Course Summary: Formal models of computation: Finite Automata and Turing Machines. Universality Theorem and the Church-Turing Thesis. Computability Theory (“What can or cannot be computed?”) and Complexity Theory (“How efficient can a certain computation be?”). NP-completeness and PSPACE-completeness.

Lectures: TTh 3:00-4:20, 302 CS Building

Precepts: Weekly, Tue 7:00-8:00 pm, 102 CS Building

Instructor: Prof. Sean Hallgren, 307 CS Building, hallgren at cs

Undergraduate Coordinator: Donna O’Leary, 410 CS Building, 258-1746, doleary at cs

Teaching Assistant: Siddhartha Brahma, 001C CS Building, 258-7418, sbrahma at cs, Office hrs: Wed 4:30-5:30 pm or by appointment.

Prerequisites: COS341 or equivalent course.


Assignments: There will be weekly assignments due in class on Thursdays.

Exams: There will be a take-home midterm and a take-home final exam.

Grading: 50% assignments, 15% midterm, 35% final.

Honor Code for this class: Discussions and collaborations with your classmates on homework assignments are OK, but you must write up your solutions on your own, and you must list your collaborators for each problem; no points will be deducted for collaboration. No collaborations are allowed on examinations.

The homework questions are selected for their pedagogical value and may be similar to questions on problem sets from past offerings of this course at Princeton (or some other universities). Using any pre-existing solutions from these sources, or using solution material from the Web is not allowed.