BCA Sem- II

Subject: Numerical Methods and Statistical Techniques
Subject Code: CSL
Periods per week-12
Duration of each period - 40 minutes

Course Objectives:

1. To enable the students learn to perform error analysis for arithmetic operations.
2. To demonstrate working of various numerical methods.
3. To provide a basic understanding of the derivation and use of methods of interpolation and numerical integration.
4. To impart knowledge of various statistical techniques.
5. To understand the Concept of Random Variables.
6. To grasp the significance of probability density functions and probability distributions.
7. To recognize the properties of the normal distribution and its relevance in statistical analysis and inference.

Course Outcomes:

1. Skill to choose and apply appropriate numerical techniques to obtain approximate solutions to difficult mathematical problems.
2. Ability to apply various Statistical techniques such as Measures of Central Tendency and Dispersion.
3. Understanding of relationship between variables using the method of Correlation and Regression and Trend Fit Analysis.
4. Knowledge of Random Variables.
5. Analyze the probability distribution of continuous random variables.
6. Recognize the characteristics of the normal distribution.

Subject: Computer Architecture
Subject Code: CSL
Periods per week- 12
Duration of each period - 40 minutes

Course Objective:

1. To enable the students to understand the functionality and implementation of computer system.
2. To familiarize with the various instruction codes and formats of different CPUs.
3. To introduce the students to I/O and memory organization of computer System .
4. To deliver an overview of Control Unit of a computer system.
5. To learn the usage of parallel and vector processing.

Course Outcomes:

1. Ability to understand the functionality, organization and implementation of computer system.
2. Skill to recognize the instruction codes and formats.
3. Knowledge of the internal working of main memory, cache memory, associative memory and various modes of data transfer.
4. Familiarization with the working of parallel processing and vector processing

Subject: Computational Problem Solving Using Python
Subject Code: CSL
Periods per week- 6
Practical per week- 6
Duration of each period - 40 minutes

Course Objectives:

1. To impart knowledge of one of the latest and powerful programming languages – Python.
2. To make students understand about to read and write files.
3. To get an overview of concept of Object Oriented Programming(OOP) applied in Python.
4. To learn how to connect Python programs to a database.

Course Outcomes:

1. Understand the strengths of the Python language
2. Gain proficiency in string handling, functions, and n control flow statements.
3. Understand the operations involved in creating and manipulating file systems and databases.
4. Skill to Develop Python applications using various components.
5. Ability to manipulate database using Python programs.

Subject: Drug Abuse
Periods per week: 3
Duration of period: 40 minutes
Course Objectives

1. To raise awareness among students about the harmful effects of drug abuse.
2. To inform them about the risk factors that contribute to drug abuse.
3. To equip them to combat this societal issue effectively.
4. To motivate them to promote awareness about the problems of drug abuse and its treatments within the community.

Course Outcomes

1. Gain a comprehensive understanding of the concepts of use, misuse, abuse, dependence, withdrawal and addiction.

2. Acquire knowledge about the physical, psychological, social and economic impacts of drug abuse.
3. Examine the ways in which alcohol and other drugs contribute to family dysfunction.

ਵਿਸ਼ਾ : ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ (PBL602)
ਸਮਾਂ: 40 ਮਿੰਟ

