CSE 555 - Theory of Computation

Spring 2012

1 Personnel

Instructor: Rida A. Bazzi
E-mail: bazzi@asu.edu
Phone: 480 965-2796
Office: BY 430
Office Hours: Tuesday and Thursday: 9:30-10:15 and 12:00-12:45. Also, you can see me by appointment; simply send me an email to set up an appointment at a mutually agreeable time. Short notices will be hard to accommodate. Occasionally, the 12:00-12:45 office hours will conflict with faculty meetings. I will let you know about that ahead of time.
Class time and location: Tuesday and Thursday 10:30-11:45, BYAC 240.

2 Textbook

Author: Michael Sipser
Title: Introduction to the Theory of computation, 2nd edition

3 About the course

This is a graduate course on the theory of computation and complexity theory. The pace will be fast and you are expected to keep up by reading relevant sections from the book before class (even if you do not understand everything) and by doing all the homework assignments even if I will only be grading selected problems. I expect that you have a background in the theory of computation as it is taught in CSE 355. The topics to be covered are:

1. Turing machines and Church-Turing thesis
2. Decidability
3. Reducibility
4. Advanced topics: the recursion theorem and applications, decidability of logic theories, Kolomogrov complexity.
5. Time Complexity
6. Space complexity
7. Intractability
8. Advanced topics in complexity theory

4 Grading

- Attendance: 10%
- 3 tests: 60%
- 1 final: 30%

5 Office Hours

You are welcome to come to my office hours to ask any questions you have about the class material or other general questions. To make the best use of my time and your time, I expect you to come prepared. If your question is about course material, I expect that you have read carefully the relevant sections from the book. If your question is about problems from the book, I expect that you have made a serious effort to solve the problem. Being prepared will help greatly in understanding my explanations.

6 Attendance

Attendance and class participation are required. Attendance counts for 10% of the grade. If you miss more than 4 classes with no valid excuse, your grade for attendance will be zero.

7 Absences

Before deciding on the test dates, I would like you to give dates on which you will not be available due to religious holidays (in accordance with ACD - 304-04) or other university sanctioned activities (in accordance with ACD 304-02). I want you to notify me of those dates by Tuesday, January 10, 2012.

8 Cell phone and recording devices usage

I expect you to set your cell phone to silent/vibrate mode while in class. You can tape record the lecture, but you should let me know first if you plan on doing that.
9 Important ASU rules and regulations

You should be familiar with ASU’s Student Service manual, especially (SSM 104-02).

10 Special Accommodations

Students requesting disability accommodations should register with the Disability Resource Center (DRC) and present the instructor with appropriate documentation from the DRC.

11 Academic Integrity

- The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the university and other sanctions as specified in the academic integrity policies of ASU and the Ira A. Fulton Schools of Engineering. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism, or facilitating such activities.

- Under no circumstances will violations of academic integrity be tolerated. A violation of academic integrity policy will result in a grade of E in the course.

- If you are not sure if something is allowed or not allowed, you should ask me.

12 Subject to Change Notice

All effort will be made to follow the syllabus, but the syllabus can be modified if circumstances warrant it.