CS 320 - Analysis of Algorithms

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1 General Information

1. Meeting Times: MWF 09:00-09:50
   Location: G84, ESB-E
2. Contact Information: 749 ESB, ksmani@csee.wvu.edu
3. Office Hours: MW 10:00-11:00
4. Teaching Assistant: Lisa Kovalchick
5. Contact Information: lynn@csee.wvu.edu
6. Office Hours: WF 08:00-08:50
7. Textbook - [GT02]
8. URL - `http://www.csee.wvu.edu/~ksmani/courses/fa02/cs320/cs320.html`
9. Assessment:
   (a) Homeworks (2) - You will be handed a homework on September 6, due on September 13 and a second homework on October 18, due on October 25. Each homework is worth 10%, for a total of 20% of your grade.
   (b) Quizzes (2) - The first quiz will be held on September 20 while the second quiz will be held on November 8. Each quiz is worth 10% (for a total of 20%) of your grade and is closed-book.
   (c) Midterm - The midterm will be held on October 4 (in-class, closed book) and is worth 30% of your grade.
   (d) Final - The final will be held on December 10 (in-class, closed book, $08:00 - 10:00$ am) and is worth 30% of your grade.
10. Grade Boundaries
    (a) **A**: 75 and up
    (b) **B**: $60 - 74$
    (c) **C**: $50 - 59$
    (d) **D**: $45 - 49$
    (e) **F**: $0 - 44$
11. Makeup Policy - If for some reason, you are unable to attend a test or an exam, please meet me at the earliest and I will set an alternate date.

2 Syllabus Sketch

2.1 Algorithm Analysis

Methodologies for Analyzing Algorithms, Asymptotic Notation, Mathematical Review. These topics will be covered from sections 1.1, 1.2 and 1.3 of [GT02] (9 Lectures).

2.2 Basic Data Structures

Stacks and Queues, Vectors, Lists and Sequences, Trees, Priority Queues and Heaps, Ordered Dictionaries and Binary Search Trees. These topics will be covered from sections 2.1, 2.2, 2.3, 2.4 and 3.1 of [GT02] (10 Lectures).

2.3 Sorting and Selection

Merge-Sort, Quick-Sort, Selection. These topics will be covered from sections 4.1, 4.3 and 4.7 of [GT02] (6 Lectures)

2.4 Fundamental Techniques

The Greedy Method, Divide and Conquer, Dynamic Programming. These topics will be covered from sections 5.1, 5.2 and 5.3 of [GT02] (10 Lectures)

2.5 Graphs and Graph Algorithms

Data Structures for Graphs, Graph Traversal, Minimum Spanning Trees. These topics will be covered from sections 6.1, 6.2, 6.3 and 7.3 of [GT02] (3 Lectures).

I would like to reiterate that this is a sketch of the topics that we will be covering. For various reasons, I may choose to drop a mentioned topic or cover a new topic. In such cases, advance notice will be given.

3 Social Justice Statement

West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environement, based upon open communication, mutual respect and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religon, sexual orientation, color or national origin. Any suggestions to further such a positive and open environment in this class will be appreciated and given serious consideration. If you are a person with a disability and anticipate needing any type accommodation, in order to participate in this class, please advis me of the same and make appropriate arrangments with Disability Services ($293 - 6700$).

If you feel that you are being treated inappropriately or unfairly in any way, please feel free to bring your concerns to my attention; rest assured that doing so will not prejudice the grading process. In return, I expect you to behave professionally and ethically.

References

[GT02] Michael T. Goodrich and Roberto Tamassia. *Algorithm Design: Foundations, Analysis and Internet Examples.* John Wiley & Sons, 2002.