Syllabus

Course: Programming Language Concepts (CSCI 344)

Course Web Page: http://www.cs.rit.edu/~anh/plc_resources_fall.html

Instructor: Dr. Arthur C. Nunes

Recommended Texts:

- *The Scheme Programming Language* by R. Kent Dybvig
- *How to Design Programs* 2nd Edition by Matthias Felleisen, Robert Bruce Findler, Matthew Flatt, and Shriram Krishnamurthi
- *Structure and Interpretation of Computer Programs* 2nd Edition by Harold Abelson and Gerald Jay Sussman with Julie Sussman
- *Programming Languages: Application and Interpretation* by Shriram Krishnamurthi
- *Essentials of Programming Languages*, by Daniel P. Friedman and Mitchell Wand
- *Programming Language Pragmatics*, by Michael L. Scott
- *Programming in Prolog* by W. F. Clocksin and C. S. Mellish

Description:

A study of the syntax and semantics of a diverse set of high-level programming languages. The languages chosen are compared and contrasted in order to demonstrate general principles of programming language design. The course emphasizes the concepts underpinning modern languages rather than the mastery of particular language details. Programming projects will be required.

Prerequisites:

- CSCI-243 The Mechanics of Programming
- MATH-190 Discrete Mathematics for Computing

Objectives:

Upon completion of this course, the student will be able to write serious programs in Scheme; the student will be able to describe the history of programming languages; the student will be able to explain and apply basic constructs and concepts used in common programming languages; the student will be able to formally describe programming language syntax and semantics; the student will be able to learn new programming paradigms and languages on their own.

Topics covered:

- Introduction, History, and Classification of Programming Languages
- Essentials of Scheme, Advanced Programming Techniques
- Lexical and Syntactic Specification
- Scanners and Parsers

- Language Structures
- Semantics
- Programming Language Implementation
- Essentials of PROLOG
- Unification, Logic, and Search
- Type Checking and Inference
- Object Models

Regulations:

There will be no eating, drinking, or smoking in the classroom. Students must keep cell-phones turned off during class. Laptops may not be used during class unless there is a special need. Class attendance is mandatory. If a student misses class then s/he loses a class participation point. Coming late or leaving early counts as half an absence. A student is considered to be late to class if s/he is not exactly on time.

Grades:

The overall grade is determined as follows.

- 25% Midterm

  The midterm exam is closed-book, closed-notes, etc. There will be no "cheat sheet." The midterm exam is in-person.

- 30% Final Exam

  The final exam is cumulative; it is closed-book, closed-notes, etc. There will be no "cheat sheet." The final exam is in-person.

- 40% Assignments

  Each assignment will have two parts. The student's work should be submitted electronically. The student should follow the on-line format and submission directions. The student's code must run for partial credit.

- 5% Class participation

  This grade is determined by partly by the student's participation in class, and partly by class attendance. The student must sign the attendance form during class on the day present to be counted present that day.

The instructor will strive to get grades for most assignments back to the students in approximately one week. Larger assignments may take longer, and the instructor will strive to get those back in approximately two weeks. Grades and feedback for the assignments will be posted on myCourses. Grades and feedback for the midterm will be returned on paper (i.e., handed back in class). If a student misses the class when a grade is returned, the student can stop by the instructor's office to pick it up. Grades will be entered into myCourses at irregular intervals. The only guarantee being that they will be available one week before the withdraw date, and after the final.

Grading Scale:

Grade	**Range**
A	90 - 100

B	80 - 89
C	70 - 79
D	60 - 69
F	0 - 59

Plus and minus grades are given at the discretion of the instructor.

Make-up policy:

There will be no make-up exams. No excuse is considered. Late homework will be assessed as follows.

Late. Same Day	15% off
Late. One Day	30% off
Late. Two Days	45% off
Late. Three Days	60% off
Late. Four Days	75% off
Late. Five or more Days	No credit

Disabilities:

If you have a physical, psychological, medical, or learning disability that may affect your ability to carry out the assigned course-work, I urge you to contact the staff at the Disability Services Office (475-7804 V/TTY or 475-6988 V/TTY). They will review your concerns and determine with you what accommodations are necessary and appropriate. All information and documentation are confidential.

Conduct:

Students must conform to the student Code of Conduct, so students are obligated to behave appropriately in class. Further, students are required to follow any health related rules or restrictions. Violations (as determined by the instructor) can result in students being asked to leave the class for the day or even for the term.

Academic Honesty:

Submitted work must be created independently by each student, and not copied from another student, or other source (e.g., from web pages or generative AI such as chatGPT). In cases where a student is suspected of cheating or copying material, the instructor will act in accordance with the Department of Computer Science Policy on Academic Integrity. Note that a student who supplies work to another student is considered as culpable as the student who receives it.

Generative AI:

As stated above, the use of generative AI, such as chatGPT, to answer homework questions is forbidden. The use of generative AI, such as chatGPT, for other purposes in this course is discouraged; while generative AI sounds very confident, the content is frequently incorrect.

Miscellaneous:

Any questions about grades must be raised within a week of receiving the grade.

Students may withdraw up until the Friday of the eleventh week of class.

Health and Wellbeing:

The academic demands in this course and your other classes can be understandably difficult. It is normal to feel anxious about your academic ability, especially when unexpected life events emerge. I want to invite you to connect with me about any difficulties you have in this course as soon as possible. Your success is important. I want you to get the additional assistance needed before the challenges become too much.