

Syllabus

CS 3210: Principles of Programming Languages
Metropolitan State University of Denver
Fall 2019 - Section 001 - M/W 12-1:50pm - AES 210

Course Description

This course traces the evolution of programming languages, identifying and analyzing the contributions made by several significant languages and their successors. It provides the opportunity for the students to learn more about the main programming paradigms, namely: imperative, object-oriented, functional, and logical. Specific issues related to programming language implementation, such as nesting block structures, static and dynamic scoping, interpreted and compiled languages, among others are discussed in this course.

Prerequisites:

CS 2050 (Computer Science 2), CS 2400 (Computer Organization 2), CS 3250 (Software Development Methods & Tools), MTH 3170 (Discrete Mathematics for CS), all with a grade "C" or better, or permission of instructor.

Required Materials:

Sebesta, R. Concepts of Programming Languages. 11 Edition. Pearson.

Supplementary material, including this syllabus, the class schedule, slides, papers to read, and assignment instructions will be made available through Blackboard. You should also use Blackboard to submit your work and check your grades. Expect to be asked to setup development tools throughout this course. Link to tutorials will be provided to you.

Course Learning Objectives or Outcomes

Upon completion of this course the student should be able to:

1. Discuss trade-offs in the design of historical imperative languages.
2. Trace the execution of programs in languages using various schemes for visibility of variables.
3. Create a finite state machine for a given regular grammar.
4. Implement a recursive descent parser for a given context free grammar.
5. Demonstrate techniques for implementing recursive subroutine calls and data constructs.
6. Translate control structures to low-level constructs.
7. Create programs in a functional and declarative languages for problems that exemplify the strengths of a functional language.

Course Grading Policy

Homework (20%)

These are relatively short assignments designed to give you an opportunity to practice the topics discussed in class in more detail. You should be able to complete these assignments in less than an hour. Expect to have homework assigned once a week (on average). Homework is to be completed by yourself (they are not group work). Homework grades will use a 0-3 simplified scale.

Programming Assignments (40%)

At least four programming assignments will be given during the semester. These assignments may involve using a new programming language, exploring its specific features and capabilities, or learning how to develop a simple programming language parser to illustrate implementation aspects of a programming language. Because programming assignments will require more time and planning, you will be given at least two weeks to complete your work.

Each programming assignment will be graded out of 100 points. A detailed grading rubric will be provided for each assignment. We encourage you to work with a classmate on these assignments type but no more

than two students in a team (no exceptions). The allowed collaboration in programming assignments should be restricted to within the members of each team.

Midterm Exam (15%)

The midterm exam is scheduled to October 9. You may only re-schedule a test for college-approved absences or documented illness. In either case, you must contact your instructor before the beginning of the exam.

Final Exam (20%)

The final exam will be cumulative and will be given on TBD.

Participation (5%)

Attendance in class and active participation during class activities.

Late Work Policy:

I will not accept submissions after an assignment deadline, unless because of illness, family trauma, or a documented excuse (e.g., participation in a competition). In all cases you are required to contact your instructor prior to the deadline.

Grading Scale

Final grades will be calculated on the standard scale using pluses and minuses. I only accept complains about grades within 48 hours after grades are posted on Blackboard. You will receive a notification by e-mail. It is your responsibility to check your grades right away and contact me in case there are any issues.

General University and Academic Policies, and Support Services

All institutional policies can be accessed through the **Institutional Policies and Academic Support Services** page, located under the **Syllabus & Course Info** link on the navigation menu. The page includes information and links to:

- General University Policies such as Equal Opportunity and Americans with Disabilities Act, Electronic Communication Policy, Sexual Harassment, etc.
- Academic Policies and Procedures such as Grades and Notations, Grade Appeal, Fresh Start, etc.
- Academic Dishonesty and Student Code of Conduct
- Location and access to Academic Support Services such as Auraria Library, Writing Center, Tutoring Center, etc.

Institutional Accessibility Policies

- [ADA Policies and Procedures](#)

ADA Syllabus Statement

The Metropolitan State University of Denver is committed to making reasonable accommodations to assist individuals with disabilities in reaching their academic potential. If you have a disability that may impact your performance, attendance, or grades in this class and are requesting accommodations, then you must first register with the Access Center, located in the Plaza Building, Suite 122, 303-556-8387.

The Access Center is the designated department responsible for coordinating accommodations and services for students with disabilities, and issuing accommodation notification letters. Accommodations will not be granted prior to my receipt of your ADA Accommodation Notification Letter from the Access Center. Please note that accommodations are never provided retroactively (i.e., prior to the receipt of your ADA Accommodation Notification Letter.) Once I am in receipt of your official Access Center ADA Accommodation Notification Letter, I would be happy to meet with you to discuss your accommodations. All discussions will remain confidential. Further information is available by visiting the Access Center website: www.msudenver.edu/access.