Fall 2015

CSCI 3102

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Introduction to the Theory of Computation
Fall 2015

Catalog Description:

An introduction to the theory of computation, including automata; computability, and complexity. Topics include automata and languages: decidability, reducibility, and the Church-Turing thesis; complexity and intractability.

Prerequisites:

CSCI 2125 (*Data Structures*) and MATH 3721 (*Discrete Structures*), with grade of C or better.

Text:

An Introduction to the Theory of Computation, Eitan Gurari, Computer Science Press, 1989 (ISBN 0-7167-8182-4). The link above will bring you to the online version of the textbook. For a hardcopy of the textbook, you can click on the following links to obtain one:
    Amazon.com page for the Gurari text
    Barnes & Noble page for the Gurari text
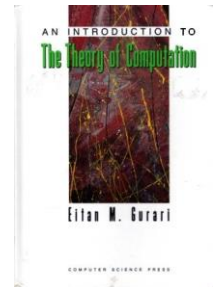
Course Objectives:

As, perhaps, the first course that the enrolled student has taken dealing with formal computer science, this course seeks to introduce "some of the more important terminologies and questions concerning programs, computers, problems, and computation." At the end of the course, students should be able to:

- Acquire a fuller, more formal understanding of the characteristics of programs, computers, problems, and computation;
- Use precise and well-defined terminology to clearly and accurately communicate intuitive thoughts about programs, computers, problems, and computation;
- Possess and use introductory tools for understanding and using formal specifications in the larger field of computer science.

Course Topics:

We intend to cover the following chapters of the textbook (more or less, time permitting):

- Ch. 1: General Concepts
- Ch. 2: Finite-Memory Programs Classes
- Ch. 3: Recursive Finite-Domain Programs

- Ch. 4: General Programs
- Ch. 5: Resource-Bounded Computations

Office Hours:

My office is MTH 308A. I will be available at the following times: M,W,F 12:00 noon - 2:00 p.m.; additional office hours will be posted after the course schedules become more firm. Other times by appointment only (504-280-7370 or by e-mail to *ndepano@uno.edu*).

Exams:

The test schedule is tentative. We will have two tests plus the final exam. Tentative dates for the tests are September 28th and November 4th. **The final exam is firmly scheduled as follows: Wednesday, December 9th, from 3:00 p.m. - 5:00 p.m.**

Homework:

A number of homework exercises may be assigned during the term. Homework assignments are typically submitted through Moodle and are due at the time announced for each homework. Late assignments incur penalty as described in the following paragraph:

Every full day that an assignment is late doubles the penalty of the previous day, starting with one percentage point deducted on the first day. So in practice, an assignment that is turned in a week late automatically gets an F, having already incurred a penalty of -64!

Homework assignments are individual projects. Incorporation of ideas or material other than your own **must be explicitly referenced**.

Course Grades:

During the semester you will be assigned numeric grades on the homework and tests. However, the final grade will be submitted as a letter grade and will be done according to the following procedure: Homework will comprise 30%; tests make up the remaining 70%. The test component will be computed as follows: Two in-class tests and the final exam counted twice give four grades. The highest three will be used to compute the test component of your final grade. For instance if your in-class test grades are 70 and 80, and your final exam grade is 75, then the grades 80, 75, 75 (*i.e.*, highest three of 70, 80, 75, 75) will be used.
Letter grade equivalences are: [90 - 100] = A, [80 - 90) = B, [65 - 80) = C, [50 - 65) = D, [0 - 50) = F. Final grades may be curved at the discretion of the instructor, but don't count on it.

Attendance:

Attendance will be taken regularly during the semester. This will enable the instructor to monitor performance of students vis-a-vis presence and participation in class. Although not a formal component of the computation of grades, good attendance will impact final grades in borderline cases. Important course content is often introduced outside of the published sources and/or scheduled presentations. Good attendance is always an excellent indication of the commitment of the student in the learning enterprise.

Students With Special Needs:

We provide here a link to the University's Office of Disability Services webpage (http://www.ods.uno.edu/index.cfm). As expressed therein, the University pursues two primary objectives: (1) to ensure compliance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) in regard to equal access for qualified students to academic programs; and (2) to uphold the academic integrity of UNO. Part of this policy regulates the accommodative testing services. These accommodations are made available in the ODS Accommodative Testing and Adaptive Technology Center (ATATC), located in the Library Room 120.

Academic Dishonesty:

Finally, we must call your attention to the University's policies regarding academic dishonesty (http://www.studentaffairs.uno.edu/pdfs/AcademicDishonestyPolicy.pdf). Academic dishonesty includes cheating, plagiarism, and collusion. In particular, it includes "the unauthorized collaboration with another person in preparing an academic exercise" and "submitting as one's own any academic exercise prepared totally or in part for/by another."
In the event of academic dishonesty, **the student will be assigned a grade of 0** on the exam or exercise, the student will be informed in writing of the action taken, and a copy of this letter will be sent to the Assistant Dean for Special Student Services.

Note that October 14th is the last day to drop classes this term.