

CSE 3321 - Automata and Formal Languages

Lectures: TuTh 12:45pm–2:05pm, Knowlton Hall 195

Instructor: Luis Rademacher

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Web page: Go to <http://www.cse.ohio-state.edu/~lrademac/>, then “Teaching”, then “Au15”.

Office hours by instructor: Tu 2:30pm–3:30pm or by appointment.

Office hours by grader: To be announced.

Textbook: Michael Sipser, Introduction to the Theory of Computation, 3rd edition.

Other optional books:

- Introduction to Languages and the Theory of Computation, John C. Martin.

Prerequisites

Prereq: 2231 (Software II) or 321, and 2421 or 360, and 2331 (Foundations II) or Math 566. Not open to students with credit for 5321 (625).

About the course

The course is not superficial: The course demands basic mathematical maturity and will involve some proofs.

Topics (tentative)

1. Mathematical background

2. Finite automata
3. Regular expressions
4. Non-determinism
5. Non-regular languages
6. Context-free languages
7. Non-context-free languages
8. Turing machines
9. Decidability
10. Reducibility
11. Time complexity

Grading (tentative)

Homework every one to two weeks. No late homework will be accepted. For homework, collaboration is allowed, but every student must write and submit his or her own solutions, and include an explanation of any such collaboration. Looking for solutions from external sources (books, the web, etc.) is prohibited.

Two midterms in class (9/24 and 10/20) and one final exam (Tuesday Dec 15 2:00pm-3:45pm).

Formula (tentative): 20% homework, 25% each midterm, 30% final exam.