

Course: CS-4337.004 Programming Language Paradigms

Professor: Jalal Omer

Term: Fall 2021

Lecture Times: 4:00PM–5:15PM Tues. & Thr.

Lecture Location: JO 3.516

Note 1: *The descriptions and timelines below are subject to change at the discretion of the Professor. As you all know, it might be necessary to make changes to the policies due to precautions taken during the pandemic period. We will notify students as soon as there is an update.*

Note 2: *The instruction modality for this course is **Traditional Classroom**. However, for the first three weeks of the semester we will maintain “**de-densification**” measure to reduce the number of students that will sit in the classroom. The reason for this arrangement is explained in the following link:*

<https://www.utdallas.edu/covid/staff-faculty-research-info/academic-plans-for-the-fall-2021-semester/>

De-densification means that we will run the lecture in classroom at lower density, in consideration of the COVID-19 delta variant in North Texas. Therefore, for the first three weeks of Fall 2021, we will de-densify our classroom as follows:

-- If your last name starts with one of the letters A thru H, then you must come to classroom on Tuesday

-- If your last name starts with one of the letters K thru Z, then you must come to classroom on Thursday

-- When you are not in the classroom, you should attend class synchronously online via Microsoft Teams and/or asynchronously. The lectures will be recorded and shared via MS Streams.

Professor Information

Name: Jalal Omer

Email Address: jalal.omer@utdallas.edu

Office Phone: (972) 883-2683

Office Location: ECSS 3.230

Office Hours: TBA

Prerequisites

(CE 2336 or CS 2336 or TE 2336 or CS 3333) and
(CE 2305 or CS 2305 or TE 2305) and
(CS 3340 or SE 3340 or TE 3340 or CE 4304 or EE 4304)

Description

CS 4337 - 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 importance of formal syntax and semantics
- Ability to understand the different forms of binding, visibility, scoping, and lifetime
- Ability to understand the semantics of expressions and data types
- Ability to understand the concepts of data abstraction, control abstraction and various parameterpassing mechanisms
- Ability to understand language security and cryptographic concepts
- Ability to understand the concepts of the functional and logical programming paradigms

Textbook

Concepts of Programming Languages, 11th edition, Robert Sebesta, Addison Wesley Pub., 2015.

Grading Policies

The grade distribution for the course is:

Item	Weight
Quizzes	10%
Assignments	20%
Midterm Exam	35%
Final Exam	35%
Total	100%

Grading Scale

%	Letter Grade	GPA Credit
≥ 97	A+	4.00
[94 – 97)	A	4.00
[90 – 94)	A-	3.67
[87 – 90)	B+	3.33
[84 – 87)	B	3.00
[80 – 84)	B-	2.67
[77 – 80)	C+	2.33
[74 – 77)	C	2.00
[70 – 74)	C-	1.67
[67 – 70)	D+	1.33
[64 – 67)	D	1.00
[60 – 64)	D-	0.67
[0 – 60)	F	0.00
—	NF*	0.00

* Failure for non-attendance

<https://catalog.utdallas.edu/2017/undergraduate/policies/academic>

Important Notes:

1. All assignments and projects submission are to be done through Turnitin to check for the originality of submissions.
2. All online exams and quizzes are to be conducted via HonorLock (as an online remote proctoring)

- All grades during the semester for homework, programming projects, and exams will be posted to eLearning.
- Official transcript course grades will be posted in Orion by the Records Office at the end of the semester.
- Any student wishing to review or contest an assignment or exam grade has exactly 7 calendar days from the time the grade is posted to *initiate* an inquiry.
- Only work that is assigned to the entire class may count toward the course grade. No ad-hoc work for individual students can be assigned for additional credit.

Course Modality and Expectations

Instructional Mode	<p>Traditional Classroom</p> <p><i>“The course will be taught face-to-face. Instructor and students meet according to the schedule.”</i></p> <p>Modality descriptions</p>
Expectations	You are expected to stay current with all course assignments and tasks. Respect all deadlines and assignment due dates. Complete all textbook reading assignments. Attend virtual lectures at the scheduled times.
Asynchronous Learning Guidelines	Students who opt for the asynchronous course option will be excluded from lecture attendance tracking. However, all other aspects of course participation are still required.

