CS 326 Programming Languages, Concepts and Implementation

3 credits (Lecture 3 + Lab 0)
Fall 2024

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Class webpage: http://www.cse.unr.edu/~mircea/Teaching/cs326/

Teaching Assistant: TBA
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Office: TBA
Office hours: TBA

Lectures:
Tuesday, Thursday: 9am-10:15am, WPEB 130

Labs:
none

Course Description:
Catalog:
An overview of programming languages; features, structures, and implementation; examples taken from various programming paradigms. Introduction to formal specifications of languages.

Prerequisites:
Courses:
- CS 302 (Data Structures) with a "C" or better.

Topics:
- Good knowledge of at least one programming language (such as C++)
- Familiarity with data structures (such as linked lists and trees)

Required Textbooks and Course Materials:
- *Programming Language Pragmatics*, by Michael L. Scott, Morgan Kaufmann Press, 2015.
- Software: Scheme, Prolog, Java

Class Procedures:
- Students will be required to access materials and complete activities and assignments online via WebCampus.

Course Objective:

Students will demonstrate an understanding of the fundamental principles underlying programming languages and demonstrate an ability to design and implement applications in a variety of language paradigms.

Student Outcomes:

The student outcomes are skills and abilities students should have acquired by the end of the course.

Student Outcome Number	Student Outcome	Course-Specific	Assessment Instruments
1	Identify, formulate, analyze, and solve complex computing or engineering problems by applying principles of computing, engineering, science, and mathematics.	Students are able to make use of the fundamental concepts learned in this course in order to design and implement a software project using one of the new languages learned.	Homework assignments.
8	Acquire and apply new knowledge as needed, using appropriate learning strategies.	Students are able to investigate/discover how the historical evolution of programming languages has been driven by the tradeoffs involved in language design and implementation, as illustrated by case studies from various programming languages.	Exam questions.

Assignments, Examinations and Grading:

Homework Assignments:

- There will be a number of homework assignments, some of which will include programming. The homework assignments and their due dates will be posted on the course web page. Homework assignments are due on the specified date at the beginning of the class.

Exams:

- There will be one midterm exam and one final exam. Both exams will be closed books, closed notes.

Class Participation:

- The student grade includes a component for participation in class discussions. This will be evaluated according to the instructor's observations during the semester.

Grading Structure:

- The final score will be computed as follows:

Component	Weight
Homework assignments	40%
Midterm exam	25%
Final exam	30%
Class participation	5%

Letter Grades:

- The letter grade will be computed as follows. Some upward adjustment *may* occur, but do not count on it.

≥ 92:	A
[88-92):	A-
[84-88):	B+
[79-84):	B
[75-79):	B-
[71-75):	C+
[66-71):	C
[62-66):	C-
[58-62):	D+
[54-58):	D
[50-54):	D-
< 50:	F

Late Submissions and Make-up Exams Policy:

- No late assignments will be accepted. Permissions to take exams on other dates than scheduled will not be given, except for extreme medical emergencies.

Attendance:

- This is an in-person course. Students are required to attend, and be on time, for every class. Students who miss class and/or are late for class may experience an impact on their grade by missing classroom activities.

Course Topics:

- Introduction – The Study of Programming Languages
- Programming Language Syntax
- Names, Scopes and Bindings
- Control Flow
- Data Types
- Subroutines and Control Abstraction
- Data Abstraction and Object Orientation
- Functional and Logic Languages
- Concurrency

Important Dates:

- **Midterm Exam:** October 15, at 9am
- **Final Exam:** December 12, at 8am
- **Homework assignments:** about every 2 weeks

Material Subject to Change:
Course material, topics, schedule, assignments, and content are subject to change.

Academic Dishonesty:
The University Academic Standards Policy defines academic dishonesty, and mandates specific sanctions for violations. See the University Academic Standards policy: UAM 6,502.

Statement on Student Compliance with University Policies:
In accordance with section 6,502 of the University Administrative Manual, a student may receive academic and disciplinary sanctions for failure to comply with policy, including this syllabus, for failure to comply with the directions of a University Official, for disruptive behavior in the classroom, or any other prohibited action. "Disruptive behavior" includes failure to follow course, laboratory or safety rules, or endangering the health of others. A student may be dropped from class at any time for misconduct or disruptive behavior in the classroom upon recommendation of the instructor and with approval of the college dean. A student may also receive disciplinary sanctions through the Office of Student Conduct for misconduct or disruptive behavior, including endangering the health of others in the classroom. The student shall not receive a refund for course fees or tuition.

Disability Services:
Any student with a disability needing academic adjustments or accommodations is requested to speak with the Disability Resource Center (Pennington Student Achievement Center, Suite 230) as soon as possible to arrange for appropriate accommodations.

Audio and Video Recording:
Student-created Recordings:
Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped, or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

Instructor-created Recordings:
Class sessions may be audio-visually recorded for students in the class to review and for enrolled students who are unable to attend live to view. Students who participate with their camera on or who use a profile image are consenting to have their video or image recorded. If you do not consent to have your profile or video image recorded, keep your camera off and do not use a profile image. Students who un-mute during class and participate orally are consenting to have their voices recorded. If you do not consent to have your voice recorded during class, keep your mute button activated and only communicate by using the "chat" feature, which allows you to type questions and comments live.

Safe Learning:
The University of Nevada, Reno is committed to providing a safe learning and work environment for all. If you believe you have experienced discrimination, sexual harassment, sexual assault, domestic/dating violence, or stalking, whether on or off campus, or need information related to immigration concerns, please contact the University's Equal Opportunity & Title IX office at 775-784-1547. Resources and interim measures are

available to assist you. For more information, please visit the Equal Opportunity and Title IX page.

Campus Closures or Delays:

In the event of class cancelations or delays caused by inclement weather conditions, fire/smoke conditions, or other unforeseen emergencies, the safety and well-being of students are the University's top priority. Official notifications will be disseminated through the University website and other official channels with details related to any campus delays or closures. In the event of a campus closure, you will be informed as to whether the class will be offered remotely or if it will be canceled. If the class is cancelled, you will receive information on how to address any missed course content. Students facing significant impacts due to these events are encouraged to communicate with their instructor for potential accommodations.

Academic Success Services:

Your student fees cover usage of the University Math Center (775) 784-4433, University Tutoring Center (775) 784-6801, and University Writing & Speaking Center (775) 784-6030. These centers support your classroom learning; it is your responsibility to take advantage of their services. Keep in mind that seeking help outside of class is the sign of a responsible and successful student.

University-Sponsored Athletic Activities:

If you are involved with any university-sponsored athletic activities that will have an impact on your attendance, please provide your instructor with a letter from your coach and/or the UNR Athletic Department as soon as possible, but no later than the end of the second week of classes. This should include the official schedule of your activities which will impact your attendance throughout the semester.

Content Accessibility:

This course may leverage 3rd party web/multimedia content, if you experience any issues accessing this content, please notify your instructor.