

CSE 1325: Object-Oriented Programming
Fall 2018 Revision 1

Instructor: George F. Rice

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Office Hours: Tuesday and Thursday, 11:00 am –12:00 pm or by appointment

Section Information: CSE 1325-001

Time and Place of Class Meetings: NH 111, Tuesday and Thursday, 8:00-9:20 am

TA: TBD

TA Office Number: Engineering Research Building, Room TBD

TA Office Hours: TBD

TA Email Address: TBD

Section Information: CSE 1325-002

Time and Place of Class Meetings: NH 111, Tuesday and Thursday, 9:30-10:50 pm

TA: TBD

TA Office Number: Engineering Research Building, Room TBD

TA Office Hours: TBD

TA Email Address: TBD

Description of Course Content: 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.

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number is 817-272-3381.

Student Learning Outcomes: Students successfully completing this course should be able to:

- Program in the C++ programming language
- Implement concepts learned in previous classes in C++
- Understand and apply the concept of encapsulation
- Understand and apply the concept of inheritance
- Understand and apply the concepts of polymorphism including generics
- Understand how to read and design basic UML diagrams
- Create a simple Command Line User Interface (CLI)
- Create a simple Graphical User Interface (GUI)
- Understand the concepts of multithreading
- Understand the basic concepts of Software Engineering design methods
- Compare and contrast OO languages and procedural languages in terms of security, reliability, and reusability.
- Be able to choose an appropriate type of language structure for a given problem
- Common programming practices including an introduction to agile processes, version control, and regression test frameworks

Required Textbooks and Other Course Materials:

- Programming Principles and Practice Using C++, 2th Edition, Bjarne Stroustrup
- Operating System: Ubuntu 18.04 with your choice of desktop (a VM appliance is provided)
- UML designer: Umbrello 2.24.3 or equivalent instructor-approved application
- C++ compiler: Gnu Compiler Collection (gcc) version 7.3
- C++ debugger: Gnu Data Display Debugger (ddd) version 3.3.12
- C++ library: GIMP Tool Kit (gtkmm) version 3.0
- Version Management: git version 2.17.1
- Your choice of programming editor or integrated development environment

Descriptions of major assignments and examinations:

Exam #1 – Thursday, September 27

Exam #2 – Thursday, October 25

Exam #3 – Thursday, November 29*

Departmental Final Exam (all sections) – Monday, December 10 at 5:30 pm

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. As the instructor of this section, I have established the following attendance policy: Attendance is optional but strongly encouraged. Students who skip class may miss the frequent pop quizzes, important demonstrations, and discussions in class. This class is more than just "programming", and covers many fundamentals of successful system / software engineering practice.

However, 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.

Other Requirements: CSE 1320: Intermediate Programming, passed with a C or better, is a prerequisite for this class.

Grading: The current breakdown of the grade is as follows:

- **Pop Quizzes:** 10%
- **Homework:** 30%
- **Three Exams:** 10% each
- **Departmental Final Exam:** 30%
- **A 70 or higher grade is required on the Departmental Final Exam to pass this class regardless of other class work**

Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels; see "Student Support Services," below.

Departmental Final Exam: Final will be on Monday, December 10 at 5:30 PM. **You may not take the final in our classroom.** Rooms will be assigned closer to the date of the final based on your last name. This exam will be 30% of your overall grade. The date and time of the exam is not negotiable.

No late policy exists this semester.

- Assignments are due when scheduled, and **late work will not be graded** if submitted after the due date. Note that Blackboard sometimes lags, and should not be relied upon to accept last second submissions.
- Once a grade has been posted, the student will have **2 weeks to contest your grade** with whoever graded that assignment – the GTA for homework, and the instructor for pop quizzes and exams. Once a grade has been posted for 2 weeks, the grade is final and will not be changed.
- **Students should not predicate their decision to complete assignments and take exams on their own final grade calculations.** Grading errors will be corrected if identified up until the final grade is approved for the course, and students who skipped work relying on incorrect grades will not be given remedial work. The assignments and exams are for the *student's* benefit, and *all* are expected to be completed as assigned.

