Department of Computer Science
Lesson Plan Session 2024-2025
BACS Semester-III
Operating System (BACS-212)

July 2024 to November 2024	Topics
1st Week	Structure of Operating Systems: Layers-MS-DOS Layer Structure, Traditional UNIX System Structure;
2nd week	Running Multiple Operating Systems, Running a Virtual Operating System, Operating System Modes, System Boot.
3rd Week	Process Management: Introduction to Process, Attributes of a process,
4th Week	Process States, Operations on the Process, Process Schedulers
5th Week	CPU Scheduling, Scheduling Algorithms, Purpose of a Scheduling algorithms
6th Week	Introduction to FCFS, Shortest Job First (SJF), Round Robin Scheduling Algorithms.
7th Week	Memory Management: Fixed and Dynamic partition, Physical and Logical Address Space
8th Week	Page Table, Mapping from page table to main memory
9th Week	Page Table Entry, Size of the page table, Finding Optimal Page Size.
10th Week	Virtual Memory Concepts, Advantages and disadvantage of Virtual Memory
11th Week	Segmentation, Translation of Logical address into physical address by segment table
12th Week	Advantages and disadvantage of Segmentation. Paging VS Segmentation.
13th Week	File Management: Attributes of File, Operations on File
14th Week	File Access Methods-Sequential, Direct and Indexed Access; Directory Structure
15th Week	File Systems, File System Structure- different layers; Master Boot Record
16th Week	Directory Implementation-Linear List and Hash Table; Disk space Allocation Methods- Contiguous Allocation and FAT
17th Week	Doubt Clearance

Department of Computer Science
Lesson Plan Session 2024-2025
BACS Semester-III
Data Base Management System (BACS-211)

July 2024 to November 2024	Topics
1st Week	Basic Concepts: A Historical perspective, File Systems vs. DBMS, Characteristics of the Data Base Approach,
2nd week	Abstraction and Data Integration, Database users, Advantages and Disadvantages of DBMS
3rd Week	DBMS architecture, Data Models, Schemas and Instances, Data Independence
4th Week	Entity Relationship (ER) Model: Basic Concepts-Entity, Attributes, Types of Attributes
5th Week	Entity set and Keys; Relationships-Relationship set, Degree of Relationship, Mapping Cardinalities.
6th Week	ER diagram representation-Representation of Entity, Attributes and Relationship
7th Week	Binary Representation and Cardinality, Participation Constraints.
8th Week	Relational Model: Relational model concepts (Tables, Tuple, Relation instance, Relation schema, Relation key, Attribute domain),
9th Week	Constraints- Key constraints, Domain constraints, Referential integrity constraints;
10th Week	Relational algebra, Basic operations: Select, Project, Union, set difference, Cartesian product, Rename.
11th Week	Relational Database design: Mapping ER model to relational database
12th Week	functional dependencies, Lossless decomposition, Desirable properties of decomposition
13th Week	Normal forms (1 NF, 2 NF, 3 NF and BCNF).
14th Week	SQL: Why SQL, Data Types; DDL-Create, Alter and Drop table Commands.
15th Week	DML-SELECT/ FROM/ WHERE, INSERT INTO/ VALUES, UPDATE /SET/ WHERE, DELETE Commands
16th Week	UNION [ALL], INTERSECTION and MINUS Operators.
17th Week	Doubt Clearance