs

- Data Systems infrastructure
  - ❖ Executive Information Systems
  - ❖ Management Information Systems
  - ❖ Knowledge Management Systems
  - ❖ Transaction Processing Systems
- Legal Infrastructural preparedness
  - ❖ IT Act 2000
  - ❖ Challenges to Indian law and cybercrime scenario in India
  - ❖ Amendments of the Indian IT Act
- Institutional Infrastructural preparedness
  - ❖ Internet
  - ❖ intranet
  - ❖ extranet
- Human Infrastructural preparedness
  - ❖ Top-level management
  - ❖ Middle-level management
  - ❖ Low-level management
- Technological Infrastructural preparedness
  - ❖ Information and communications technology
  - ❖ Data Warehousing
  - ❖ Cloud Computing

UNIT 3: E-Governance: Country Experience 12hrs

- INDIA
- US
- UK
- AUSTRALIA
- DUBAI

UNIT 4: E-Governance in India 12hrs

- Andhra Pradesh
- Karnataka
- Kerala
- Uttar Pradesh
- Madhya Pradesh
- West Bengal
- Gujarat

UNIT 5: Latest Applications in Real Time Governance 10hrs

- Agriculture
- Rural Development
- Health care
- Education
- Tourism
- Commerce and Trade

Textbooks:

1. E-Governance: concepts and case studies| CSR Prabhu| Prentice-Hall|
2. E-Governance| Niranjanpani, Sanhari Mishra | Himalaya Publishing House

Website References:

1. http://www.egov4dev.org/success/case/
2. https://vikaspedia.in/e-governance/resources-for-vles
3. https://altametrics.com/en/information-systems/information-system-types.html
4. https://core.ap.gov.in/CMDashBoard/Index.aspx

Course-7C: Real Time Governance System (RTGS); Lab (Practical) Syllabus (15 Hrs)

Note: Here the students have to gather the details in computer lab by surfing several websites & Google Search Engines and submit the report to the class/lab instructor before leaving the lab.

Week 1: Write a Report on the role of Nationwide Networking in E-Governance

Week 2: Write a Report on SETU: A Citizen Facilitation Centre in India, regarding it's successful or failure journey.

Week 3: Write a Report on National Cyber Security Policy, how it is useful to Indian citizens. Week 4: Write a Report on mee-seva/Village Secretariat/Ward secretariat, a new paradigm in citizen services.

Week 5: Write a Report on how Andhra Pradesh is implementing RTGS in Agriculture. Week 6: Write a Report on how Andhra Pradesh is implementing RTGS in social welfare schemes

Week 7: Write a Report on how Andhra Pradesh is implementing RTGS in waste lands, agricultural lands and house properties.

Week 8: Write a Report on Electronic Birth Registration in any one state of our country.

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

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Course Code: Max Marks: 100

Course-**6D: MULTIMEDIA TOOLS AND APPLICATIONS**

(Skill Enhancement Course (Elective), 4 credits)

Learning Outcomes:

Upon successful completion of the course, a student will be able to:

1. Gain knowledge on the concepts related to Multimedia.
2. Understand the concepts like image data representation and colour modes.
3. Understand the different types of video signals and digital audio.
4. Know about multimedia data compression types and audio compression standards
5. Know about basic video compression techniques.

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

Unit-1: Introduction to multimedia: 12Hr

1. What is Multimedia?
2. Components of Multimedia System
3. Multimedia and Hypermedia
4. Multimedia Authoring metaphors
5. Multimedia Production
6. Multimedia Presentation
7. Some Technical Design Issues
8. Automatic Authoring

Unit-2: Image Data Representations and color models: 12Hr

1. Color science Human vision Image data types:
2. 2.Black & white images

1-bit images (Binary image)

8 -bit (Gray -level images)

3. Color images

24-bit color images

8-bit color images

4. Color models

Unit-3: Fundamental concepts in video:12Hr

1. Types of Video Signals

Analog Video

Digital Video

Basics of Digital Audio:

