# **United** International **University** (UIU)
# Dept. of Computer Science & Engineering (CSE)
## COURSE OUTLINE

Course Code: CSE 2216
Course Title: Data Structure and Algorithms I Laboratory
Section: H
Trimester and Year: Summer 2023

**Instructor** Md. Tarek Hasan (MdTH)

**Classes** Saturday 11:11 AM – 01:40 PM Computer Lab 8 (0528)

**Counseling hours:** Will be announced later

**Room No.** **0319 (A)**

**Email** tarek@cse.uiu.ac.bd

**Text Book** **Follow your theory classes**

**Assignment or Offline**
Assignment will be provided in the class. **Copied assignments will cause 0 of both.**

**Continuous Evaluation or Graded Practice**
**T**asks given at the lab will be evaluated by class performance. Marks will be assigned on this performance.

**Exams**
Mid-term and final exam will be closed book, closed notes. The materials for Mid-term exam and final exam will be informed in due time. There will be no grade exemptions from the final. Final examination is not comprehensive.

**Marks distribution** of the course is as follows:

| | |
|---|---|
| Attendance | 10% |
| Class Performance (N-1 out of N) | 25% |
| Offline (N out of N) | 25% |
| Mid-term (Written) | 15% |
| Final Exam (Implementation) | 25% |

**Course Grade** The following scale will be used to convert numerical grades to letter grade:

| **Letter Grade** | **Marks** | **Grade Point** | **Letter Grade** | **Marks** | **Grade Point** |
|---|---|---|---|---|---|
| A (Plain) | 90-100 | 4.0 | C+ (Plus) | 70-73 | 2.33 |
| A- (Minus) | 86-89 | 3.67 | C (Plain) | 66-69 | 2.00 |
| B+ (Plus) | 82-85 | 3.33 | C- (Minus) | 62-65 | 1.67 |
| B (Plain) | 78-81 | 3.00 | D+ (Plus) | 58-61 | 1.33 |
| B- (Minus) | 74-77 | 2.67 | D (Plain) | 55-57 | 1.00 |

**Objectives:**

(i) To learn basic concept of different data structures.
(ii) Implement different data structures using C/C++ programming.
(iii) Analysis their running time.

**Outcome:**

(i) Improve programming skills.
(ii) Enhances knowledge in the area of data structures.

| Week | Topics |
|---|---|
| 1 | Introduction, Basic Discussion |
| 2 | Sorting (Selection Sort, Bubble Sort, Insertion Sort) |
| 3 | Searching (Linear Search, Binary Search) |
| 4 | **Class Performance 1** + Singly/Single Linked List (Insertion, Deletion, Search) |
| 5 | Doubly/Double Linked List (Insertion, Deletion, Search) |
| 6 | **MIDTERM EXAM** |
| 7 | Stack and Queue |
| 8 | Graph representation and Graph Algorithms (BFS) |
| 9 | **Class Performance 2** + Graph Algorithms Cont. (DFS, Topological Ordering) |
| 10 | Tree Traversal Technique, Binary Tree and Binary Search Tree |
| 11 | **Class Performance 3** + Set Operations |
| 12 | **FINAL EXAM** |