Brief Syllabus of COSC 3302, Spring 2003
Introduction to Computation Theory
MWF 11:15 AM ~ 12:05 PM, Maes 111

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Office Hours: MWF 9:00 ~ 10:00 AM or by appointment

Topics:

This course is designed to give students a general picture of the underlying theory of computation. Topics to be covered include the language families in the standard hierarchy of formal languages such as regular languages, context-free languages, context-sensitive languages, recursive languages, recursive enumerable languages, and computable languages. Several formalisms that carry the same notion of computability will be studied in order to witness the well-known Church-Turing thesis. We will also discuss the theory of complexity that provides a theoretical framework for examining the efficiency of solving computable problems. Some typical complexity classes such as $P$, $NP$, $PSPACE$ and $NP$-complete will be introduced. We will also discuss the meaning and impact of the possible solutions to the famous open problem in theoretical computer science, $P =? NP$.

Prerequisites: MATH 2305, COSC 1374.


Note: Chapters 10 to 14 of the textbook cover the main topics of the course.

Examinations: (400 points) Two midterms (100 points for each) and Final Exam (200 points)

- All tests are accumulative, closed book, and indispensable. No makeup test will be given unless a documented absence is authorized by the university.
- Every student is allowed to bring a self-prepared crib sheet to the test. You can *write* down anything on both sides of one letter-sized paper. No circulation during the test.

Assignments: (100 points) About 10 homeworks (including programming assignments) will be given.

Attendance: (50 points) 10 attendances will be taken randomly.

Pop quizzes: (100 points) 10 pop quizzes will be given impulsively.

Grading Policy: You have 650 points to gain. Your grade is based on the scheme shown in the following table.

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>540 ~ 650</td>
<td>A</td>
</tr>
<tr>
<td>420 ~ 539</td>
<td>B</td>
</tr>
<tr>
<td>300 ~ 419</td>
<td>C</td>
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<tr>
<td>200 ~ 299</td>
<td>D</td>
</tr>
<tr>
<td>0 ~ 199</td>
<td>F</td>
</tr>
</tbody>
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Excellent
Good
Satisfactory
Passing
Failure