

## **COURSE OBJECTIVES**

B.Sc. 2<sup>nd</sup> Year Computer Science (CBCS) Honours

Department of Computer Science

### **Paper Code: CSC-HC-3016 Data Structure**

**After completing the course, the students are able to :**

1. To be familiar with fundamental data structures and with the manner in which these data structures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles
2. To have a knowledge of complexity of basic operations like insert, delete, search on these data structures.
3. Ability to choose a data structure to suitably model any data used in computer applications.
4. Design programs using various data structures including hash tables, Binary and general search trees, heaps, graphs etc.
5. Ability to assess efficiency tradeoffs among different data structure implementations.
6. Implement and know the applications of algorithms for sorting, pattern matching etc.

### **Paper Code: CSC-HC-3026 Operating System**

**After completing the course, the students are able to :**

1. Describe the important computer system resources and the role of operating system in their management policies and algorithms.
2. To understand various functions, structures and history of operating systems and should be able to specify objectives of modern operating systems and describe how operating systems have evolved over time.
3. Understanding of design issues associated with operating systems.
4. Understand various process management concepts including scheduling, synchronization, and deadlocks.
5. To have a basic knowledge about multithreading.
6. To understand concepts of memory management including virtual memory.

**Paper Code: CSC-HC-3036 Computer Networks**

**After completing the course, the students are able to :**

1. Understand the structure of Data Communications System and its components. Be familiarize with different network terminologies.
2. Familiarize with contemporary issues in network technologies.
3. Know the layered model approach explained in OSI and TCP/IP network models
4. Identify different types of network devices and their functions within a network.
5. Learn basic routing mechanisms, IP addressing scheme and internetworking concepts.
6. Familiarize with IP and TCP Internet protocols.
7. To understand major concepts involved in design of WAN, LAN and wireless networks.
8. Learn basics of network configuration and maintenance.

**Paper Code: CSC-SE-3014 UNIX/LINUX Programming**

**Objectives of the Course are:**

1. Study on different activities performed by a Linux System Administrator. Like LAN Setup, Server setup Etc.
2. Students will be able to learn about the structure of Linux Operating systems and about shell programming.
3. After completion of this Course students will be able to work as a system administrator.

**Paper Code: CSC-HC-4016 Design and Analysis of Algorithms**

**After completing the course, the students are able to :**

1. Argue the correctness of algorithms using inductive proofs and Analyze worst-case running times of algorithms using asymptotic analysis.
2. Explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it
3. Explain the major graph algorithms and Employ graphs to model engineering problems, when appropriate
4. Compare between different data structures and pick an appropriate data structure for a design situation
5. Understand RED-BLACK tree and the associated primitive operations.
6. Understand String matching algorithms

**Paper Code: CSC-HC-4026 Software Engineering**

**After completing the course, the students are able to acquire :**

1. Ability to gather and specify requirements of the software projects.
2. Ability to analyze software requirements with existing tools
3. Able to differentiate different testing methodologies
4. Able to understand and apply the basic project management practices in real life projects
5. Ability to work in a team as well as independently on software projects

**Paper Code: CSC-HC-4036 Database Management System**

**After completing the course, the students are able to:**

1. Know the advantages of DBMS and the architectural aspects of DBMS
2. Use database design tools
3. Design database considering the associated restrictions.
4. Use SQL to Store, Retrieve data in database.
5. Learn concurrency control mechanisms
6. Learn file structure and indexing structures.

**Paper Code: CSC-SE-4024 PHP Programming**

**After completing the course, the students are able to :**

1. Learn the basic syntax of PHP, html form handling, string handling array handling etc.
2. Learn the basic skills needed to design dynamic web pages

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