2. What is Sound?

Digitization of Sound

Quantization and Transmission of Audio

Pulse code modulation

Differential coding of audio

Predictive coding

Unit-4:

Multimedia Data Compression: 13Hr

1. Introduction

Basics of Information Theory

Lossless Compression Algorithms

Fix-Length Coding

Run-length coding

1.2.4 Dictionary-based coding

Variable Length Coding

Huffman Coding Algorithm

Audio Compression standards:

2. Introduction

Psychoacoustics model

MPEG Audio

Unit-5: Basic Video Compression Techniques: 11Hr

1. Introduction to Video compression
2. Video compression standard H.261
3. Video compression standard MPEG-1

Text Books:

Fundamentals of Multimedia by Ze-Nian Li & Mark S. Drew. Publisher: Prentice Hall

Reference Books:

1. An introduction to digital multimedia by Savage, T. M. and Vogel, K. E. 2008.
2. Digital Multimedia by Nigel Chapman & Jenny Chapman. 2009. **Online Resources**: https://ksuit342.wordpress.com/lectuers/ https://www.tutorialspoint.com/multimedia

Suggested Software

1) Image Editing – GIMP
2) Audio Editing – Audacity
3) Video Editing – video pad
4) NCH software tools.

Course-6D**: Multimedia Tools and Applications; Lab (Practical) Syllabus (15 Hrs.)**

1. Editing images using GIMP
2. Improve the Quality of your Image in GIMP
3. Create an impressive background in GIMP
4. Applying Shadow & Highlight effects in images
5. Black& white and color photo conversion.

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

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Course Code: Max Marks: 100

Course-**7D: DIGITAL IMAGING**

(Skill Enhancement Course (Elective), 4 credits)

Learning Outcomes:

Upon successful completion of the course, a student will be able to:

1. Gain knowledge about Types of Graphics, Types of Objects and Types of video editing tools
2. Show their skills in editing and altering photographs for through a basic understanding of the tool box.
3. Gain knowledge in using the layers.
4. Gain knowledge in using the selection tools, repair tools.
5. Gain knowledge in using selection tools, applying filters and can show their skills.

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

UNIT-I 12 Hrs

1. Types of Graphics

1.1Raster vs Vector Graphics

2. Types of Objects

2.1Audio formats

2.2Video formats

2.3Image formats

2.4Text document formats

3. Types of video editing

4. Different color modes.

5. Image Scanner

5.1Types of Image Scanners

UNIT-II 12 Hrs

1. What is GIMP?

2. GIMP tool box window

3. Layers Dialog

4. Tool Options Dialog

5. Image window

6. Image window menus

UNIT-III 12 Hrs

Improving Digital Photos

1.Opening files

2.Rescaling saving files

3.Cropping

4.Brightening & Darkening

5.Rotating

6.Sharpening

Introduction to layers

1.What is layer?

2.Using layer to add text

3.Using move tool

4.Changing colors

5.Simple effects on layers

6. Performing operations on layers 7. Using layers to copy and paste

UNIT-IV12 Hrs

Drawing:

Drawing lines and curves

Changing colors and brushes

Erasing

Drawing rectangles, Circles and other shapes

Outlining and filling regions

Filling with patterns and gradients

Selection:

Working with selections

Select by color and fuzzy

Select Bezier paths

2.5 Modifying selections with selection modes

UNIT-V 12 Hrs

Erasing and Touching Up:

1.1 Dodge and burn tool

Clone tool

Sharpening using convolve tool

Correcting Color Balance

Filters:

Filters

Blur

Enhance

Noise Filters

References:

Textbook: Beginning GIMP from Novice to professional by Akkana Peck, Second Edition, Apress

