

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

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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 hierarch 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.

Textbook: *Discrete Structures, Logic, and Computability*, by James L. Hein, Jones and Bartlett Publishers, Inc. 2002, Second Edition.

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.

Points	Grade	
540 ~ 650	A	Excellent
420 ~ 539	B	Good
300 ~ 419	C	Satisfactory
200 ~ 299	D	Passing
0 ~ 199	F	Failure