Table 1. Lecture Plan of Algorithms Course

Course Title	Algorithms
Course Code	Algorithm_003
003 Pre-Requisite	Basic Knowledge of Programming Language (C, C+ or Python)
Credit Hours Theory	3
Credit Hours Lab (If applicable)	1
1: Course Objective	A detailed study of basic algorithms used in computing, implementation (in Python or C) and applications, a comparative study of different algorithms.
2: Learning Outcomes	After the successful completion of course, the student will be able to: 1) Good understanding of the basic algorithms in computing 2) The knowledge of designing and implementing algorithms 3) The ability to use an appropriate algorithm for the problem solving (mostly in Data Structures)
3: Contents (Catalog Description)	This course provides the students with an enjoyable introduction to the field of algorithms and attempted to make algorithms accessible and interesting. It describes each one in a step-by-step manner. This also provides careful explanations of the insights needed to understand the analysis of the algorithms.
4. Recommended Textbooks	(Optional) Introduction to Algorithms, Third Edition; Authors: Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein
5. Homework	One or Two Assignments
General Instruction for Students	Attendance is mandatory. Every class is important. All deadlines are hard. Under normal circumstances late work will not be accepted. Students are required to participate all the tests. No make-up tests will be given under normal circumstances. There is 0 tolerance for plagiarism. Any form of cheating on exams/assignments/quizzes is subject to serious penalty. **Attendance:** 75% attendance is mandatory. Latecomers will be marked as absent. **Evaluation Criteria:** 1) Attendance: 20% 2) Midterm Exam: 20% 3) Assignment/Report: 20% 4) Final Exam: 40%

Table 2. Lectures and Covered Topics

	Lectures	Topics Covered
Fifteen Week Lesson Plan	1st Week	Introductory Class
		Discussion on Course Syllabus, Teaching Methodology, and Grade Evaluation Process
	2nd Week	Introduction to Algorithms
		Algorithms in Computing, Flowchart Diagram, Pseudocode, and Time Complexity
	3rd Week	Tree Data Structure (1)
	3rd Week	Representation of Trees and Operations
	4th Week	Tree Data Structure (2) and Lab Practice
	4th Week	Tree Traversal, Deletion in Binary Tree, and Implementation
	5th Week	Graph Algorithms (1)
	5th Week	Representation of Graphs and Operations
	6th Week	Graph Algorithms (2) and Lab Practice
	6th Week	Graph Traversal and Implementation
	7th Week	Minimum Spanning Tree
	7th Week	Growing Minimum Cost Spanning Tree
	8th Week	**Midterm Week**
	8th Week	**Midterm**
	9th Week	Sorting Algorithms and Lab Practice
	9th Week	Types of Sorting Algorithms and Implementation
	10th Week	Searching Algorithms and Lab Practice
	10th Week	Types of Searching Algorithms and Implementation
	11th Week	Hashing Algorithms
	11th Week	Types of Hashing Algorithms and Implementation
	12th Week	Dynamic Programing (1)
	12th Week	Types of Dynamic Programing and Operations
	13th Week	Dynamic Programing (2) and Lab Practice
	13th Week	Types of Dynamic Programing and Implementation
	14th Week	Review Lectures
	14th Week	Lecture Discussion, Question and Answer Session
	15th Week	**Final Exam Week**
	15th Week	**Final Exam**