# CS 421
## *Algorithms*

### Schedule

| Theme | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---|---|---|---|---|---|---|
| **Foundations, Analysis, and Data Structures** | Introduction and Overview: Abstraction and Complexity | Stacks, Queues, and Lists | Sequences: Array-Based Containers | Recursion | Binary Trees | The Heap |
| | Algorithm Analysis | Study & Homework | Study & Homework | Study & Homework | Reading & Homework | Reading & Homework |
| **Sorting and Searching** | Selection-sort, Insertion-sort, Heap-sort, and Shell-sort | Priority Queues, PQ-sorting, Radix-sort, and Generic Bucket-sort | Merge-sort | Quick-sort | Review for Exam | Mid-term Exam |
| | Reading & Homework Due | Reading & Homework | Reading & Homework | Reading & Homework | Study | Reading & Homework |
| **Techniques and Strategies** | Dictionaries: Log files, Hash Tables, and Lookup Tables | Ordered Dictionaries: Balanced BST's: AVL Trees | 2-4 Trees | Ordered Dictionaries: Red-Black Trees | Introduction to Graphs & Graph Traversal: DFS | Graph Traversal: BFS & Template Methods |
| | Homework Due | Lab, Reading & Homework | Reading & Homework | Reading & Homework | Reading & Homework | Reading & Homework |
| **Design Principles** | Weighted Graphs, Shortest Paths | Minimum Spanning Trees | Design Principles Review for Exam | Final Exam | | |
| | Reading & Homework Due | Reading & Homework | Study | | | |