Instructor

Jack Lutz (lutz@cs.iastate.edu)
Office: 206 Atanasoff, 294-9941
Office Hours: Mondays 12:10 - 1:00 pm
              Tuesdays 2:30 - 3:30 pm
              Other times by chance or appointment

Teaching Assistants

Adam Case (adamcase@iastate.edu)
Office: 0145 Pearson
Office Hours: Thursdays 1:00 - 3:00 pm

Gopalakrishnan Krishnaswamy Sivaprakasam (sgk@iastate.edu)
Office: 0145 Pearson
Office Hours: Wednesdays 10:00 - 11:00 am

Lectures

Mondays, Wednesdays, and Fridays, 9:00 - 9:50 am, 0105 Kildee

Recitations (optional)

Thursdays, 8:00 - 8:50 am, 2158 Pearson
Thursdays, 11:00 - 11:50 am, 2131 Pearson

Course Objectives

By the end of the course students should have a working knowledge (ability to solve problems with rigorously justified reasoning) of the following.

1. The concepts of state, discrete time, state space, and state transition.
2. The systematic design of finite automata and equivalent formalisms.
3. Correctness proofs for finite automata.
5. Turing machines and computational universality.
6. Decidability and computable enumerability.
7. Undecidability, uncomputability, and reductions.
8. Algorithmic information and data compression.
10. Stack machines and context-free languages.
Text


The course will also cover material that does not appear in the text. *The primary resource for course material, in or out of the text, is the course lectures. You are encouraged to take careful notes. Recording or photography of lectures without written permission is prohibited.*

Grading

Three components, weighted as follows, will determine grades.

- Homework: 40%
- Midterm Exam: 25%
- Final Exam: 35%

**Final Exam** (per ISU schedule)

Tuesday, December 16, 7:30 – 9:30 am. The final exam cannot be taken early.

Disability Accommodations

Students with disabilities that require accommodations are encouraged to contact the Student Disability Resource office, 1076 Student Services Building, 294-7220, obtain an SAAR form verifying the disability and specifying the accommodation(s) needed, and meet privately with the course instructor early in the semester to work out an accommodation plan.

Academic Integrity

Computer science has become a vital component of human welfare, and it must maintain the highest standards of integrity and ethics. Students found responsible for any instance of academic misconduct in this course receive an F grade for the entire course and are subject to any additional penalties that may be imposed by the office of the Dean of Students. Clear discussions of academic misconduct and its adjudication appear on the web pages of the Dean of Students office.
Homework Guidelines

Homework will be posted most weeks and will be due at the beginning of class, usually on the first Friday following posting. Homework will be due most Fridays, starting September 5 and including the last week of class. Late homework loses 20% of its value per weekday unless other arrangements have been made. Your worst homework will be given 0.5 the normal weight and your best homework will be given 1.5 the normal weight.

When doing homework, you are allowed to collaborate with others and consult books, journals, notes, etc., subject to the following restrictions.

1. You should write the final solutions alone, without the aid of such sources, and understand them fully.
2. Your solutions should include written acknowledgment of books, articles, and individuals who have helped you achieve them. (It is promised that such acknowledgment will never adversely affect any student's grade.)

Part of knowing something is knowing whether you know it. For each problem in this course, on homework and exams, blank space or a clear statement that you do not know how to solve it will receive 30% credit. If you do submit a solution, you will receive 0% - 100% credit, per the usual criteria for awarding partial credit when answers are partially correct.

When proofs are required, try to make them both clear and rigorous. Even when proofs are not required, you should justify your answers and explain your work.

Nullius in verba.
(Nothing upon another's word.)
Motto of the Royal Society

In questions of science the authority of a thousand is not worth the humble reasoning of a single individual.
Galileo Galilei