ਉਦੇਸ਼

1. ਵਾਰਤਕ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀਆਂ ਵਿਚ ਨੈਤਿਕਤਾ ਦਾ ਵਿਕਾਸ ਕਰਨਾ।
2. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਹਲਕੇ ਲੇਖਾਂ ਰਾਹੀਂ ਜੀਵਨ ਦੇ ਸੱਚ ਨਾਲ ਜਾਣੂ ਕਰਵਾਉਣਾ।
3. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸ਼ਬਦ ਬਣਤਰ ਰਾਹੀ ਸ਼ੁੱਧ ਭਾਸ਼ਾ ਲਿਖਣ ਲਈ ਪ੍ਰੇਰਿਤ ਕਰਨਾ।
4. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਰੇਖਾ ਚਿੱਤਰ ਅਤੇ ਸਵੈ ਜੀਵਨੀ ਰਾਹੀ ਪੰਜਾਬੀ ਵਿਦਵਾਨਾਂ ਦੀ ਸ਼ਖਸ਼ੀਅਤ ਦੇ ਵੱਖ-ਵੱਖ ਪੱਖਾਂ ਤੋਂ ਜਾਣੂ ਕਰਵਾਉਣਾ।
5. ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਅਧਿਐਨ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਸ਼ਖਸ਼ੀਅਤ ਨੂੰ ਨਿਖਾਰਨਾ।
6. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸ਼ਬਦਾਂ ਦੀ ਅੰਦਰੂਨੀ ਬਣਤਰ, ਜਿਵੇਂ ਕਿ ਧਾਤੂ, ਅਗੇਤਰ, ਅਤੇ ਪਿਛੇਤਰ ਦੀ ਪਹਿਚਾਣ ਕਰਵਾਉਣਾ, ਤਾਂ ਜੋ ਉਹ ਸ਼ਬਦਾਂ ਦੇ ਰਚਨਾਤਮਕ ਤੱਤਾਂ ਨੂੰ ਸਮਝ ਸਕਣ।
7. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸ਼ਬਦ ਰਚਨਾ ਦੀਆਂ ਵੱਖ-ਵੱਖ
8. ਪ੍ਰਕਿਰਿਆਵਾਂ, ਜਿਵੇਂ ਕਿ ਅਗੇਤਰਾਂ ਅਤੇ ਪਿਛੇਤਰਾਂ ਦੀ ਵਰਤੋਂ ਰਾਹੀਂ ਨਵੇਂ ਸ਼ਬਦ ਬਣਾਉਣਾ, ਸਿਖਾਉਣਾ
9. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸ਼ਬਦਾਂ ਦੀਆਂ ਸ਼੍ਰੇਣੀਆਂ, ਜਿਵੇਂ ਕਿ ਸਧਾਰਨ, ਸੰਯੁਕਤ, ਅਤੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦਾਂ ਦੀ ਪਹਿਚਾਣ ਕਰਵਾਉਣਾ, ਤਾਂ ਜੋ ਉਹ ਵੱਖ-ਵੱਖ ਸ਼ਬਦਾਂ ਦੇ ਪ੍ਰਕਾਰਾਂ ਨੂੰ ਸਮਝ ਸਕਣ।
10. ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਨਾਲ ਸੰਬੰਧਿਤ ਵਿਆਕਰਣਕ ਨਿਯਮਾਂ ਦੀ ਸਮਝ ਪ੍ਰਦਾਨ ਕਰਨਾ, ਜਿਸ ਨਾਲ ਵਿਦਿਆਰਥੀ ਭਾਸ਼ਾ ਦੇ ਢਾਂਚੇ ਨੂੰ ਗਹਿਰਾਈ ਨਾਲ ਸਮਝ ਸਕਣ।
11. ਸ਼ਬਦ ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ ਦੀ ਪਹਿਚਾਣ ਅਤੇ ਵਰਤੋਂ ਵਿੱਚ ਅਭਿਆਸ ਰਾਹੀਂ ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਦੱਖਲਤਾ ਵਧਾਉਣਾ, ਤਾਂ ਜੋ ਉਹ ਸ਼ੁੱਧ ਅਤੇ ਸੁਚਕ ਵਾਕ ਬਣਾਉਣ ਵਿੱਚ ਸਮਰੱਥ ਹੋਣ।

ਨਤੀਜੇ

1. ਵਿਦਿਆਰਥੀ ਭਾਸ਼ਾ ਅਧਿਐਨ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਚ ਮੁਹਾਰਤ ਹਾਸਿਲ ਕਰੇਗਾ।
2. ਵਿਦਿਆਰਥੀ ਵਿਚ ਸਾਹਿਤਕ ਰਚਨਾਵਾਂ ਦਾ ਗਹਿਣ ਅਧਿਐਨ ਕਰਨ ਦੀ ਕਲਾ ਵਿਕਸਿਤ ਹੋਵੇਗੀ।
3. ਵਿਦਿਆਰਥੀ ਸਾਹਿਤ ਦੀਆਂ ਗਲਪੀ ਵਿਧਾਵਾਂ ਰਾਹੀਂ ਸਮਾਜਕ ਪ੍ਰਸੰਗ ਨੂੰ ਉਭਾਰਨਾ ਸਿਖੇਗਾ।
4. ਵਿਦਿਆਰਥੀ ਭਾਸ਼ਾਈ ਅਧਿਐਨ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਚ ਮੁਹਾਰਤ ਹਾਸਿਲ ਕਰੇਗਾ।

BCA Sem- IV

Subject: Data Structure and File Processing
Subject Code: BCA04001T
Periods per week- 6
Practical per week- 6
Duration of each period - 40 minutes

Course Objectives

1. To analyze the asymptotic performance of algorithms.
2. To write rigorous correctness proofs for algorithms.
3. To demonstrate a familiarity with major algorithms and data structures.
4. To apply important algorithmic design paradigms and methods of analysis.
5. To synthesize efficient algorithms in common engineering design situations.

