

## Syllabus

*January 18, 2000**Handout 2*

This syllabus will be adjusted as required to meet the needs of the class. See the course web page at <http://classes.cec.wustl.edu/~cs441> for up-to-date information.

**January**

- Tue 18 Introduction via some scheduling problems
- Thur 20 Greedy algorithms  
(**Handout Homework Assignment 1**)
- Tue 25 Greedy Algorithms (including Huffman codes)
- Thur 27 Dynamic Programming

**February**

- Tue 1 Dynamic Programming (cont)
- Thur 3 Dynamic Programming (cont)  
(**Homework Assignment 1 due**)  
(**Handout Homework Assignment 2**)
- Tue 8 Introduction/Geometric View of Linear Programming
- Thur 10 High-level Overview of Simplex Algorithm
- Tue 15 Duality
- Thur 17 Definition of NP, NP-completeness, and reducibility  
(**Homework Assignment 2 due**)
- Tue 22 Exam 1  
(**Handout Homework Assignment 3**)
- Thur 24 Example Reductions
- Tue 29 More Reductions

**March**

- Thur 2 Approximation Algorithms  
(**Homework Assignment 3 due**).
- Tue 7 Spring Break, no class
- Thur 9 Spring Break, no class

## March (continued)

- Tue 14 Approximation Algorithms (cont)  
(**Handout Homework Assignment 4**)
- Thur 16 Approximation Algorithms (cont)
- Tue 21 Upper and lower bounds for finding minimum/maximum
- Thur 23 Adversary lower bound technique  
(**Homework Assignment 4 due**)
- Tue 28 Exam 2
- Thur 30 Lower bound for median finding  
(**Handout Homework Assignment 5**)

## April

- Tue 4 Amortized Analysis
- Thur 6 LRU: Competitive Analysis of List Update
- Tue 11 Competitive Analysis of Paging
- Thur 13 Student Selected Topic\*  
(**Homework Assignment 5 due**)  
(**Handout Homework Assignment 6**)
- Tue 18 Student Selected Topic\*
- Thur 20 Student Selected Topic\*
- Tue 25 Student Selected Topic\*
- Thur 27 Student Selected Topic\*  
(**Homework Assignment 6 due**)

## May

- Friday 5 **Final Exam** (1-3pm)

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\* Two Topics will be selected from the following:

Linear-Time Median Finding Algorithm  
Randomized Algorithms  
String Matching  
Machine Learning  
Cryptography (covered in depth in CS 502A)  
Computational Geometry (covered in depth in CS 506T)  
Network Flow (also covered in CS 541T)  
Parallel Computation (covered in depth in CS 579M)