Course: Computational Models

Time & Place: Monday, Wednesday and Friday 2:00pm-3:10pm, E2 194.

Discussion Sections:
- tbd
- tbd

Instructor: Dean Bailey; office: E2 249B; phone: 831-459-1339, e-mail: dbailey@soe.ucsc.edu

Teaching Assistant: Jennifer Flynn, email: jfly@soe.ucsc.edu

Office Hours:
- Bailey: Tuesdays and Thursdays, 2:00pm-4:00pm, E2 249B.
- Flynn: tbd


Goal: To cover most of the material contained in Chapters 0, 1, 2 and 3.

Syllabus: The following is a tentative syllabus for the course:

Overview
Tools: Mathematical Objects and Proof Techniques
Deterministic Finite Automata
Non-deterministic Finite Automata
Rabin-Scott Theorem
Regular Languages and Regular Expressions
Kleene's Theorem
Non-regular Languages
Pumping Lemma
Myhill Nerode Theorem
Minimizing States
Push Down Automata
Context-free Grammars and Languages
Normal forms
Non-context-free languages
Pumping Lemma for context-free languages
Turing Machines and Recursively Enumerable Languages
Church-Turing Thesis

Evaluation: The course work will be weighted as follows:

Final Examination 40%
One Midterm Examination 30%
Four in-class Quizzes 20%
Homework Assignments 10%

N.B. Passing grades in all four parts are required to pass the course.
• **Examination and Quiz Schedule:**
  
  1. Final Examination, Tuesday, June 12, 4:00pm-7:00pm
  2. Midterm Examination on Monday, May 7, 2:00pm-3:10pm
  3. Quizzes:
     - Quiz 1: Friday, April 13
     - Quiz 2: Friday, April 27
     - Quiz 3: Friday, May 18
     - Quiz 4: Friday, June 1

  The examination and quiz schedule is fixed. In particular, requests for changes in the schedule will not be accommodated; if you have conflicts with this schedule, please do not enroll in the class. 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://oasas.ucsc.edu/avcue/integrity](http://oasas.ucsc.edu/avcue/integrity). Specifically for this class, if you are caught turning in work as your own, that is not solely your own, or assisting others in doing so, a formal written report will be sent to your Department, the School of Engineering, and to your Provost and academic preceptor. Furthermore you will get a failing grade for the course and the incident will be noted in your evaluation.

• **Miscellanea**
  
  – All homework assignments are to be handed in at the beginning of Class on Mondays.
  – Solutions to homework problems will be presented in the discussion sections. They will not be posted.
  – Attendance at discussion sections is required.
  – We will provide solutions to the problems in the quizzes and in the midterm examination, after the grading has been completed.
  – We will *not* distribute or post “sample” examination problems or “sample” quiz problems.