This semester, sections 001 and 002 will follow a synchronized lecture schedule. A student who is unable to attend a scheduled lecture during their assigned section may attend a different section lecture subject to available seating, or may watch the lecture on Echo360 ALP video via the Blackboard side bar. Note that sections 003 and above are NOT synchronized with the other sections, and are NOT a practical option for missed lectures.

A **Pop Quiz** will be taken during class approximately once per week. All students should bring a 3"x5" index card to *every* class on which to write the answers to each pop quiz. Each quiz will consist of 2 questions: (1) Your name, and (2) A short answer to a simple question covered in a recent lecture. The pop quizzes are intended primarily to measure attendance and encourage class engagement.

All students will complete approximately twelve mandatory **Homework** assignments during the semester to ensure competent understanding of C++ and the Object-Oriented Programming paradigm. Additional bonus work may be offered as part of these assignments, for which extra credit may be awarded in addition to the deeper knowledge gained.

All students will complete **3 Exams** and a **Departmental Final Exam**. Theory and practice covered earlier in the semester impact the topics of the latter exams, thus all exams should be considered comprehensive.

Make-up Exams:

- If a student sits any exam, this means the student accepts the responsibility for that exam. Once taken, the exam will not be given again, and no make-up will be scheduled.
- If a student cannot make an exam other than the Final Exam, and the student brings adequate documentation of why they did not attend, such as a doctor's note, then the Final Exam score will be substituted for that exam. If not, the grade will be a zero.
- Departmental final exam rules are set by the department, and will be provided to students via an update to this syllabus as soon as they become available.

A dental appointment or other non-emergency health situation is not an acceptable excuse for missing any examination. Written documentation of an emergency health situation is required, and its adequacy will be solely determined by the instructor.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend **at least** an additional 9 hours per week of their own time in course-related activities, including reading recommended materials, researching and completing assignments, preparing for exams, etc.

The homework assignments planned for this semester may include bonus work for extra credit. Students desiring additional credit for study and practice should schedule a time during office hours to discuss. Students should not rely on extra credit to pass this class, but should endeavor to complete all assignments and quizzes with their usual high standard of excellence. **Extra credit work cannot be assigned with a due date past Thanksgiving** due to insufficient time prior to Final Review Week.

If unexpected events impact the class (inclement weather, unexpected closings, power outages, class delays or other issue) and a student completes an assignment or task regardless, the instructor has the option to award additional extra credit.

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, currently on-line at <http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>.

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 (<http://www.uta.edu/aao/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)** <http://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 calling 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 (“University”) 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. Michelle Willbanks, Title IX Coordinator at (817) 272-4585 or titleix@uta.edu*

Academic Integrity: Students enrolled 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/>. Faculty are encouraged to discuss plagiarism and share the following library tutorials <http://libguides.uta.edu/copyright/plagiarism> and <http://library.uta.edu/plagiarism/>

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>.

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 makeup 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 exit the room and move toward the nearest exits, which are located directly south (straight ahead) and east (turn left) of our classroom. If room 100 is not traversable, take the adjacent hallway north (turn right) to that exit instead. **The evacuation map should be previewed at https://www.uta.edu/campus-ops/ehs/fire/Evac_Maps_All/Evac_NH/Evac_NH_111.pdf.**

When exiting 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.

Active Shooter Procedures: In the event of an active shooter in your building, the Arlington Police Department suggests the following options. **These options are not chronological**, but are designed to address dynamic situations. **Assess the situation** (your location, the location of the threat, type of threat, etc.), **identify and weigh your options, develop a plan of action**, and **commit to it**. More information is available at <https://police.uta.edu/activeshooter>.

- **Avoid:** Know your exit and escape options in advance. Stay away from or (if possible) safely leave the area, taking others with you if possible. If you reach your car, leave campus. Once clear of danger, call 911 if you have pertinent information on the intruder.
- **Deny:** If you can't leave the area safely, deny or slow entry to the intruder. Silence your phone. Turn off lights and projectors. Close blinds, lock doors, and barricade doors and windows. Hide out of sight, but be prepared to run or defend yourself if needed.
- **Defend:** If you can't avoid or deny entry to the intruder, defend your location. Use physical force and any weapons available - fire extinguishers, books, chairs, belts, umbrellas, pens/scissors, hot coffee/drinks, trash cans, etc. Use the element of surprise. Fight as a team. Commit to your actions and follow through. Be aggressive, loud, and utterly determined to disable the intruder.

