

Syllabus (Fall 2021)

Due to the nature of the Covid-19 pandemic, the material on this page may be subject to change.

All times listed are MSU local (Eastern time zone).

Description

We will be studying the translation of programming languages. Our primary goal for the semester will be to build a compiler that will translate an input language through an intermediate language to a hardware-specific assembly language. In the process of completing this goal, we will explore lexical, syntactic and semantic analysis; compile-time error handling; code optimization and code generation. CSE450 is a three credit course. (3 credits)

Overview

CSE450 will be taught in person this semester (Fall 2021). You will find links to the lecture recordings and any course material presented on the schedule link on the navbar of the course homepage.

Lectures will be held:

- Tuesday, Thursday 3:00-4:20pm (Eastern Time, MSU local) in 1279 Anthony Hall.

Our course D2L will contain grades as they come in but not much else. This site will hold links to content for the course.

Helproom and Office Hours

The times for helproom and office hours will be posted when they become available. Helproom will tentatively be held in the study space on the 3rd floor of Anthony Hall. Times will be announced after the start of class.

Office hours will be held online via Zoom with Dr. Rupp. You will find a link on the “home” page of this site. Times will be announced after the start of class.

Textbook

There is no required textbook for this course.

Other course material

All course material will be linked to from the course schedule or using the navbar on the left.

Online Resources

You will find links to these resources on the navigation bar to the left.

Resource	Description
Piazza	Piazza is a third-party course content and bulletin board system. Use Piazza for all communication with course instructors including questions about course material, homework questions, and (using the private posting feature) re-grade requests.
Zoom	Office hours with Dr. Rupp will be held via Zoom. You will find the link to his meeting room on navigation bar.
Mimir	We will be using Mimir for the compiler project and homework assignments. I will be disabling the Mimir IDE for the compiler project. I want you to use an IDE like Visual Studio Code with a built in debugger to test your design as you develop.
Google Drive	Lecture slides and code will be stored on Google Drive. You will find links to this material on the course schedule or in the Google Drive link on the navigation bar to the left.
MSU Mediaspace	This is where you will find recordings of the lectures. You will find links to these recordings on the course schedule.
D2L	We will be using D2L just to hold grades.

As there is a lot of content and different online resources, use the schedule to access the material for a particular day.

Attendance policy

Attendance is not required but it is for your benefit to attend class. There will be one mid-term some time in November that will be held in class.

Assessments

There will be three types of assessments in this course: homework, projects, and an exam mid-way through the semester.

Homework (30% of grade)

Weekly homework will be posted on Mimir. The content will cover material presented the previous week in lecture. While I encourage you to work together on your homework **do not share code**. This prohibition includes “showing” another student your code. The reason for this is simple: we want you to do your own work and seeing a solution prevents that from happening. I want you to learn, not copy.

I will automatically drop the two homework assignments that “hurt” your grade the most.

Projects (60% of grade)

The bulk of your work in this course will be to implement the compiler via projects. While I encourage you to use your own solution to build upon with each assignment, I will be making an instructor starter available for you to use as a base as we proceed.

Assignments will be submitted to Mimir and must be in the proper layout as described in class. I will be using unit tests in evaluating your code. These tests will be given to you at the start of each project. **I want you to develop your project solutions using an IDE like Visual Studio Code.** I will be disabling the Mimir IDE because I want you to use your local debugger when writing your solution.

As with homework **do not show your project code** to another student in the course.

Projects will be due at 10pm MSU local time via Mimir. Late submissions will be accepted for two days, with a 10% penalty applied to each day the project is late.

Project Software For the purposes of this course, we will be using:

- Python3.8 (or 3.9)
- The rply parser-generator package
- The keystone assembler package (tentative)
- The unicorn processor emulator (tentative)

For a development environment, I strongly encourage the use Microsoft’s Visual Studio Code. It is free to use, highly extensible, and is what I will be using in class for demonstrations.

Mid-Term Exam (10% of grade)

There will be a mid-term exam in this course. A sample exam will be posted as we get closer to the exam date. There is no final in this course.

Grade Scale

Percent of Points	Grade
90%	4.0
85%	3.5
80%	3.0
75%	2.5
70%	2.0
65%	1.0
<65%	0.0

Instructors reserve the right to alter the grading scheme.

Regrading

All grades will be posted to D2L and Mimir for your review. Assessment regrading requests should be made within one week of the release of the score via a private post on Piazza to instructors with the “regrade” folder selected. Instructors reserve the right to regrade an entire assessment instead of just an individual component during re-evaluation.

Academic Integrity

The purpose of this course is to learn. **Do not share your code.** Collaborating on the project or homework by sharing code or any collaboration on the exam will result in an ADR being filed and, depending on the severity of the collaboration, a 0 on the assessment or failure (0.0 grade) in the course.

Circumvention of the testing system for an assignment will result in a zero on the assignment and an ADR being filed. Do not cheat.

This course has adopted the Chegg and Similar Sites policy. Submission of student work (e.g. assignments and/or exam solutions) based on those found on Chegg, Brainly, Quizlet, and other similar websites will result in an Academic Dishonesty Report (ADR) and an automatic failing grade of zero (0.0) for the course. The ADR for students personally posting questions from assignments or exams to these sites will request additional sanctions.

Spartan Code of Honor Academic Pledge

“As Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my

peers, and take pride in knowing that honor in ownership is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do.”

Absence & Religious Observance

I want to work with you should you have an issue with meeting deadlines.

It has always been the policy of the MSU to permit students and faculty to observe those holidays set aside by their chosen religious faith. Please use Piazza to let the instructor know if you need to alter assessment deadlines.

To make up course work missed to participate in a required activity for another course or a university-sanctioned event, you must provide the instructor with adequate advanced notice and a written authorization from the faculty member of the other course or from a university administrator.

Disabilities

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation (“VISA”) form. Please arrange for this form to be sent to the instructor at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored.

Commercialization

Commercialization of lecture notes and university-provided course materials is not permitted in this course.