

**CS 516—Software Foundations via Formal  
Languages—Spring 2025**

**Final Project or Examination**

## **1 Introduction**

As described in the course syllabus, you will have to either complete a Final Project or take the in-class Final Examination. This assessment unit is worth 200 points, making it equivalent in weight to two problem sets.

## **2 Final Examination**

The Final Examination is scheduled for Tuesday, May 6, from 12noon–2pm. It will be closed-book, closed-notes and cumulative—i.e., you may be tested on material from the entire course. An old Final Exam plus my model answers to it are posted on the course website, and will give you an idea of what to expect.

## **3 Final Project**

The focus of a Final Project can be anything related to the course. E.g., it could range from proving a theoretical result, to using the algorithms implemented by Forlan to do something sophisticated, to a combination of these possibilities. The work associated with a project should be approximately equal to the work of two problem sets.

Once you have an idea for a project, you must negotiate the details with me, and as the project progresses, you must continue to check-in with me about how it is developing. If you need help settling on a topic, I have various ideas that I can share with you one-on-one.

One possibility is to read ahead in the book, and to pick a project that pertains to that material. In Section 3.15, we'll study several applications of the material from Chapter 3, including synthesizing deterministic finite automata (DFAs) using closure algorithms for regular languages plus minimization of DFAs. In Chapter 5, we'll study a functional programming language used as alternative to Turing machines for studying computability. Both of these parts of the book could be sources for project ideas.

The Final project will be due by 11:59pm on Tuesday, May 6—the Tuesday of Finals Week.

## **4 Committing to Your Choice of Exam or Project**

At any point in the semester up to the end of Friday, May 2, you may notify me that you want to take the Final Exam instead of completing a Final Project. In particular, if you've been working on a project but you are not satisfied with your progress, you can instead opt for taking the exam.