Syllabus

CSE 3302-001 Programming Languages

2019 Summer Semester, Version 1.0, 2019 June 03

Section Information	CSE 3302-001
Class Time / Place	MTWR, 10.30-12.30 NH 112
Course website	https://elearn.uta.edu/
Instructor	Brian A. Dalio
Email	brian.dalio@uta.edu
Faculty Profile	https://mentis.uta.edu/explore/profile/brian-dalio
Office Location	ERB 557
Office Telephone	+1-817-272-3785
Office Hours	Mondays, 12.30-14.00 Wednesdays, 12.30-14.00

Description of Course Content

CSE 3302 — PROGRAMMING LANGUAGES.

Introduction, analysis, and evaluation of the important concepts found in a variety of programming languages. Formalisms useful in specifying language syntax and semantics; programming language paradigms such as algorithmic, functional, logic, and object-oriented. Prerequisites: C or better in each of the following: CSE 1325, CSE 2312, and CSE 2320.

Prerequisites

C or better in each of

- ***CSE 1325 — OBJECT-ORIENTED PROGRAMMING***: Object-oriented concepts, basic Unified Modeling Language (UML) modeling, collection classes, generics, polymorphism, reusability, and introduction to design patterns. Projects involve extensive programming and include graphical user interfaces and multithreading.

- ***CSE 2312 — COMPUTER ORGANIZATION & ASSEMBLY LANGUAGE PROGRAMMING***: Computer organization from the viewpoint of software, including: the memory hierarchy, instruction set architectures, memory addressing, input-output, integer and floating-point representation and arithmetic. The relationship of higher-level programming languages to the operating system and to instruction set architecture are explored. Some programming in an assembly language.

- ***CSE 2320 — ALGORITHMS & DATA STRUCTURES***: Design and analysis of algorithms with an emphasis on data structures. Approaches to analyzing lower bounds on problems and upper bounds on algorithms. Classical algorithm design techniques including algorithms for sorting, searching, and other operations on data structures such as hash tables, trees, graphs, strings, and advanced data structures, dynamic programming and greedy approaches.

Or consent of instructor.

Student Learning Outcomes

By the close of the course, the successful student will be able to

- Describe the general principles that are involved in the design of programming languages.

- Explain the relationship between syntax and semantics as well as the differences between the two.

- Describe the principal features of different programming language paradigms, including imperative, functional, and object-oriented/generic

- Explain programming language concepts such as binding, naming, scopes, storage, control structures, functions, calling conventions, and exceptions as well as their interactions.

- Explain how a variety of programming language constructs are implemented.

- Describe the structure of a typical compiler and interpreter.

Textbooks

- *Programming Language Pragmatics, Fourth Edition*, Michael L. Scott, (2016) Morgan Kaufmann, ISBN-13: 978-0124104099.
    - Website: https://www.cs.rochester.edu/~scott/pragmatics/

- *Java 8 Lambdas: Functional Programming For The Masses*, Richard Warburton, (2014) O'Reilly, ISBN-13: 9781449370770.
    - Website: https://github.com/RichardWarburton/java-8-lambdas-exercises
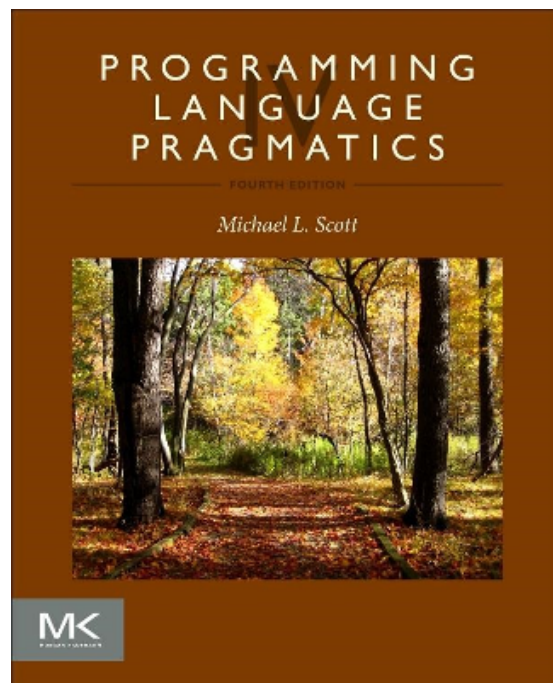
Course Schedule and Important Dates

The official University Academic Calendar for the 2019 Summer semester is available at https://www.uta.edu/uta/acadcal.php?session=20193.

