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Fall 2011

CS/MTH 410/610-01: Theoretical Foundations of Computing

Sarah Gothard

Wright State University - Main Campus

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CS/MTH 410/610 - 01 Syllabus

Course Information

- Term: Fall 2011
- Title: Theoretical Foundations of Computing
- Description: Turing machines; partial-recursive functions; equivalence of computing paradigms; Church-Turing thesis; undecidability; intractability. Four hours lecture.
- Meetings times: TTh 4:10 p.m. - 5:50 p.m. in Rike Hall 161
- Prerequisites: CS 466 (Introduction to Formal Languages) Minimum Grade of D

Textbook

Languages and Machines: An Introduction to the Theory of Computer Science, Thomas A. Sudkamp (2006). 3rd ed., Addison Wesley, ISBN 0-321-32221-5.

Course Requirements

There will be a midterm exam, a final exam, and several homework assignments.

Points

- Midterm Exam: 30%
- Final Exam: 50%
- Exercises: 20%

Grading

A: 90-100
B: 80-89
C: 70-79
D: 60-69
F: 0-59

Policies

Attendance

- Attendance is expected.
- You are responsible for all material and announcements given in class.
- If you are absent for an exam and have good reason, notify the instructor before the solution is covered in the next class.

Lecture Material

- It is your responsibility to find a way to keep up with the notes in class. You may bring a computer or an audio recording device if necessary. However, the notes of this class may not be disseminated beyond students in this class this quarter.
- If you miss any material or announcements because of your absence or lateness, it is your responsibility to get the material from another student.

Deadlines

Work is due at the specified deadline. Late work is seldom accepted.

Missing Grades

If something is wrong with your grade on Pilot, it is your responsibility to notify the instructor within a couple weeks of posting.

Accommodations

Students with disabilities or any additional needs are encouraged to set up an appointment to discuss any accommodations that may be necessary.

Instructor Late

If the instructor is late for class, students are expected to wait for 15 minutes after the class period starts before leaving.

Academic Integrity

- Be honest at all times.
- Do your own work.
- Act fairly towards others. For example, do not seek an unfair advantage over others by cheating with or by looking at other individual's work.
- Passing off other people's work as your own is unethical in any setting. In an academic setting, it is a breach of the university's policies.
- *All* cases of plagiarism, cheating, or academic dishonesty will be reported to the Community Standards and Student Conduct Office. Penalties will be handled on a case by case basis, ranging from a zero on the assignment for all involved students to a failing grade in the course for all involved students.
- Those who are complicit in academic misconduct will receive the same penalties as the primary offenders.
- Students are allowed to discuss the general requirements of exercises to make certain that they understand the problem.
- Students who have not finished an exercise may not look at other solutions.

Instructor Information

- Name: Dr. Sarah Gothard
- Email: sarah.gothard@wright.edu
- Office location: Russ Engineering Center 431
- Office hours: MTTh 9:30 a.m - 1:30 p.m.
- Office Phone: 775-5118

Course Outline

- Weeks 1-3: Turing Machines (chapter 8)
- Week 4: Turing Computable Functions (chapter 9)
- Week 5: Decision Problems and the Church-Turing Thesis (chapter 11)
- Weeks 6-7: Undecidability (chapter 12)
- Weeks 8-9: Mu-Recursive Functions (chapter 13)
- Week 10: Mu-Recursive Functions and review