CIS 770. Formal Language Theory, Spring 2014

Basics

- Classes are MWF, 9:30-10:20am, in Nichols 236.
- The Captain's log gives up-to-date information about what has been covered so far and what is expected to happen in the near future.
- K-State Online is used to report grades, and to upload material relevant for the course (slides, assignments, model solutions, etc.)

Instructor: Torben Amtoft

- Email: tamtoft hat ksu dot edu
- Office: 219C Nichols
- Office Hours: Tuesdays 2pm-4pm, and by appointment
- Phone: 532-7917

Required Textbook


Prerequisites

Students should preferably have taken MATH 510 (Discrete Mathematics), or an equivalent course.

Specifically, students are expected to have the following background:

- Understanding of basic concepts of set theory, functions and relations, and propositional and predicate logic.
- Ability to write rigorous proofs, similar to the proofs in Chapter 1 of the textbook.

Expected Outcome

- To develop understanding of the use and properties of the common classes of formal languages, grammars, and automata.
- To develop mathematical rigor in solving theoretical problems.
- To develop mathematical creativity.
Topics

The early part of the course will be based on Chapters 1-4 of the textbook; much of this material may be review, but it is necessary to cover it in order that the proper foundations are laid.

The core of the course is taken from Chapters 5-9. If time permits, we may also look briefly into temporal logics.

Grading

- Homework: 20%
- Exam 1, March 5: 20%
- Exam 2, April 16: 20%
- Final Exam, May 14: 30%
- Class participation: 10%

Class participation involves not just being physically present, but also actively contributing to the learning climate, by answering questions, doing simple exercises on the board, asking interesting questions, etc.

Grades are curved, but as a rule of thumb, expect that it requires 80% to earn an A, 60% to earn a B, 40% to earn a C, and 20% to earn a D. In general, my approach to grading is expressed well by this piece by S.A. Miller.

Homeworks

There are two kinds of homework exercises, with the former contributing the majority of the total homework credit.

- There will be frequent (15-20 during the semester) assignments through the Gradiance system. Instructions for using it will be posted on K-State Online.
- There will be around 7 "manual" assignments, to be handed in on paper: either to me in class, or to the homework tray in the CIS office, Nichols 234 (please make sure to include your name, my name, the course number, and that they stamp it with not only the date but also the time of day).

Assignments that are late will not be graded, unless in case of documented medical or family emergencies.

Exams

will be closed book but you can bring up to 4 sheets (double-paged) of hand-written notes. The final is comprehensive, but with emphasis on the last part of the course. In case you miss an exam due to a documented medical or family emergency, and a make-up exam is not possible, you'll be assigned for that exam the average score of your other two exams.
Grievances

If you think that the instructor has made an oversight when grading your test or your homework, you are of course very welcome to ask for clarification. But complaints about judgment calls, like how much credit to give for a partially correct solution, are not encouraged—it is like arguing balls and strikes. In particular this holds for homeworks (since each assignment carries so little weight towards the final grade).

Academic Honesty

Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

You are very welcome to discuss the course material, as well as specific questions, with your fellow students. However, all submitted answers must be your own work: you are not allowed to show your answers to anyone else, or look at the answers of any other student; neither are you allowed to consult previous model solutions that may be around, or solicit the Internet for solutions to specific homework problems. If you are in doubt about what is permissible, please ask me.

Students with Disabilities

Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Expectations for Classroom Conduct

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.
Acknowledgment

Much of this syllabus is adapted from the course taught by Rodney Howell.

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Torben Amtoft