First day of classes	2019 June 03
Census date	2019 June 06
Last day to drop	2019 June 24 Submit to advisor *before* 16.00
Last day of classes	2019 July 03
Final examination	2019 July 08, 10.30-12.30 *(subject to change)*

Description of Major Assignments and Examinations

There will be in-class quizzes, assignments, and a final examination.

Quizzes

- The quizzes will be occasional, unannounced, written questions based on the assigned readings and class lectures. A quiz may be given at any time during any class period. Quizzes will be given only to those students who are present when the quizzes are passed out.

- There will be **no** make-up quizzes given unless prior arrangements have been made or if one has an **approved** and **documented** medical or university excuse for absence.

Examinations

- There will be a comprehensive final examination.

- There will be **no** make-up examination given unless **prior** arrangements have been made or if one has an **approved** and **documented** medical or university excuse for absence.

Assignments

- The instructor and the teaching assistant are available outside of class to offer help and clarify the concepts required for the programming assignments. The instructor and the teaching assistant will **not** debug your programs for you.

- All assignments will be announced well in advance of the due date. Pay close attention to the due date and especially the due time. There is **no** grace period. No assignment will be accepted after the due date / time. Submissions made after the due date / time will receive **no** credit.

- Assignments must be submitted electronically using Blackboard and in the format specified in class. Submissions not made using Blackboard or not in the correct format will receive **no** credit.

- Submissions must be made directly to Blackboard. Do **not** link from some other site (e.g., Box). Submissions not made directly to Blackboard will receive **no** credit.

- Each assignment must be self-contained. That is, it must include all the required components to run. Only the submitted files will be used when evaluating the assignment. No additional or supplemental files may be used at run time. Your assignments must run as submitted.

- Submitted assignments that do not run will receive **no** credit. There is **no** partial credit for a non-functional program.

- Assignments that implement some but not all of the requirements **may** receive partial credit. However, these programs must still run without error.

- It is **your** responsibility to test completely your assignments **prior** to submission and ensure that they execute properly and without error as submitted.

- It is *your* responsibility to validate that your assignments are properly submitted and ensure that they execute properly and without error as submitted.

Grading Policy

Grades will be calculated according to the following percentage contributions.

Quizzes	25%
Assignments	50%
Final examination	25%

The final letter grade will be assigned according to the following scale.

> 87%	A
75% - 87%	B
65% - 75%	C
55% - 65%	D
0% - 55%	F

- The final letter grade is based ***absolutely*** on the scale given above.

- There is ***no*** curve. Multiple studies have shown that grading on a curve disrupts and discourages studying because of the uncertainty of what work will yield what result. This can be highly stressful.

- Your grade depends solely on your performance on the quizzes, assignments, and the final examination. The grading criteria does ***not*** include how much effort you might have expended.

- All grades will be posted on Blackboard. It is ***your*** responsibility to keep track of your own ongoing performance throughout the semester and seek guidance from the instructor if your performance drops below a satisfactory level. Do ***not*** wait until it is too late.

- There will be no variations in this policy.

General Policies

- ***Your opinion does matter***. All constructive suggestions will be seriously considered. However, suggestions should be applicable to all students in the class and not to a particular group or individual. Please do not ask for any exceptions.

- ***Read your email***. All announcements will be communicated via email.

- ***Do not be late***. Your late arrival will disturb the continuity of the lecture and will interfere with other students' concentration. ***Do not*** enter the classroom if you are late.

- ***Turn off your cell phone during class!*** Seriously, is anything so important it can't wait for an hour or so? Concentrate on the material in class.

- ***Be there***. You learn better when you are mentally present. If you bring a notebook, laptop, tablet, etc. to class, it should be used only for work which is related to the ongoing subject in this class. ***Do not*** use these devices for anything which is not related to this class (email, texting, social networks, games, chat, work related to other courses, etc.).

- **No** special "make-up" work will be accepted after the end of the semester. In the event of a **documented** major medical problem and if a student "has satisfactorily completed a substantial part of the coursework", a grade of Incomplete will be given pending the submission of completed work. However, "make-up" work "to improve one's grade" is not possible.

