Proposed Course Calendar
CSE 5211 Analysis of Algorithms
Spring 2017 (April 26, 2017)

This course calendar predicts when class events are expected to happen. It is not written in stone. Nothing is certain. Things may change. Pay attention. It will be updated, but it may not be up to date. Colors are used to indicate an exam or assignment due date, a holiday, or a link to additional information. References the course include (Cormen et al., 2009), (Kleinberg and Tardos, 2006), and (Stinson, 1987).

Week 1
- Monday, January 9:
  - Course structure (Syllabus)
  - Projects and Algorithmics Workshop
  - Course management system
  - Read Chapter 2 in the textbook
- Wednesday, January 11: Mathematics and Problem Set 1
- Friday, January 13:
  - Review of projects
  - Mathematics for algorithms (Sums, induction, generating functions)

Week 2
- Monday, January 16: Martin Luther King Jr. Holiday
- Wednesday, January 18:
  - Generating functions; special numbers
  - Algorithm Analysis
  - Research groups for Algorithmics 2017 assigned
  - Read Chapter 1 in the textbook
- Friday, January 20:
  - Due Date: Problem set 1
  - Problem set 2
  - Gale–Shapley Demo

Week 3
- Monday, January 23:
  - Stable Matching & Representative Problems
- Wednesday, January 25:
  - Priority Queues: Heaps
  - Demo: Binary Heaps
- **Demo: Heapify**
- **Friday, January 27:**
  - Problem set 2 due
  - Advanced Topic: Fibonacci Heaps

### Week 4
- **Monday, January 30:**
  - Research groups submit proposal
  - Amortized Analysis
- **Wednesday, February 1:**
  - Graphs
- **Friday, February 3:**
  - Greedy Algorithms 1
  - Demo Earliest Finishing Time First
  - Demo Earliest Start Time First
  - First project due

### Week 5
- **Monday, February 6:**
  - Average case analysis of Quicksort
- **Wednesday, February 8:**
  - Dynamic Programming I
- **Friday, February 10:**
  - Dynamic Programming II

### Week 6
- **Monday, February 13:**
- **Network Flow I**
- **Ford–Fulkerson**
- **Wednesday, February 15:**
- **Network Flow II**
- **Friday, February 17:**
- **Network Flow III**

### Week 7
- **Monday, February 20:** President’s Day
- **Wednesday, February 22:** Computational Complexity
- **Friday, February 24:** Review of sample problems

### Week 8
- **Monday, February 27:**
  - Review of practice midterm
– Computational Complexity
• Wednesday, March 1: Computational Complexity
• Friday, March 3: Midterm examination

Week 9
• Monday, March 6: Spring Break
• Wednesday, March 8: Spring Break
• Friday, March 10: Spring Break

Week 10
• Monday, March 13:
  – Review of midterm
  – Computational Complexity
• Wednesday, March 15:
  – Computational Complexity
  – The Virus Problem
• Friday, March 17:
  – The Virus Problem (Solutions)
  – The Greatest Common Divisor (Euclid, Fibonacci, & Lame)

Week 11
• Monday, March 20:
  – Second project due
  – Numerics
• Wednesday, March 22:
  – The Aho–Corasick Algorithm
• Friday, March 24:
  – Research groups submit draft report
  – Edit Distance

Week 12
• Monday, March 27:
  – Sorting: Functional and Average Case Time Complexity
• Wednesday, March 29:
  – More Sorting
• Friday, March 31:
  – More Sorting

Week 13
• Monday, April 3:
  – Order Statistics
• Wednesday, April 5:
– Order Statistics
– Backtracking

• Friday, April 7:
  – Backtracking (0–1 Knapsack Problem)

**Week 14**

- Monday, April 10:
  – Traveling Salesman Problem

- Wednesday, April 12: Algorithmics 2017 (Groups 1 & 2)
- Friday, April 14: Algorithmics 2017 (Groups 3 & 4)

**Week 15**

- Monday, April 17: Algorithmics 2017 (Groups 5 & 6)
- Wednesday, April 19: Algorithmics 2017 (Groups 7 & 8)
- Friday, April 21: Algorithmics 2017 (Groups 9)

**Week 16**

- Monday, April 24:
  – Course review
  – Teammate and presentations evaluations submitted
  – Final report and presentation slides submitted

- Wednesday, April 26:
  – Course review and evaluation

- Friday, April 28: Study Day
- Saturday, April 29:
  – Final Examination, Crawford 212, 1:00 p.m. to 3:00 p.m.

References