Course Outcomes

1. Basic ability to analyze algorithms and to determine algorithm correctness and time efficiency .
2. Master a variety of advanced abstract data type (ADT) and data structures and their implementations.
3. Master different algorithm design techniques (brute force, divide and conquer, greedy, etc.)
4. Ability to apply and implement learned algorithm design techniques and data structures to solve problems.

Subject: Information System
Subject Code: BCA04002T
Periods per week- 6
Duration of each period - 40 minutes

Course Objective

1. Enable the students to understand the categories of Information System (IS) and its various operations support systems.
2. Develop the knowledge about various IS like Accounting System, Inventory Control System and office Automation system.
3. Enable the students to various phases of software development life cycle (SDLC).
4. Knowledge of managerial issues related to the information systems and help them to identify and evaluate various in management information system.

Course Outcomes

1. Be able to analyze a problem and to define the computing requirements appropriate to its solution.
2. Be able to understand and evaluate a computer based information system.
3. Be able to assist in the creation of an effective Project plan.
4. Be able to use and apply current technical concepts and practices in the core information technologies.

Subject: Internet Applications
Subject Code: BCA04003T
Periods per week- 6
Practical per week- 6
Duration of each period - 40 minutes

Course Objectives:

1. To introduce the students to internet and its working.
2. To enable the students to use various services offered by internet.
3. To familiarize the students with the protocols used in various services of internet.
4. To enable the students to understand the working and applications of Intranet and Extranet.

5. To enable the students to develop small websites using HTML and DHTML.

Course Outcomes:

1. Knowledge of internet and its working.
2. Familiar with various services of internet.
3. Ability to understand the significance of protocols.
4. Skill to develop websites using HTML and DHTML.

Subject: System Software
Subject Code: BCA04004T
Periods per week- 6 theory
Duration of each period - 40 minutes

Course Objectives:

1. To introduce the students about the system software and its application.
2. To enable the students to understand the working of different types of system software.
3. To enable the students to understand the instructions of assembly language.
4. To enable the students to understand the macro processor and its working.
5. To understand the linker and loaders.

Course Outcomes:

1. Familiar with system software and its importance.
2. Understand the types of system software.
3. Understand the internal working of macro processor.
4. Knowledge of assembly language and its instructions.
5. Understand ability the working of linker and loaders.

Subject: Environmental Studies
Periods per week: 6
Duration of on of period: 40 Minutes

Course Objectives

1. To raise awareness about environmental issues.
2. To foster curiosity among students, particularly regarding the natural environment.
3. To cultivate a proactive attitude in students to engage in activities related to environmental protection.
4. To develop skills for identifying and solving environmental problems.

Course Outcomes

5. Cultivate critical thinking concerning environmental affairs.

6. Gain an understanding of the interdisciplinary nature of environmental issues.
7. Conduct independent research on environmental problems, culminating in a project report.
8. Understand social interactions and the cultural values that underlie human behaviour.

BCA Sem-VI

Subject: (Project) Software Module
Subject Code: Paper-IV
Practical per week- 6
Duration of each period - 40 minutes

Course Objective

1. To learn languages to code front end and back end of a software.
2. To initiate into the process of designing, coding and testing a software module.
3. To develop a complete software module.

Course Outcomes

1. Skill to apply Software Development Cycle to develop a software module.
2. Ability to use the techniques, skills and modern engineering tools necessary for software development.
3. Develop a software product along with its complete documentation.

Subject:Computer Networks
Subject Code: Paper-II
Periods per week- 12
Duration of each period - 40 minutes

Course Objectives:

1. To deliver comprehensive view of Computer Network.
2. To enable the students to understand the Network Architecture, Network type and topologies.
3. To understand the design issues and working of each layer of OSI model
4. To familiarize with the benefits and issues regarding Network Security.

Course Outcomes:

1. Knowledge of uses and services of Computer Network.
2. Ability to identify types and topologies of network.
3. Understanding of analog and digital transmission of data.
4. Learn the techniques of Network Security.

Subject: Computer Graphics

Subject Code: Paper-I
Periods per week-9
Practical Per week- Three
Duration of period- 40 minutes

Course Objectives

1. To understand the basics of computer graphics, different display devices and applications of computer graphics.
2. To learn about algorithmic development of graphics primitives like: Point, line, circle, ellipse etc.
3. To impart knowledge of 2D and 3D transformations on graphics objects.
4. To familiarize with 2D Viewing and different clipping methods.
5. To get an overview of Projection and its types.

Course Outcomes

1. Knowledge of working of display systems.
2. Skill to execute various Scan Conversion algorithms in laboratory so as to draw Graphics primitives.
3. Familiarization with 2D and 3D graphics.
4. Develop creativity to create 2D objects.
5. Ability to implement 2D geometric transformations on computer system.