- Part of the objective of any course is to prepare students for professional life in real world. In the real world there is no excuse for not knowing the rules and your responsibilities. You are responsible for understanding the rules and carrying out your responsibilities. In the real world if you do not get the job done, nobody will care about the reasons or excuses.

- You are responsible for all material presented during any class even if you are absent.

- If your goal is an easy grade or a light load, this is not the class for you.

Attendance

At the University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance.

While UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients 'begin attendance in a course'. UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients.

As the instructor of this section, I will not take attendance. However, I **strongly** urge you to attend class. Not only may you miss a quiz which will lower your semester average, there is no substitute for experiencing the material as it is presented in class along with the discussions that invariably occur.

Further, you are **bound** by anything that happens or is discussed in class, **even** if you were not in attendance. I try to make confirming announcements through Blackboard, but there is **no** guarantee that will always happen. If you choose not to attend a class, ensure that you get a summary of that class from someone who did. You **will** be held accountable.

Grade Grievances

Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

- http://catalog.uta.edu/academicregulations/grades/#undergraduatetext
- http://catalog.uta.edu/academicregulations/grades/#graduatetext
- http://www.uta.edu/deanofstudents/student-complaints/index.php

Drop Policy

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (https://www.uta.edu/fao/).

Disability Accommodations

UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act* (ADA), the *Americans with Disabilities Amendments Act* (ADAAA), and Section §504 of the *Rehabilitation Act*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the *Office for Students with Disabilities* (OSD). Only those students who have officially documented a need for an accommodation will have their request honored.

Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting the *Office for Students with Disabilities*, (OSD) www.uta.edu/disability or calling (817) 272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Counseling and Psychological Services (CAPS) (www.uta.edu/caps/ or (817) 272-3671) is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems, and make positive changes in their lives.

Non-Discrimination Policy

The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.

Title IX Policy

The University of Texas at Arlington is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the *Higher Education Amendments* of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the *Civil Rights Act* of 1964 (Title VII), which prohibits sex discrimination in employment; and the *Campus Sexual Violence Elimination Act* (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.

Academic Integrity

Students enrolled in all UT Arlington courses are expected to adhere to the UT Arlington Honor Code.

> *I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

> *I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at https://www.uta.edu/conduct/.

All students are expected to pursue their academic careers with honesty and integrity. 'Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts' (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22.).

Students found guilty of dishonesty in their academic pursuits are subject to penalties that may include suspension from the university.

Any student found guilty of academic dishonesty will receive a ***-100% score*** for that work (quizzes, assignments, examination, project, etc.) as well as having the ***course grade lowered one full letter grade*** — ***in addition to any other penalties assessed*** (suspension, expulsion, probation). These and other applying UTA rules will be ***strictly*** enforced. Any case of academic dishonesty will be treated in accordance with the UTA Handbook of Operating Procedures or the Judicial Affairs. If you do not understand this policy, it is ***your*** responsibility to obtain clarification or any additional information you may require.

Students are not allowed to ...

- Collaborate with others on the code they write.
- Copy any part of someone else's program, even if they have permission and/or have modified the code.
- Share or give their code, or even a subset of the code, to another student.
- Review another student's solution, including any work from previous semesters or concurrent sections.

All work turned in for grading must be the student's own work.

Electronic Communication

UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Campus Carry

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit http://www.uta.edu/news/info/campus-carry/.

Student Feedback Survey

At the end of each term, students enrolled in face-to-face and online classes categorized as 'lecture', 'seminar', or 'laboratory' are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit http://www.uta.edu/sfs.

Personal Comment

The previous paragraph is the standard information from the University about the Student Feedback Survey. As the instructor for this class let me add a personal comment here and say that I value ***all*** feedback highly — whether it is positive ***or*** negative. I ***strongly*** urge every student to complete the survey. All information that comes to me is presented

anonymously and I am not informed of the results of the survey until after final grades have been posted so the survey results can have no effect on the grades.

Use the comment box to tell me what worked, what didn't work, what you liked, what you didn't like, what you wanted more of, what you wanted less of, what you wished would have been in the course, what you could have done without, and so forth. I take each comment seriously and use the information provided to adjust how I teach.

Finally, let me observe that a comment along the lines of "*You suck!*" is not useful. However, "*You suck **because** ... !*" could be *very* useful. Please fill in the blanks. Thank you.

