**CST 370 – Schedule**

**Fall 2020\* (Tentative)**

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| **No** | **Date** | **Topics and Materials** | **Events** |
| 1 | 24 Aug | Course Overview  Introduction to Algorithms |  |
| 2 | 26 Aug | Introduction to AWS Educate Cloud9 for Homework  Important Problem Types |  |
| 3 | 31 Aug | Fundamental Data Structures (Part 1) |  |
| 4 | 2 Sep | Fundamental Data Structures (Part 2) |  |
|  | 7 Sep | **Labor Day (No classes)** |  |
| 5 | 9 Sep | C++ Standard Library |  |
| 6 | 14 Sep | Analysis Framework  Asymptotic Notations and Basic Efficiency Classes |  |
| 7 | 16 Sep | Mathematical Analysis of Nonrecursive Algorithms |  |
| 8 | 21 Sep | Introduction to Recursion  Mathematical Analysis of Recursive Algorithms |  |
| 9 | 23 Sep | Depth-First Search |  |
| 10 | 28 Sep | Breadth-First Search  Introduction to Brute-Force  Selection Sort and Bubble Sort  Brute-Force String Matching |  |
| 11 | 30 Sep | Exhaustive Search |  |
| 12 | 5 Oct | Introduction to Divide-and-Conquer  Merge Sort |  |
| 13 | 7 Oct | Quick Sort  Binary Tree Traversals |  |
| 14 | 12 Oct | Introduction to Decrease-and-Conquer  Insertion Sort |  |
| 15 | 14 Oct | **Midterm** |  |
| 16 | 19 Oct | Topological Sorting  Algorithms for Generating Combinatorial Objects  Decrease-By-A-Constant-Factor Algorithms |  |
| 17 | 21 Oct | Variable-Size-Decrease Algorithms  Introduction to Transform-and-Conquer  Presorting |  |
| 18 | 26 Oct | Balanced Search Trees |  |
| 19 | 28 Oct | Balanced Search Trees  Heaps and Heapsort |  |
| 20 | 2 Nov | Heaps and Heapsort |  |
| 21 | 4 Nov | Linear-Time Sorts  Problem Reduction |  |
| 22 | 9 Nov | Space and Time Trade-Offs  Input Enhancement in String Matching |  |
|  | 11 Nov | **Veterans Day (No class)** |  |
| 23 | 16 Nov | Hashing |  |
| 24 | 18 Nov | Introduction to Dynamic Programming |  |
|  | 23/25 Nov | **Fall Break (No classes)** |  |
| 25 | 30 Nov | The Knapsack Problem  Warshall’s Algorithm |  |
| 26 | 2 Dec | Floyd’s Algorithm  Introduction to Greedy Technique |  |
| 27 | 7 Dec | Prim’s Algorithm  Kruskal’s Algorithm |  |
| 28 | 9 Dec | Dijkstra’s Algorithm  P, NP, and NP-Complete Problems |  |
|  | 14 Dec | **Final Exam** |  |

\*Tentative (subject to change)

Last Update 08/11/2020