**CST 370 – Schedule**

**Spring 2020\* (Tentative)**

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| **No** | **Date** | **Topics and Materials** | **Events** |
| 1 | 21 Jan | Course Overview  Introduction to Algorithms  Introduction to HackerRank.com for Homework |  |
| 2 | 23 Jan | Important Problem Types |  |
| 3 | 28 Jan | Fundamental Data Structures |  |
| 4 | 30 Jan | Fundamental Data Structures |  |
| 5 | 4 Feb | Fundamental Data Structures |  |
| 6 | 6 Feb | Analysis Framework  Asymptotic Notations and Basic Efficiency Classes |  |
| 7 | 11 Feb | Mathematical Analysis of Nonrecursive Algorithms |  |
| 8 | 13 Feb | Mathematical Analysis of Recursive Algorithms |  |
| 9 | 18 Feb | Depth-First Search |  |
| 10 | 20 Febp | Breadth-First Search  Introduction to Brute-Force  Selection Sort and Bubble Sort  Brute-Force String Matching |  |
| 11 | 25 Feb | Exhaustive Search |  |
|  | 27 Feb | **Midterm-I** |  |
| 12 | 3 Mar | Introduction to Divide-and-Conquer  Merge Sort |  |
| 13 | 5 Mar | Quick Sort  Binary Tree Traversals |  |
| 14 | 10 Mar | Introduction to Decrease-and-Conquer  Insertion Sort |  |
| 15 | 12 Mar | Topological Sorting  Algorithms for Generating Combinatorial Objects  Decrease-By-A-Constant-Factor Algorithms |  |
| 16 | 17 Mar | Variable-Size-Decrease Algorithms  Introduction to Transform-and-Conquer  Presorting |  |
| 17 | 19 Mar | Balanced Search Trees |  |
| 18 | 24 Mar | Balanced Search Trees  Heaps and Heapsort |  |
| 19 | 26 Mar | Heaps and Heapsort |  |
|  | 3/31 & 4/2 | **Spring Break (No classes)** |  |
| 20 | 7 Apr | Linear-Time Sorts  Problem Reduction  Space and Time Trade-Offs |  |
|  | 9 Apr | **Midterm-II** |  |
| 21 | 14 Apr | Hashing |  |
| 22 | 16 Apr | Introduction to Dynamic Programming |  |
| 23 | 21 Apr | The Knapsack Problem  Warshall’s Algorithm |  |
| 24 | 23 Apr | Floyd’s Algorithm  Introduction to Greedy Technique |  |
| 25 | 28 Apr | Prim’s Algorithm  Kruskal’s Algorithm |  |
| 26 | 30 Apr | Dijkstra’s Algorithm |  |
| 27 | 5 May | Huffman Trees and Codes  P, NP, and NP-Complete Problems |  |
| 28 | 7 May | Advanced Topics |  |
|  | 12 May | **Final Exam** |  |

\*Tentative (subject to change)

Last Update 01/11/2020