Course: Computability & Computational Complexity

Time & Place: Tuesday 2:00-3:45pm, Physical Sciences 130

Instructor: Phokion G. Kolaitis; office: E2-345A; phone: (831) 459-4768, e-mail: kolaitis@cs.ucsc.edu, webpage: http://www.soe.ucsc.edu/~kolaitis/

Office Hours: Tuesday 11:00am-noon and Thursday 4:00-5:00pm in E2-345A

Prerequisites: CS 130 (and, indirectly, CS101).


Topics:
The first few weeks of the course will focus on Turing machines, recursive and recursively enumerable languages, the diagonalization method, and undecidable problems. The remaining of the course will be devoted to computational complexity with emphasis on the complexity classes P and NP, and, time permitting, PSPACE. A common thread throughout the course will be the systematic use of reductions between different algorithmic problems. The material covered in this course is contained in Chapters 8, 9, 10, and 11 of the book.

Evaluation: The course-work will be weighted as follows:

- Final Examination 40%
- Midterm Examination 25%
- Two in-class Quizzes (30 minutes each) 15%
- Homework 20%

Examination and Quiz Schedule:

1. Final Examination, Wednesday, June 8, 2011, 12:00-3:00pm
2. Midterm Examination, Tuesday, May 3, 2011, 2:00-3:45pm
3. Quizzes:
   - Quiz 1: Tuesday, April 19, 2011, 2:00-2:30pm
   - Quiz 2: Tuesday, May 24, 2011, 2:00-2:30pm

The examination and quiz schedule is fixed. In particular, requests for changes in the schedule will not be accommodated. Also, no time extension will be given for late arrivals on quiz day or examination day.

Academic Integrity: No form of academic dishonesty will be tolerated. Incidents of academic dishonesty will be reported according to UCSC’s policy on academic integrity, the full text of which can be found at http://www1.ucsc.edu/academics/academic_integrity/undergraduate_students/

Miscellanea

- After the grading has been completed, solutions to the problems in the quizzes and in the midterm examination will be distributed.
- “Sample” examination problems or “sample” quiz problems will not be distributed or posted.