Weekly Schedule – Spring 2018

Course: CS261- Data Structures in CS

Credits: 4

Weekly Schedule:

The coursework is divided in ten modules. To summarize, the weekly worksheets are due on Sundays (except week 10) and programming assignments are due on Mondays. Please make sure that you have submitted the programming assignments (not the worksheets) via both TEACH and Canvas. (This schedule is subject to change)

Module Due Dates	Course Topics
#1 **Worksheet group First meeting minutes –(04/08/2018)** **Assignment 0 – (04/09/2018)** **Syllabus Quiz –(04/09/2018)**	• Reading: Chapters 1- 4 • Assignment 0 :Introduce yourself and learn to use an IDE & Unix host • Worksheets 9 and 10 (Review Content, will not be graded) • Video: C_Basics_Review • Video: eclipseProjectFromMakefile o Code: studentStructExample • Video: C_Pointers_Review • Video: Static_dynamic_structCodeExamples o Code: studentStructExample o Code: dynamicStudentStructExample • Video: C_Compiling_Review • Programming Assignment#1 - C Programming Practice • Syllabus Quiz
#2 **Worksheet 0, 14, 15, 16, 21 –(04/15/2018)** **Assignment 1 –(04/16/2018)**	• Reading: Chapter 5 • Video: AbstractDataTypes • Worksheet0 Array Bag Stack o Code: arrayBagStack • Reading: Chapter 6 pp. 1-10 • Video: DynamicArrayConcepts • Worksheet15 DynArr Amortized Analysis • Video:DynamicArrayImplementation • Worksheet14 Dynamic Array • Worksheet16_Dynamic Array Stack • Reading: Chapter 8 pp. 1-4 • Worksheet21Dynamic Array Bag o Code: dynamicArray [locked until after assignment turned in] • Programming Assignment#2 - Amortized Analysis and Dynamic Array Stack Application
#3 **Worksheet 17, 18, 19, 20 – (04/22/2018)**	• Reading: Chapter 7 pp. 1-2, 6-10 • Video: DynamicArrayDequeIntro • Worksheet20 Dynamic Array Deque and Queue (Read the Introduction)

Assignment 2 –(04/23/2018)	Code: DynamicArrayDeque • Video: DynamicArrayDequeImplementation • Worksheet 20 Dynamic Array Deque and Queue (Complete the implementation) • Reading: Chapter 6 pp. 10 - 19 • Video: LinkedListIntro • Worksheet17 LinkedList Stack o Code: Linked List Stack • Reading: Chapter 7 pp. 4-6 • Video: LinkedListQueue • Worksheet18 LinkedList Queue o Code: Linked List Queue • Video:LinkedListDequeue • Worksheet19 LinkedList Deque o Code: LinkedList • Programming Assignment#3 - Linked List Application
#4 **Worksheet 22, 23, 24, 26 –(04/29/2018)** **Assignment 3 –(04/30/2018)**	• Reading: Chapter 8 pp. 4-9 • Worksheet 22 Linked List Bag • Video: Iterator ADT • Worksheet 24 Linked List Iterator • Code Demo Video: Linked List Iterator o Code: LinkedListIterator (Folder) • Worksheet 23 Dynamic Array Iterator • Reading: Chapter 9 • Video: Ordered Arrays and Binary Search • Worksheet26 Ordered Bag using Ordered Array • Video or Handout: Binary Search Argument of Correctness • No Assignment – STUDY FOR MIDTERM (**Exam syllabus – Week 1 to 4)**
#5 **Worksheet 28, 29 – (05/06/2018)**	• Reading: Chapter 10 pp. 1-5, 13-19 • Video: Trees Intro • Video: Binary Search Trees 1 • Worksheet 28 Binary Search Trees 1 • Video: Binary Search Trees 2 • Worksheet 29 Binary Search Trees 2 • Programming Assignment #4- Binary Search Tree Application
#6 **Worksheet AVL, 31 – (05/13/2018)**	• Reading: Worksheet 31 AVL Tree (Do not complete yet) • Video: AVL 1 • Video: AVL 2 • Worksheet AVL Practice • Video: AVL Implementation – code walkthrough o Code: AVL Tree (Folder) • Worksheet 31 AVL Tree (Complete the implementation) **Midterm Exam (05/06 - 05/10) (Week 1 - Week 4)**
#7 **Worksheet Heaps, 33,34**	• Reading: Chapter 11 pp. 1-7 • Video: Heaps I • Worksheet Heaps Practice

– (05/20/2018) **Assignment 4 – (05/21/2018)**	• Video: Heaps II • Worksheet 33 Heaps and Priority Queues • Reading: Chapter 11 pp. 7 - 14 • Video: Heap Sort • Worksheet 34 Build Heap and Heap Sort
#8 **Worksheet 36, 37, 38 – (05/27/2018)**	• Reading: Chapter 12: pp. 3-6 • Video: HashTables Intro • Video: HashTables_OpenAddressing • Worksheet36 Dynamic Array Dictionary • o Code: DynArryMap (Folder) • Worksheet37 Open Address Hashing • Reading: Chapter 12: pp. 6-15 • Video: HashTables_Chaining • Video: Maps • Worksheet38 HashTables Using Buckets • Video: Hash-Like Sorting • Programming Assignment #5 - Hash Table Implementation of a Concordance
#9 **Worksheet 40, 41, 42 – (06/03/2018)** **Assignment 5 –(06/04/2018)**	• Reading: Chapter 13: Graphs • Video: Graphs Intro • Worksheet40 Graph Representations • Video: GraphAlgorithms I • Worksheet41 Depth-First and Breadth-First Search • Reading: Chapter 7 pp. 2-4 • Video: GraphAlgorithmsII DFS/BFS • Video: GraphAlgorithms III Dijkstra • Worksheet42 Dijkstra's Algorithm • More Practice: bfs.pdf, dfs.pdf, dijkstras.pdf
##10 **Worksheet 30, 32 – (06/08/2018)**	• Reading: Chapter 10 pp. 5-13 • Video: Tree Traversals • Worksheet32 Tree Sort • Video: Binary Search Tree Iterator • Worksheet30 Binary Search Tree Iterator • Redo Worksheet32 using BST Iterator • Reading: Chapter 12 pp. 1-3
	• STUDY FOR FINAL EXAM
# Final Week	• **Final Exam (06/10 – 06/14)(Week 1, 5 - Week 10)**