Course Content

- **eLearning** is the official information portal for this course.
- All course assignments, announcements, schedule, homework, lecture slides, discussion group, and grades will be communicated via eLearning.
- All course content copyrights are owned by the UT System. All rights reserved.
- It is a copyright violation to share, email, or post any course content—either digitally or hardcopy—with anyone other than classmates registered for the course during the same semester as you.
- Microsoft Teams is the preferred mode of communication with the instructor and TA. This will result in the fastest response time.
- Any email communication with the instructor or TA *must* be sent from your valid UTD email address. This is for your protection to prevent others from gaining personal information about you by faking your identity.
- All email communication with the instructor must include the course number and section as the first text in the subject line, formatted *exactly* as it is in the header of this syllabus. There is a hyperlink on the eLearning Course Homepage that will automatically launch a new email with this required subject.
- Any email that does not adhere to these requirements risks delayed response.
- All submissions must be your own work. Students guilty of plagiarism will receive *zero credit* for the plagiarized work and may be subject to further academic penalties, per university policy.
- **UTD Comet Creed** – This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

- All assignments shall be submitted online through eLearning.
- **Assignment is due *before* the deadline time. e.g. an assignment due at 11:59PM is LATE if its time stamp is after 11:59PM**
- Submit incomplete work before the deadline for partial credit. Multiple assignment submissions are permitted before the deadline.
- Late assignment submission may be accepted with the following penalties:
 - Up to 24 hours late: 10% off
 - Up to 48 hours late: 25% off
 - Up to 72 hours late: 50% off
 - Over 72 hours late: No credit

Exams

- All exams will be *closed book* and *closed notes*.
- The Final Exam will be comprehensive, although more focus will be given to material presented after the midterm.
- The Midterm and Final Exam ***will not be returned***. They will be kept on file by the instructor for one additional semester. Anyone wishing to review his/her exam can speak to the instructor during published office hours or make a separate, private appointment.
- Make up exams or alternative exam times for either Midterm or Final will be given ***only*** for:
 - **Verifiable emergencies.** A student must make every attempt possible, via telephone or email to notify the instructor that they will miss the exam prior to the examination date and time. Note that the wedding of a family member is NOT considered to be an emergency.
 - **Schedule conflict with another exam.** A *conflict* is defined by ***only two conditions***: (a) a scheduled physical overlap in time, or (b) three exams on the same calendar day. Note that two exams on the same day (including two back-to-back exams) is NOT considered to be a schedule conflict.

Help Desk: For help with issues regarding your computer, UTD maintains a walk-in help desk. Visit their Web site for details: <http://www.utdallas.edu/ir/helpdesk/>

Tutoring: The schedule usually comes out a couple of weeks after the semester begins. Once the tutoring schedule for this semester has been released, an announcement will be posted on eLearning. In addition, it is part of the TA's job to help you, so please feel free to engage with him/her at any time. And, of course, I'll be happy to help as well.

Academic Calendar

***Note:** The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor. Test date/time is set tentatively and subject to be changed if needed.

Week # TTh	TextBook Chapters	Other Topic
01 – 08/24, 8/26	Sebesta ch1	Syllabus, Introduction Lisp Prolog Adv Topics (as time permits)
02 – 08/31, 9/02	Sebesta ch2	
03 – 09/07, 9/09	Sebesta ch3	
04 – 09/14, 9/16	Sebesta ch4	
05 – 09/21, 9/23	Sebesta ch5	
06 – 09/28, 2/30	Sebesta ch6	
07 – 10/05, 10/07	Sebesta ch7	
	Midterm Exam	
08 – 10/12, 10/14	Sebesta ch8	
09 – 10/19, 10/21	Sebesta ch9	
10 – 10/26, 10/28	Sebesta ch10	
11 – 11/02, 11/04	Sebesta ch11	
12 – 11/09, 11/11	Sebesta ch12	
13 – 11/16, 11/17	Adv Topics	
14 – 11/23, 11/25	Fall Break & Thanksgiving Break	
15 – 11/30, 12/2	(As time permits): Python,	
16 – 12/07	HTML, CSS, PHP, Javascript, ASP	
	Final Exam Week	

* Note: The dates here are tentatively assigned and are subject to change as needed.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents'

Rules, university regulations, and administrative rules.

Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious

effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called “the respondent”).

Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent’s School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean’s decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester’s end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at
Dallas, SU 22 PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities.

The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student’s responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members

to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Off-Campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address given below. Additional information is available from the office of the school dean. (http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm)

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