Final Review Week

For semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except make-up tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures

Should we experience an emergency event that requires us to vacate the building, students should leave the room and move toward the nearest exit. (See the following diagram.) When leaving the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.
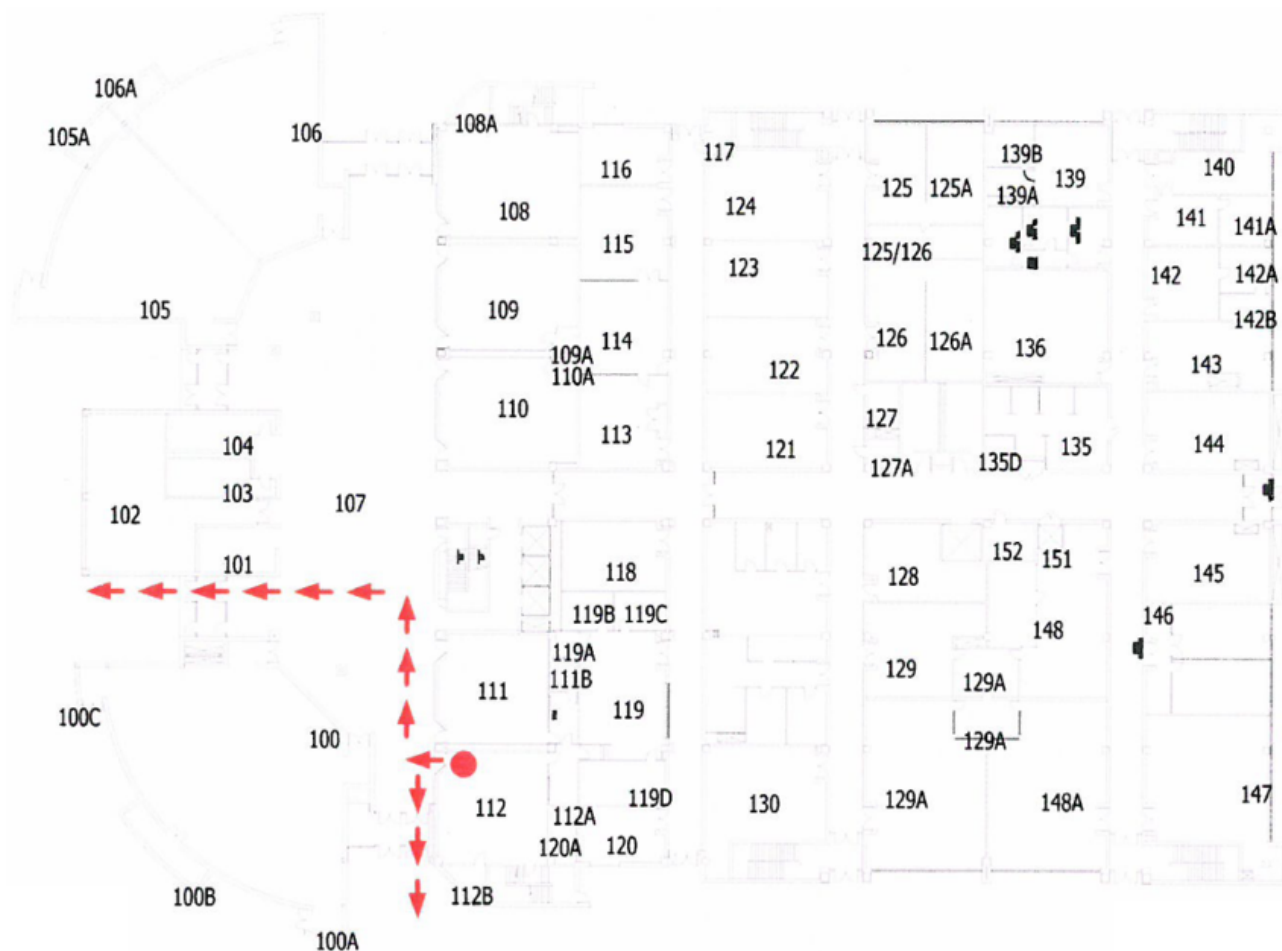
Student Support Services

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at (817) 272-6107, send a message to resources@uta.edu, or view the information at http://www.uta.edu/universitycollege/resources/index.php.

University Tutorial and Supplemental Instruction

UTSI (Ransom Hall 205) offers a variety of academic support services for undergraduate students, including 60 minute one-on-one tutoring sessions, Start Strong Freshman tutoring program, and Supplemental Instruction. Office hours are Monday-Friday 8:00am-5:00pm. For more information visit www.uta.edu/utsi or call (817) 272-2617.

