**United** International **University** (UIU)

**Dept. of Computer Science & Engineering (CSE)**

# COURSE OUTLINE

**Course Code:** CSE 2216

**Course Title:** Data Structure and Algorithms I Laboratory

**Credit Hour:** 1.0

**Section:** C

Fall Trimester: 2022

**Instructor:** Md. Muhyminul Haque

**Classes:** Saturday 02:00 PM – 04:30 PM | Computer Lab 6 (0524)

**Counselling Hour:**

| Day | Time [CNH] |
|---|---|
| Saturday | - |
| Sunday | ( 09:00 am – 10:00am ), ( 12:00 pm – 01:00 pm ) |
| Monday | - |
| Tuesday | ( 02:30pm – 05:00pm ) |
| Wednesday | ( 09:00 am – 10:00am ), ( 12:00 pm – 01:00 pm ) |

**Office:** **418-B**

**Contact Info:** ***Email:*** muhyminul@cse.uiu.ac.bd | ***Phone:*** +8801789926815 (in case of emergency only)

**Textbook:** **Follow your theory classes**

## Homework
Homework will be given throughout the session.

## Assignment
Assignment will be provided in the class. Copied assignments will cause 0 of both.

## Continuous Evaluation
Tasks 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.

## Assessment Method:
Marks distribution of the course is as follows:

| | |
|---|---|
| Attendance | 10% |
| Class Evaluation | 30% |
| Assignments | 25% |
| Mid-term | 10% |
| Final Exam | 15% |
| Presentation/Viva | 10% |

## Grading Policy:

For 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 |

**Course Objectives:**

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

**Outcome:**

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

**Lab Outline:**

| Week | Topics |
|---|---|
| 1 | Introduction, Basic discussion about Data Structures<br>(Practice some required concepts from previous programming courses) |
| 2 | Traversing, Searching (linear, binary), Counting, Insertion & Deletion in array |
| 3 | Sorting (Bubble Sort, Insertion Sort, Merge Sort etc.) using array |
| 4 | Singly Linked List: Introduction + Insertion |
| 5 | Singly Linked List: Searching + Deletion |
| 6 | Doubly Linked List + Circular Linked List (Insert, Search, Delete) |
| 7 | **Mid Term Exam** |
| 8 | Stack & its different operations |
| 9 | Queue & its different operations |
| 10 | Graph Representation |
| 11 | BFS & DFS |
| 12 | Tree (Traversal Techniques), Binary Tree, Binary Search Tree |
| 13 | **Final Exam** |