Course-7D**: DIGITAL IMAGING; Lab (Practical) Syllabus (15 Hrs.)**

1. Designing a Visiting card
2. Design Cover page of a book
3. Paper add for calling tenders
4. Design a Pamphlet
5. Brochure designing
6. Titles designing
7. Custom shapes creation
8. Image size modification
9. Background changes
10. Texture and patterns designing

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)

2. Student seminars (on topics of the syllabus and related aspects (individual activity))

3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups a steams))

4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity

B. General

1. Group Discussion

2. Try to solve MCQ's available online.

3. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports.
5. Observation of practical skills,
6. Individual and group project reports like "Creating Text Editor in C".
7. Efficient delivery using seminar presentations,
8. Viva voce interviews.
9. Computerized adaptive testing, literature surveys and evaluations, Peers and self-assessment, outputs form individual and collaborative work

Govt. College for Women(Autonomous),Srikakulam

I B.Com, Computer Applications

Semester-I Blue Print

<<Paper Title>>

Subject: <<Paper Title>> **Paper: <<No>>**

Time: 3 hrs **Marks:75M**

Model Blue print for the question paper setter

Chapter name	Essay Questions 10 Marks	Short Questions 5 Marks	Marks allotted to the chapter
UNIT-I	2	2	30
UNIT-II	2	2	30
UNIT-III	2	2	30
UNIT-IV	2	2	30
UNIT-V	2	2	30
Total no. of questions	10	10	20
Total Marks Including Choice	100	50	150

GOVERNMENT COLLEGE FOR WOMEN(Autonomous) Srikakulam

B.COM(ComputerApplications)

I YEAR I SEMESTER

(w.e.f. 2020-21 admitted batch)

Information Technology

Model Paper

Maximum Marks: 75 Time: 3 Hours

Section – A

II. Answer any FIVE questions (5x10=50)

1. (a) Explain the block diagram of a computer.

(OR)

(b) Explain various types of input devices .

2. (a) Explain the process of mail merge in word processing.

(OR)

(b) What are the parts of MS –Word Window ?Explain.

3. (a) List various types of functions in Excel and explain

(OR)

(b) How to create a Macro and Run it. Explain how to delete a Macro with an example?

4. (a) Explain the parts of powerpoint window

(OR)

(b) Explain the process of inserting an object in the powerpoint presentation.

5. (a) How to query a database in MS-Access.

(OR)

(b) How to create a Form using form wizard.

Section – B

I. Answer any FIVE questions (5x5=25)

6. What is a computer? Explain its characteristics
7. Briefly write about primary memory and its types.
8. How to insert headers and footers in MS-Word?
9. Explain various editing options in MS- Word?
10. Write about various cell referencing techniques available in Excel
11. What is autofill and custom fill?
12. What is custom animation
13. How to insert and delete a slide.
14. How to create a table in MS-Access
15. What are the parts of reports in Access

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GOVERNMENT COLLEGE FOR WOMEN(Autonomous) Srikakulam

B.COM(ComputerApplications)

I YEAR II SEMESTER

(w.e.f. 2020-21 admitted batch)

E-commerce and Web Designing Model Paper

Maximum Marks: 75 Time: 3 Hours

Section – A

I. Answer any FIVE questions (5x10=50)

1. (a) Write about various E-Commerce business models

(OR)

(b) Explain the steps involved in Designing, Building and Launching e-commerce website.

2. (a) Write about the types of E-Payment systems.

(OR)

(b) Explain the features of online Banking.

3. (a) Write about various security threats in E-Commerce environment

(OR)

(b) Explain business model for developing an online shopping website

4. (a) Write html code showing the usage of various form elements .

(OR)

(b) Create a webpage in the following manner

BOOKS

S.No	Name	Author	Price
1.	WorldWideWeb	Dietel	400
2.	C-Programming	Balaguruswamy	300
3.	Database Management Systems	Date&Navathe	500
4.	Java	HerbertSheildt	450
TOTAL			1650

5. (a) Write about CSS Box Model.