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/studentsuccess/success-programs/programs/resource-hotline.php>

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.

The English Writing Center (411LIBR): The Writing Center offers **FREE** tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at <https://uta.mywconline.com>. Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see www.uta.edu/owl for detailed information on all our programs and services.

The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>

Librarian to Contact: Martin Wallace (martin.wallace@uta.edu, 817-272-3924, Central Library 518, <https://library.uta.edu/node/1228>) <http://www.uta.edu/library/help/subject-librarians.php>

Course Schedule

Class Date	Lecture	Chapters	Topic
Thu, Aug 23	1	1, 2, 22	Introduction
Tue, Aug 28	2	3	Encapsulation via Classes
Thu, Aug 30	3	4	Methods
Tue, Sep 4	4	5, 26	Exceptions and Debugging
Thu, Sep 6	5	8	Scope
Tue, Sep 11	6	9	Inheritance and Operator Overloading
Thu, Sep 13	7	10	Multiple Inheritance and File Input / Output (I/O)
Tue, Sep 18	8	11	Formatted I/O
Thu, Sep 20	9	(6)	Writing an Object-Oriented C++ Program (Part 1)
Tue, Sep 25	10	(7)	Writing an Object-Oriented C++ Program (Part 2)
Thu, Sep 27			Exam #1
Tue, Oct 2	11	12	Return Exam; Intro to Scrum
Thu, Oct 4	12	12	Intro to Graphical User Interfaces (GUI)
Tue, Oct 9	13	(16)	Widgets and Standard Dialogs
Thu, Oct 11	14	(16)	Main Windows and Custom Dialogs
Tue, Oct 16	15	13-15	More about GUIs plus Lambdas
Thu, Oct 18	16	(16)	Writing an Object-Oriented GUI Application (Part 1)
Tue, Oct 23	17	(16)	Writing an Object-Oriented GUI Application (Part 2)
Thu, Oct 25			Exam #2 (Last day to drop is November 2)
Tue, Oct 30	18		Return Exam; Intro to the Class Project
Thu, Nov 1	19	17	Polymorphism
Tue, Nov 6	20	18, 19	Templates
Thu, Nov 8	21	20, 21	Containers and Iterators
Tue, Nov 13	22	23, 24	Regular Expressions and Maps
Thu, Nov 15	23	25	Embedded Programming with State Machines
Tue, Nov 20			Project Work Day
Thu, Nov 22			Thanksgiving
Tue, Nov 27	24		Concurrency
Thu, Nov 29			Exam #3
Tue, Dec 4			Return Exam; Final Exam Review
Mon, Dec 10			Departmental Final Exam (5:30 pm all sections)

Chapter references are approximate. Not all class material is in Stroustrup.

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. –George F. Rice.

LIBRARY <http://library.uta.edu>

RESOURCES FOR STUDENTS

Research or General Library Help

Academic Plaza Consultation Services <http://library.uta.edu/academic-plaza>

Ask Us <http://ask.uta.edu/>

Library Tutorials <http://library.uta.edu/how-to>

Subject and Course Research Guides <http://libguides.uta.edu>

Librarians by Subject <http://library.uta.edu/subject-librarians>

Research Coaches <http://libguides.uta.edu/researchcoach>

Resources

A to Z List of Library Databases <http://libguides.uta.edu/az.php>

Course Reserves <http://pulse.uta.edu/vwebv/enterCourseReserve.do>

Study Room Reservations <http://openroom.uta.edu/>

Subscribe to the MavAlert system to be sent information in case of an emergency to your cell phone or email accounts. Anyone can subscribe at <https://mavalert.uta.edu/> or <https://mavalert.uta.edu/register.php>

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number is 817-272-3381.