



Course Name: Data Structures

Course Number: CS 261 (Online)

Credits: 4

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Instructor email: ehsans@oregonstate.edu

Course Content

Week	Course Activities
1	- Module 1 - Overview - Exploration: Intro to Data Structures - Exploration: Some Opening Thoughts - Syllabus Quiz (Due: Dec 11, 2020) - Assignment 0: Introduction Environment Setup (Due: Sep 30, 2020)
2	- Review - Module 1 - Module 2 - Overview - Exploration: Big O Introduction - Exploration: Big O Examples - Assignment 1: Python Programming Practice (Due: Oct 14, 2020) - Review - Module 2
3	- Module 3 - Overview - Exploration: An Overview of ADTs - Exploration: Python's List - Assignment 2: Implementation of Dynamic Array and ADTs using Dynamic Array and Amortized Analysis (Due: Oct 21, 2020) - Review - Module 3
4	- Module 4 - Overview - Exploration: Introduction to Linked Lists - Exploration: Stacks, Queues and Deques - Assignment 3: Implementation of Linked Lists and Various ADTs Using Linked Lists (Due: Nov 04, 2020) - Review - Module 4
5	- Module 5 - Overview - Exploration: Encapsulation and Iterators - Exploration: Iterator Example - Exploration: Binary Search - Quiz 1 (Available from Nov 06 to 11, 2020 and covers materials from Week 1 to Week 4) - Review - Module 5
6	- Module 6 - Overview - Exploration: Trees - Exploration: Binary Trees - Exploration: BST Operations - Assignment 4: Binary Search Tree Implementation (Due: Nov 18, 2020) - Review - Module 6

Week	Course Activities
7	○ Module 7 - Overview ○ Exploration: AVL Trees and Balancing ○ Exploration: AVL Tree Rotations ○ Exploration: Rotation Implementation ○ Review - Module 7
8	○ Module 8 - Overview ○ Exploration: Priority Queues and Heaps ○ Exploration: Heap Implementation ○ Review - Module 8
9	○ Module 9 - Overview ○ Exploration: Introduction to Maps and Hash Tables ○ Exploration: Hash Table Collisions ○ Assignment 5: Hash Map and Heap Implementation (Portfolio Assignment) (Due: Dec 02, 2020) ○ Review - Module 9
10 and final week	○ Module 10 - Overview ○ Exploration: Graphs ○ Exploration: Working with Graphs ○ Assignment 6: Graph and Graph Algorithms Implementation (Due: Dec 09, 2020)
	○ Quiz 2 (Available from Dec 06 to 10, 2020 and covers materials from Week 5 to Week 10) ○ Review - Module 10