(OR)

(b) Write about various ways of applying styles to a webpage with suitable examples

Section – B

I. Answer any FIVE questions (5x5=25)

6. Define E-Commerce and write about features of E-commerce
7. What are the advantages and disadvantages of online transactions
8. What are the features of WWW and internet
9. What are the risks involved in E-payment
10. What is E-Tailing and what are its benefits
11. Write the procedure for creation of digital signatures.
12. What is a hyperlink? How to create hyperlinks using HTML?
13. Write about various types of lists that can be created using HTML
14. Write about any two types of selectors used for applying styles to HTML elements
15. How to create layers using CSS

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GOVERNMENT COLLEGE FOR WOMEN(Autonomous) Srikakulam

B.COM(ComputerApplications)

II YEAR III SEMESTER

(w.e.f. 2020-21 admitted batch)

Programming with C & C++Model Paper

Maximum Marks: 75 Time: 3 Hours

Section – A

I. Answer all FIVE questions (5x10=50)

1. (a). Explain in detail about the various operators available in C language.

   (OR)

   (b)Explain the purpose of if-else and switch statements in Cwith examples.

2. (a) Explain the purpose of various loop statements avaliable in C

   (OR)

   (b) Define array. Explain declaration, initialization and accessing arrays

3. (a) Explain in detail about any five string handling functions

   (OR)

   (b) Define Function. List and explain different types of functions

4. (a) List and explain the various OOP features

   (OR)

   (b) Define a constructor and explain the different types of constructors

5. (a) Explain in detail about inheritance in C++

   (OR)

   (b)Explain the purpose of public-private and protected in C++

Section – B

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II. Answer any FIVE questions (5x5=25)

6. Explain the structure of a C program.
7. Explain various datatypes available in C .
8. Differentiate break and continue
9. Write the syntax for declaring multi-dimensional arrays
10. Explain about call by value with an example
11. Explain recursion with an example
12. What is a friend function in C++
13. Explain Method overloading
14. Explain about types of derivation
15. Differentiate between hierarchical and hybrid inheritance

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Govt. College for Women(Autonomous),Srikakulam
II B.Com(CA) Semester-IV
Academic Year : 2021-2022

Subject: Object Oriented Programming with Java **Paper: C4**

Model Paper

Maximum Marks: 75 Time: 3 Hours

Section – A

I. Answer any FIVE questions (5x10=50)

1. (a)Explain about different data types inJava.
   (OR)
   (b)Explain about Javaoperators.

2. (a)Explain the different ways of creating, initializing and accessing arrays in Java
   (OR)
   (b)Define String. Discuss the way of creating Strings. Explain different String Class Methods

3. (a)Define Constructor. Explain different types of constructors in java.
   (OR)
   (b) Explain with examples different types of Inheritance in java

4. (a)Explain how to create package and access a package.
   (OR)
   (b) Explain how to read data from a file using File Input Stream.

5. (a) What is an Exception? Explain how to create a user defined exception.
   (OR)
   (b) Explain creation ,running and terminating of a Thread

Section – B

II. Answer any FIVE questions **(5x5=25)**

6. Explain about features ofJava.
7. Explain different ways of reading input in a Java Program
8. Distinguish break and continue
9. Explain any one loop statement available in Java with an example
10. Define Class and Object. Explain how to createobjects in java.
11. Explain Method overloading with an example.
12. Define Package.What are different types of Packages.
13. Explain how to read a file using File Reader
14. Explain different types of Exceptions
15. Explain Thread Life Cycle

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GOVERNMENT COLLEGE FOR WOMEN(Autonomous), SRIKAKULAM

B.COM(ComputerApplications)

II YEAR IV SEMESTER

(w.e.f. 2020-21 admitted batch)

DATABASE MANAGEMENT SYSTEM

Model Paper

Maximum Marks: 75 Time: 3 Hours

Section – A

I. Answer the following questions (5x10=50)

1. (a) Classify DBMS and Explain.

