UNITED INTERNATIONAL UNIVERSITY

Department of Computer Science and Engineering (CSE)

Course Syllabus

1	**Course Title**	Algorithms Laboratory
2	**Course Code**	CSI 228
3	**Trimester and Year**	Spring 2023
4	**Pre-requisites**	CSI 217: Data Structure, CSI 219: Discrete Mathematics
5	**Credit Hours**	1.00
6	**Section**	C
7	**Class Hours**	Tuesday: 8:30 AM – 11:00 AM
8	**Class Room**	531
9	**Instructor's Name**	Muntaka Ibnath
10	**Email**	muntaka@cse.uiu.ac.bd
11	**Office**	R#419
12	**Counselling Hours**	Send me an Email
13	**Text Book**	Introduction to Algorithms (3rd edition) by Cormen, Leiserson, Rivest and Stein
14	**Course Contents (approved by UGC)**	Laboratory works based on CSI 227.
15	**Course Outcomes (COs)**	
16	**Teaching Methods**	Lecture, Case Studies.
17	**CO with Assessment Methods**	

COs	Description
CO1	Implement correct algorithms to handle large datasets efficiently.
CO2	Analyze worst-case running times of algorithms using asymptotic analysis.
CO3	Describe different algorithm paradigms and explain when algorithmic design situations call for them. Recite algorithms that employ these paradigms. Synthesize such algorithms. Derive and solve problems describing the performance of the algorithms.

CO	Assessment Method	(%)
-	Attendance	10

CO1, CO3	Offline/Home Assignments	25%
	Online/Class Tests	35%
CO1, CO3	Presentations	10%
CO1	-	-
CO2, CO3	Final	20%

18 Mapping of COs and Program outcomes

COs	Program Outcomes(POs)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			C									
CO2		C										
CO3			C									

19 Lab Outline

Class	Topics/Assignments	COs	Lab Outcomes/Activities
Lab1	Practice 1: Review of Recursive Functions	CO1	Lecture, Graded practice
Lab2	Exam 1: Review of Recursive Functions	CO1	Exam
Lab3	Practice 2: Divide-and-Conquer	CO1, CO3	Lecture, Graded practice
Lab4	Exam 2: Divide-and-Conquer Assignment 1	CO1, CO3	Exam; Lecture
Lab5	Practice 3: Greedy Algorithms	CO1, CO3	Lecture, Graded practice
Lab6	Assignment 2: Greedy Algorithms; Practice 4: Dynamic Programming	CO1, CO3	Lecture, Graded practice
MIDTERM WEEK			
Lab7	Exam 3: Dynamic Programming	CO1, CO3	Exam
Lab8	Practice 5: Disjoint-Sets Forests	CO1, CO3	Lecture, Graded practice
Lab9	Exam 4: Disjoint-Sets Forests; Minimum Spanning Trees	CO1, CO3	Exam
Lab10	Practice 6: Single-Source Shortest Paths	CO1, CO3	Lecture, Graded practice
Lab11	Exam 5: Single-Source Shortest Paths Assignment 3	CO1, CO3	Exam
Lab12	Practice 7: String Matching	CO1, CO3	Lecture, Graded practice