IDEAS Center

The IDEAS Center (2nd Floor of Central Library) offers *free* tutoring to all students with a focus on transfer students, sophomores, veterans, and others undergoing a transition to UT Arlington. Students can drop in, or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

Library Info

Library Home Page	http://www.uta.edu/library
Subject Guides	http://libguides.uta.edu
Subject Librarians	http://www.uta.edu/library/help/subject-librarians.php
Database List	http://www.uta.edu/library/databases/index.php
Course Reserves	http://pulse.uta.edu/vwebv/enterCourseReserve.do
Library Tutorials	http://www.uta.edu/library/help/tutorials.php
Connecting from Off-Campus	http://libguides.uta.edu/offcampus
Ask A Librarian	http://ask.uta.edu

The following URL houses a page where we have gathered many commonly used resources needed by students in online courses: http://www.uta.edu/library/services/distance.php.

The subject librarian for your area can work with you to build a customized course page to support your class if you wish. For examples, visit http://libguides.uta.edu/os and http://libguides.uta.edu/pols2311fm . If you have any questions, please feel free to contact Suzanne Beckett, at sbeckett@uta.edu or at (817) 272-0923.

FAQ

Q. It's getting late in the semester and my grade is low but I *really* need a grade of X because of *<insert truly sincere and heartbreaking reasons here>*. What can I do?

A. Invent a time machine and go back to the beginning of the semester and ensure that you do well enough on the quizzes, assignments, and examination so that your semester average exceeds the threshold for grade X. Seriously, there is no other option. It is **your** responsibility to track your grade performace **during** the semester to ensure that this issue does not arise. Do **not** wait until it is too late.

Q. I am supposed to graduate this semester and my grade is too low / I submitted an assignment late and got no credit / I did badly on the final examination / ... . Can I do some extra work to get my grade up enough to graduate?

A. No. It is **your** responsibility to stay focused on your class work even if you expect to graduate this semester. Do **not** falter in your last semester. Do **not** wait until it is too late.

Q. I made a mistake and submitted a wrong file or files for an assignment. Can I submit it after the deadline?

A. No. You can submit assignments as many times as you want before the deadline. After the deadline, the assignment is graded as submitted. It is **your** responsibility to verify that your submission is correct **before** the deadline expires. Do **not** wait until it is too late.

Q. I didn't make the deadline for a submission, but I have a screenshot showing that the files have a

timestamp before the deadline. Will you accept that?

A. No. It is *your* responsibility to make your submission on Blackboard ***before*** the deadline expires. Do ***not*** wait until it is too late.

Q. I don't plan on attending classes. Will you send me an email summarizing anything important that happens in class?

A. No. It is *your* responsibility to stay abreast of anything that happens in class. If you choose not to attend, ensure that you get the information from someone who did. Do ***not*** wait until it is too late.

Q. I have travel plans that will cause me to miss the end of the semester and/or the final examination. Will you make special arrangements to accommodate this?

A. No. It is *your* responsibility to plan your travel so that you do not miss class or the final examination. There's plenty of time to do so now. Do ***not*** wait until it is too late.

Q. I have some questions but they're not about this class. Can I still talk to you?

A. Yes. Feel free to come by during office hours if you want to discuss *anything*. I give priority to those students that have issues with the class material (especially just before assignments are due), but otherwise I am open to discussing anything you want.

Course Topics

Module	Description	*Scott* Chapters
M01	Introduction	1
M02	Regular Expressions and CFG	2.1
M03	Names, Scopes, and Bindings	3.1 - 3.5
M04	Semantic Analysis	4.1
M05	Target Machine Architecture	5
M06	Control Flow	6
M07	Type Systems	7
M08	Composite Types	8
M09	Subroutines and Control Abstractions	9
M10	Data Abstraction and Object Orientation	10
M11	Concurrency	13
M12	Scripting Languages	14
M13	Run Time Program Management	16

> ***As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. — Brian A. Dalio***

Emergency Phone Numbers

In case of an on-campus emergency, call the UT Arlington Police Department at **(817) 272-3003** (non-campus phone) or **2-3003** (campus phone).

You may also dial **911**.

The UT Arlington Police Department *non-emergency* number is **(817) 272-3381**.