   (OR)

   (b) Write about the objectives of DBMS.

2. (a) Explain the Various components of DBMS

   (OR)

   (b) What are the drawbacks of File management systems.

3. (a) Explain about Generalization and Specialization along with their constrains? Give examples

   (OR)

   (b) What is normalization? Explain about various normal forms with examples

4. (a) Explain about various DDL commands.

   (OR)

   (b) Explain about set operations available in relational model.

5. (a) What are cursors? Explain the procedure for creation of cursors.

   (OR)

   (b) What are the uses of triggers? Explain various types of triggers supported by DBMS

Section – B

II. Answer any FIVE questions (5x5=25)

6. Define the terms Data, information, and Database management system. Give example for each of them.
7. Write about hierarchical and network data models
8. What is data Independence?
9. Write about the characteristics of relational data model.
10. Classify the relationships based on degree? Give an example for each of the types
11. What are the data types supported by SQL?
12. What are aggregate functions? Specify the aggregate functions supported by SQL.
13. Explain the structure of PL/SQL program.
14. What is a Procedure? Write about the parameters supported by the procedures in PL/SQL.
15. What is data dictionary? Explain .

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Government College forWomen(Autonomous)Srikakulam

Reaccredited by NAAC with 'A' Grade during 3rd Cycle (CGPA 3.09)

RESOLUTIONS/MINUTES OF BOARD OF STUDIES MEETING HELD ON 10TH OCTOBER,2022

1. It is resolved to adapt CBCS system for all 6 Semesters.
2. It is resolved to adapt the syllabus framed by APSCHE.
3. It is resolved to approve and ratify the first ,second and third year syllabus of the Computer Science Degree for 2022-23 admitted batch .
4. It is resolved to introduce Community Service Project and Internship of total 10 months duration from 2020-21 admitted batch.
5. It is resolved to approve and ratify the model question papers submitted by the concerned faculty members for all the semesters. The evaluation of internal will be done for 25 Marks(Continuous Assessment) and External assessment is for 75 Marks.
6. It is resolved to encourage students to register for certificate courses offered by Microsoft, NetAcad, Spoken Tutorials etc.
7. Conduct Seminars, Workshops, Symposia, Industry visits etc...
8. Adapt quality based curriculum as per the norms of the NAAC.
9. Encourage the students to join JKC ,APSSDC to improve Technical and communication skills
10. Encourage students to participate in community centric activities like health programs and tie –up with reputed organizations.

Member Present

S.No	BOS Committee	Name & Designation	Signature
1.	Chair Person	Name : Smt. I. Srilakshmi Designation :Lecturer in Computer Science Address :GCW(A),Srikakulam	
2.	Subject Expert (University Nominee)	Name : Dr. A. Mary Sowjanya Designation: Asst. Professor, Dept. of CS&SE Address: Andhra University College of Engineering(A),Vishakhapatnam	
3.	Subject Expert (Nominated By Academic Council)	Name : Dr. A. Siva Prasad Designation :Lecturer in Computer Science Address : Government Degree College, Tekkali	
4.	Subject Expert (Nominated By Academic Council)	Name : Sri. V. RaghavaSwamy Dora Designation :Lecturer in Computer Science Address: Dr. V. S. Krishna College(A),Vishakhapatnam	
5.	Member of Industrial	Name : Kum. P. Vijaya Durga Designation :License Manager Software Asset Management Team Address : Wipro, Hyderabad	
6.	Member of Alumni	Name: Kum. M. Gayatri Varshitha Pursuing M.Sc Computer Science Dr. BR. Ambedakar University, Etcherla	
7.	Members of Department	1)Smt. G. Suma Latha, Lecturer in Computer Science Government College For Women(A),SKLM 2)Smt. S. Vani Kumari, Lecturer in Computer Applications Government College For Women(A),SKLM 3)Smt. S. Madhavi Latha, Lecturer in Computer Applications Government College For Women(A),SKLM	