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| **Week** | **Course Topics** |
| **#1** | Reading: Chapters 1-4  Lecture: Course Introduction ( Welcome note, discussion board usage )  Worksheets 9 and 10 (Review Content)  Video: C\_Basics\_Review  Video: eclipseProjectFromMakefile  Code: studentStructExample  Video: C\_Pointers\_Review  Video: Static\_dynamic\_structCodeExamples  Code: studentStructExample  Code: dynamicStudentStructExample  Video: C\_Compiling\_Review  Programming Assignment# 1 – C Pointers Practice (Due 10/7)  Week 1 resources : Tutorials helpful for understanding week 1 materials |
| **#2** | Reading: Chapter 5  Video: AbstractDataTypes  Worksheet0\_Array\_Bag\_Stack ( Due 10/4 )  Solution Code: arrayBagStack  Reading: Chapter 6 pp. 1-10  Video: DynamicArrayConcepts  Worksheet15\_DynArr\_Amortized ( Due 10/4 )  Video:DynamicArrayImplementation  Worksheet14\_DynArr ( Due 10/4 )  Worksheet16\_DynArr\_Stack ( Due 10/4 )  Reading: Chapter 8 pp. 1-4  Worksheet21\_DynArr\_Bag ( Due 10/4 )  SolutionCode: dynamicArray [locked until after assignment turned in]  Programming Assignment# 2 - Amortized Analysis and Dynamic Array Stack Application (Due 10/14) |
| **#3** | Reading: Chapter 7 pp. 1-2, 6-10  Video: DynamicArrayDequeIntro  Worksheet20: Dynamic Array Deque and Queue (Read the Introduction) (Due 10/11)  Solution Code: DynamicArrayDeque  Video: DynamicArrayDequeImplementation  Worksheet 20: Dynamic Array Deque and Queue (Complete the implementation) ( Due 10/11)  Solution Code : DynamicArrayDeque  Reading: Chapter 6 pp. 10 - 19  Video: LinkedListIntro  Worksheet17: LinkedList Stack ( Due 10/11)  Solution Code: Linked List Stack  Reading: Chapter 7 pp. 4-6  Video: LinkedListQueue  Worksheet18: LinkedList Queue ( Due 10/11)  Solution Code: Linked List Queue  Video:LinkedListDequeue  Worksheet19: LinkedList Deque ( Due 10/11)  Solution Code: LinkedList  Programming Assignment#3 - Circular Linked List (Due 10/21) |
| **#4** | Reading: Chapter 8 pp. 4-9  Worksheet 22: Linked List Bag ( Due 10/18)  Video: Iterator ADT  Worksheet 24: Linked List Iterator ( Due 10/18)  Code Demo Video: Linked List Iterator  Solution Code: LinkedListIterator (Folder)  Worksheet 23: Dynamic Array Iterator ( Due 10/18)  Reading: Chapter 9  Video: Ordered Arrays and Binary Search  Worksheet26: Ordered Bag using Ordered Array ( Due 10/18)  Video or Handout: Binary Search Argument of Correctness  No Assignment – STUDY FOR MIDTERM |
| **#5** | Reading: Chapter 10 pp. 1-5, 13-19  Video: Trees Intro  Video: BST 1  Worksheet 28 (Due 10/25)  Video: BST 2  Worksheet 29 (Due 10/25)  Midterm Exam (10/25 - 10/28 2:00pm)  Video: BST 3  Programming Assignment #4 - Binary Search Trees (Due 11/4) |
| **#6** | Reading: Worksheet 31 (do not complete yet)  Video: AVL 1  Video: AVL 2  Worksheet AVL Practice ( Due 11/1)  Video: AVL Implementation – code walkthrough  Code: AVLTree (Folder)  Worksheet 31: complete the implementation( Due 11/1) |
| **#7** | Reading: Chapter 11 pp. 1-7  Video: Heaps I  Worksheet: Heaps Practice( Due 11/8)  Video: Heaps II  Worksheet:33: Heaps and Priority Queues( Due 11/8)  Reading: Chapter 11 pp. 7 - 14  Video: HeapSort  Worksheet34: BuildHeap and HeapSort( Due 11/8 )  Programming Assignment #5: Heap Implementation of a To-Do List (Due 11/18) |
| **#8** | Reading: Chapter 10 pp. 5-13  Video: Tree Traversals  Worksheet32: TreeSort(Due 11/15)  Video: BST Iterator  Worksheet30(Due 11/15)  Redo Worksheet32 using BST Iterator (Due 11/15)  Reading: Chapter 12 pp. 1-3  Video: Maps  Worksheet38 – Dynamic Array Dictionary(Due 11/15)  Solution Code: DynArryMap (Folder) |
| **#9** | Reading: Chapter 12: pp. 3-6  Video: HashTables Intro  Video: HashTables\_OpenAddressing  Worksheet37: Open Address Hashing (Due 11/22)  Reading: Chapter 12: pp. 6-15  Video: HashTables\_Chaining  Worksheet 38.links.pdf: HashTables Using Buckets (Due 11/22)  Video: Hash-Like Sorting  Worksheet:39 Radix Sorting(Due 11/22)  Programming Assignment #6: HashTable Implementation of a Concordance (Due 11/25) |
| **#10** | Reading: Chapter 13: Graphs  Video: Graphs Intro  Worksheet40: Graph Representations(Due 11/28)  Video: GraphAlgorithms I  Worksheet41: Depth-First and Breadth-First Search(Due 11/28)  Reading: Chapter 7 pp. 2-4  Video: GraphAlgorithmsII DFS/BFS  Video: GraphAlgorithms III Dijkstra  Worksheet42: Dijkstra’s Algorithm(Due 11/28)  More Practice: bfs.pdf, dfs.pdf, dijkstras.pdf  Assignment #7: HashTables and Graphs (Written Only) (Due 12/2)  STUDY FOR THE FINAL EXAM (12/2- 12/4) |