

Course Syllabus

Course Information

CS/CE 4337.502 Programming Language Paradigms, Fall 2024

Meeting: ECSS 2.312 – Tuesday & Thursday 7:00pm–8:15pm

Contact Information

Professor	Dr. Elmer Salazar
Phone	(972) 883–2329
Email	elmer.salazar@utdallas.edu
Office	ECSN 3.612
Office Hours	Monday and Tuesday 1pm–2pm (in-person only) Wednesday and Thursday 1pm–2pm (online only) or by appointment

Pre-requisites

- (CE 2336 or CS 2336 or CS 2337) or CS 3333 and
- (CE 2305 or CS 2305) and
- (CS 2340 or SE 2340) or (CE 4304 or EE 4304)

Course Description

Programming Language Paradigms (3 semester credit hours) Principles of design and implementation of contemporary programming languages. Formal description including specification of syntax and semantics of programming languages. Language definition structures including binding, scoping, data types, control structures, parameter passing, abstraction mechanism, and run-time considerations. Design issues of different programming languages. Language-based security. Design, implement, and debug programs in various programming language paradigms.

Learning Objectives

- Ability to identify the characteristics of programming paradigms and phases of translation
- Ability to understand the concepts of formal syntax and semantics of programming languages
- Ability to understand the concept of language-based security
- Ability to understand the concept of web scripting security
- Ability to understand the concepts of first-class values, lists, and recursion
- Ability to understand the concepts of the functional programming paradigm and design functional programs
- Ability to understand the concepts of the logic programming paradigm and design logic programs

Reading Material

To be provided

Course Work

08/20	08/22	08/27	08/29
Course Introduction	Paradigms and Implementations	Paradigms and Implementations	Functional Programming Languages
09/03	09/05	09/10	09/12
Functional Programming Languages	Functional Programming Languages	Functional Programming Languages	Introduction to Security
09/17	09/19	09/24	09/26
Introduction to Security	Type-safety	Type-safety	Describing Syntax and Semantics
10/01	10/03	10/08	10/10
Describing Syntax and Semantics	Describing Syntax and Semantics	Describing Syntax and Semantics	Basic Fuzzing
10/15	10/17	10/22	10/24
Basic Fuzzing	Basic Fuzzing	Logic Programming Languages	Logic Programming Languages
10/29	10/31	11/05	11/07
Logic Programming Languages	Logic Programming Languages	Control-flow Integrity	Control-flow Integrity
11/12	11/14	11/19	11/21
Control-flow Integrity	Formal Methods	Formal Methods	Formal Methods
11/26	11/28	12/03	12/05
No Class Fall Break	No Class Thanksgiving	More on Security	

Exams: 30%
 Homework: 30%
 Projects: 30%
 Quizzes: 10%

	Due		Due
Homework 1	09/20	Project 1	10/04
Homework 2	09/27	Project 2	12/05
Homework 3	10/11		
Homework 4	11/01	Exam 1	10/10
Homework 5	11/15	Exam 2	11/14
Homework 6	12/05	Exam 3	12/10

A+	97–100	C+	77–79
A	94–96	C	74–76
A-	90–93	C-	70–73
B+	87–89	D	60–69
B	84–86	F	0–59
B-	80–83		

Grade will be rounded to the nearest whole number when computing the grade.

Course Policies

Class Materials

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Lecture Recordings

- Recordings of the lecture may be provided via Share Point.
- A link to the list of videos can be found in the "Class Notes" section on e-learning
- Recordings are provided for study purposes only. I make no guarantees about uploads.

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the AccessAbility Resource Center has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved AccessAbility Resource Center accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

Class Participation

- Participation in this class is crucial for doing well.
- Attending and participating in lecture will better prepare you.
- Asking and answering questions are encouraged. Please feel free to ask questions in class.

Attendance

- Attendance is mandatory.
- I will teach with the assumption you attend face-to-face lectures.
- Attendance will be taken using a simple e-learning "quiz" during class.

Assignments

- All assignments will be turned in through elearning.
- Unless specified, you must work on the assignment individually.
- You are responsible for submitting on time. The time is strict, and all assignments will be due before 11:59pm. – Be sure to start submitting early. – Problems submitting to elearning is not a valid excuse for late submissions.
- All written assignments must be in “.doc”, “.docx”, “.pdf”, or “.txt” (when applicable)
- All programming assignments must be in plain text (original source code). They must be compilable and runnable without a project file or specific software/libraries.
- There will be no extra credit.

Late Submissions

- Unless arranged with the professor **ahead of time**, late submissions will be penalized.
- Late penalties will follow the following table.

Time Late	Penalty
Up to 10 minutes	5% of maximum grade
Up to 12 hours	10% of maximum grade
Up to 1 day	15% of maximum grade
Up to 2 days	30% of maximum grade
After 2 days	Automatic zero

Exams

- Exams will be online e-learning exams.
- They are open book/open notes.
- You can take the exam anytime within a specified 24 hour period.
- You are responsible for being available for exams.
- If you cannot make an exam, and have a valid excuse, you must contact the professor before the exam.
- A valid excuse must be accompanied by a note from the proper authority. For instance, a medical excuse requires a note from a doctor.
- A missed exam will be recorded as a 0.

Grading Disputes

- Assignments will be graded by a TA or grader. Any disputes on assignment grades should be directed to the TA or grader.
- All exams and quizzes will be handled by the professor. Any disputes on exam or quiz grades should be directed to the professor.
- All grading disputes must be raised within 7 days of grades being posted.

Academic Dishonesty

- UT Dallas takes academic Honesty very seriously.
- Suspected dishonesty will be reported for investigation.
- All assignments (unless otherwise specified) and exams must be your own work.
- If you are not sure if something counts as academic dishonesty, ask.

Communication

- Outside class, all communication will be through elearning announcements and e-mail.
- Use your UTD email for all email communications. I will not respond to non-UTD addresses.
- Put your course number at the start of the subject (CS/CE 4337.502). Communication may be delayed or missed if you do not.
- I usually respond within 24-hours, but give 48-hours. If I do not res

Accommodations for Students with Disabilities

Please review [the section](#) within the UT Dallas Syllabus Policies and Procedures webpage.

Academic Support Resources

Please visit the [Academic Support Resources](#) page to view the University's academic support resources for all students.