Course: Computational Models

Time & Place: Tuesdays and Thursdays, 4:00pm to 5:45pm, Baskin Engineering, Room 165.

Instructor: Delbert D. Bailey;

Contact Information: Office: E2, 249B; Phone: 459-1339; e-mail: dbailey@cse.ucsc.edu

Office Hours: Wednesdays 2:30pm-4:00pm, Fridays 12:00noon-1:30pm


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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Final Examination</td>
<td>40%</td>
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<tr>
<td>One Midterm Examination</td>
<td>30%</td>
</tr>
<tr>
<td>Four in-class Quizzes (20 minute each)</td>
<td>20%</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>10%</td>
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A passing grade is required in *all* four categories to pass the course.
• **Examination and Quiz Schedule:**

  - **Quiz 1:** Tuesday, January 17, 2006, 4:00pm-4:20pm.
  - **Quiz 2:** Tuesday, January 31, 2006, 4:00pm-4:20pm.
  - **Midterm:** Tuesday, February 14, 2006, 4:00pm-5:30pm.
  - **Quiz 3:** Tuesday, February 28, 2006, 4:00pm-4:20pm.
  - **Quiz 4:** Tuesday, March 14, 2006, 4:00pm-4:20pm.
  - **Final:** Wednesday, March 22, 2005, 12:00noon-3:00pm.

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, if you are caught submitting work as your own in this class, 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 Tuesdays.

• **Other interesting textbooks, NOT required:**