

Course Introduction

January 22, 2026

Compiler Design

CSCI 425 & CSCI 598 (grad)



Your homework is here (write this down or bookmark it)

<https://cs.mcprogramming.com/>

Click on "Schedule" in the Wiki tab bar.

You do not (yet) need a login, and trying to "log in" will get you nowhere.

Lexing and Scanning

Context Free Grammars

LL Parsing (Recursive Descent)

LR Parsing (Bottom-Up)

Parse Tree \rightarrow Abstract Syntax Tree \rightarrow Target

Formal Learning Groups

(“...and what are these?” you wonder)

What Your Peers Think

1. What aspects of instruction did you find effective for promoting your learning in this course?

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More recent thoughts from your peers

(Spring '25 Canvas Course Evaluations)

15 - What, if anything, could you have done differently to learn more in this course?	
Response Rate	2/12 (16.67%)
<ul style="list-style-type: none">• Started the projects earlier• I should have taken opportunities to work in groups for projects which allowed that. Also, I should have considered the standards the compilers for different languages would hold me to for code quality when starting the semester - sometimes it is useful to write janky code that blows up if a string can not be converted to an integer, instead of having to prove the correctness of each and every operation.	

More recent thoughts from your peers

(Spring '24 Canvas Course Evaluations)

15 - What, if anything, could you have done differently to learn more in this course?	
Response Rate	4/19 (21.05%)
<ul style="list-style-type: none">• Read the textbook more.• I didn't read the textbook much and could probably benefit from reading some more of it.• Not take so many credit hours so that I couldve spent more time on this class.	

More recent thoughts from your peers (Spring '23 Canvas Course Evaluations)

14 - What changes could be made to this course to better help you learn? This feedback is most helpful if you consider aspects of the course that are within the instructor's control, provide specific suggestions for changes, and are respectful in how you deliver the feedback.

- I think increasing this to a 4 credit hour class would be beneficial. The class would really benefit from an extra lecture and the workload would be better reflected in the credit hours.
- Introduce projects earlier and give a little more time on them (especially toward the end of the semester). I guess it was hard this semester with the weather closures messing with schedules.

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- I still do not love the LGAs. I would prefer weekly worksheets that cover the same content and that were graded. I also really struggle with nightly assignments as my schedule is really busy. Reading a chapter of a textbook isn't a problem, but also doing a worksheet is challenging. I would also like instructor solutions to the LGAs as a lot of the time I did the LGA wrong and then was confused with why what I tried to implement didn't work.

There are a lot of “red flags” in this critique (nightly assignments, one chapter in a sitting, no mention of their learning group interaction) — it seems this student approached learning in this course in a way orthogonal to how it was designed.

This makes me sad : (

...just a few more morsels.

(various semesters)

- ▶ The projects were hard but very interesting.
- ▶ The programming projects were the most helpful in helping me learn the material. **They make you stand on your own two feet in a way that is not encouraged by many other courses at Mines.** The learning group assignments required a lot of reading but were helpful as a whole.
- ▶ This has been handsdown the best cs class that I have taken at mines both from a content standpoint **and improving my engineering skills** standpoint.

Minor Course Details :)

Syllabus & Book & Grading & alamode Assignments

Canvas **will not** be used — the course has been published with a lone announcement saying (you guessed it): *Canvas won't be used.*

(You might use the Canvas course if you choose to use the VitalSource eTextbook option, but that's up to you.)

Announcements via Email to your mines.edu address.

Q & A

Got some?

Compilers, compilers, everywhere...

We are all CS people, and we all use compilers all over the place. `g++`, `LATEX`, `grep(1)`, `ed/vi/perl/awk` **search and replace**, `pandoc`, `javac`, `python -OO ...`

Take two minutes and reflect a little bit:

- ▶ Think of two of your favorite features of compilers you use. Be **careful**! These are things like *very helpful* warning or error messages, or particular options and invocations (e.g.: `-syntax-only`). These are not features of an editor or IDE! We want features or properties of **compilers**.
- ▶ What are two critical tasks you expect any compiler to always be able to do, and always do correctly.

Introduce Yourself



Name (First and **Last**)

Major & Level (Jr, Sr, Grad, . . .)

Complete the sentence “(I | I’ m a) ??????”