**Syllabus**

**Week 1**

Jan. 19: Introduction ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture1.pdf))

Jan. 21. Algorithms and Growth functions ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture2.pdf))

**Week 2**

Jan. 26: Divide-and-Conquer ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture3.pdf))

Jan. 28: Master Theorem ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture4.pdf))

**Week 3**

Feb. 2: Fast Fourier Transform ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture5.pdf))

Feb. 4: Heapsort ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture6.pdf)) (HW1 Due)

**Week 4**

Feb. 9: Quicksort ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture7.pdf))

Feb. 11: Sorting in Linear Time ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture8.pdf))

**Week 5**

Feb. 16: Recitation Class by GTA

Feb. 18: Median and Order Statistics ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture9.pdf))

**Week 6**

Feb. 23: Binary Search Trees ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture10.pdf))

Feb. 25: Red-Black Trees ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture11.pdf))

**Week 7**

Mar. 1: Dynamic Programming ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture12.pdf)) (HW2 Due)

Mar. 3: Dynamic Programming ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture13.pdf))

**Week 8**

Mar. 8: Midterm Exam (Chapter 1-4, 6-9, Chapter 12-13, Chapter 30) ([Practice](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_MidtermPractice.pdf))

Mar. 10: Dynamic Programming ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture14.pdf))

**Week 9**

Mar. 15: Spring Break

Mar. 17: Spring Break

**Week 10**

Mar. 22: Dynamic Programming ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture15.pdf))

Mar. 24: Greedy algorithms ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture16.pdf))

**Week 11**

Mar. 29: Greedy algorithms ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture17.pdf)) (HW3 Due)

Mar. 31: Graph Algorithms: BFS and DFS([Slides](file:///E:\\Working\\Teaching\\CSE5311\\CSE5311%20Spring%202016\\Webpage\\CSE5311\\CSE5311_Lecture18.pdf))

**Week 12**

Apr. 5: Topological Sort ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture19.pdf))

Apr. 7: Minimum Spanning Trees ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture20.pdf))

**Week 13**

Apr. 12: Single-source Shortest Path ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture21.pdf))

Apr. 14: Recitation Class by GTA

**Week 14**

Apr. 19: All-pairs Shortest Path (HW4 Due) ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture22.pdf))

Apr. 21: Maximum Flow ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture23.pdf))

**Week 15**

Apr. 26: NP-Completeness ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_Lecture25.pdf)) (HW5 Due)

Apr. 28: Project Due and Class Presentation

**Week 16**

May. 3: Project Due and Class Presentation

May. 5: Final Review Class ([Slides](file:///E:\Working\Teaching\CSE5311\CSE5311%20Spring%202016\Webpage\CSE5311\CSE5311_FinalExamPractice.pdf)**)**

**Week 17**

May. 12: Final Exam 11:00am-1:30 PM