

CSE 1325: Object-Oriented Programming
FALL 2016

Instructor: George F. Rice

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

Section Information: CSE 1325-001

Time and Place of Class Meetings: CH 106, Tuesday and Thursday, 9:30-10:45 am

Description of Course Content: Program design and implementation using C++. Object-oriented concepts, basic Unified Modeling Language (UML) modeling, collection classes, generics, reflection, reusability, and introduction to software design patterns. Projects involve extensive programming and may include user interfaces and multi-threading.

Student Learning Outcomes:

- Basic programming practices including introduction to agile processes, version control, and regression test frameworks
- Object Oriented Theory: Encapsulation, inheritance, polymorphism
- Introduction to the C++ programming language
- Input and output: Files, keyboards, screen prints, and exception handling
- Early design concepts (communication and structure)
- Using Application Programming Interfaces (API) and libraries
- Command Line Interfaces (CLI) and Graphical User Interfaces (GUI)
- Basic Graphics class design

Required Textbooks and Other Course Materials:

- Programming Principles and Practice Using C++, 2th Edition, Bjarne Stroustrup
- C++ compiler with editor or Integrated Development Environment (IDE)
- Unified Modeling Language Reference Manual, 2nd Edition, Rumbaugh et. al.
- UML diagramming software such as Umbrello, Visio, or Creately.com
- git Software Configuration Management (git)

Descriptions of major assignments and examinations:

Midterm #1 – Tuesday, September 27

Midterm #2 – Thursday, October 27

Final Exam – Thursday, December 15 8:00 – 10:30 am

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". 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. The final homework project may include at least one 10-minute sprint review, and one 20-minute final demonstration, one or both of which may be outside normal class hours. Scheduling for these is flexible.

Grading:

The current breakdown of the grade is as follows:

- Pop Quizzes : 10%
- Homework: 30%
- Three Exams : 20% each

See www.uta.edu/records/faculty-staff/grading.php for how to enter grades on Blackboard, etc. and www.uta.edu/records/calendars/grade-reports.php for dates and deadlines related to grades. 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.

No late policy exists this semester. Assignments are due when scheduled, and late work will not be accepted nor graded after the due date.

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.

All students will complete approximately six mandatory **Homework** assignments during the semester to ensure competent understand 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 three exams, two **Midterms** and a **Final** examination. Theory and practice covered earlier in the semester impact the topics of the latter exams, therefore, the second midterm and the final exam will be 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 a midterm 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 midterm. If not, the grade will be a zero.
- If a student informs the instructor they cannot make the Final Exam before it is given, then a make-up exam will be scheduled. If they miss the Final Exam, and the student brings adequate documentation of why they did not attend, such as a doctor’s note, a grade of Incomplete will be given and a make-up exam will be scheduled. If neither action is taken, the Final Exam will be a zero.

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 required materials, 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 after Thanksgiving break** 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 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.

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://wwwb.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) 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. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@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/>.

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 exit, which is located to the left as you exit the classroom. 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. Evacuation plans may be found at http://www.uta.edu/campus-ops/ehs/fire/Evac_Maps_Buildings.php.

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>.

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. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

The English Writing Center (411LIBR): The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at <http://uta.mywconline.com>. 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
<http://www.uta.edu/library/help/subject-librarians.php>

Course Schedule

Class Date	Lecture	Chapters	Topic
Thu, Aug 25	1	1, 2, (22)	Syllabus, OOP and C++ Overview + Version Control, Class Survey
Tue, Aug 30	2	3	Classes, Types, and Values + Top-Level Diagram
Thu, Sep 1	3	4	Computation + Singleton Pattern, UML Class Diagram
Tue, Sep 6	4	5, (26)	Errors, Exceptions, and Debugging + UML Activity Diagram
Thu, Sep 8	5	6	Writing an Object-Oriented C++ Program (Part 1) + UML Use Case Diagram, MVC Pattern
Tue, Sep 13	6	7	Writing an Object-Oriented C++ Program (Part 2) + UML Sequence Diagram
Thu, Sep 15	7	8	In Detail: Declarations, Arguments, Scope, Namespace, Preprocessor, and Inheritance
Tue, Sep 20	8	9	In Detail: Classes, Objects, Interfaces, and Operator Overloading + Strategy Pattern, IP
Thu, Sep 22			Exam #1 Review
Tue, Sep 27			Exam #1 (midterm grades due Oct 17 at 5 pm)
Thu, Sep 29	9	10	Command Line Interfaces: Input and Output + Extending UML Class Diagrams
Tue, Oct 4			Return Exam
Thu, Oct 6	10	11	Files + Façade Pattern
Tue, Oct 11	11	12	Graphical User Interfaces: The Display Model + UML Stereotypes
Thu, Oct 13	12	12	Graphing + Observer Pattern
Tue, Oct 18	13	13	Graphics Classes + Concurrency and Hyperthreading
Thu, Oct 20	14	13	Graphics Classes + Factory Pattern
Tue, Oct 25			Exam #2 Review
Thu, Oct 27			Exam #2 (Last day to drop is Nov 2)
Tue, Nov 1			Return Exam
Thu, Nov 3	15	14	Graphics Class Design + UML Statechart Diagram
Tue, Nov 8	16	14	Graphics Class Design + Decorator Pattern
Thu, Nov 10	17	15	Graphics Functions and Data + UML Deployment Diagram
Tue, Nov 15	18	15	Graphics Functions and Data + Adapter Pattern
Thu, Nov 17	19	16	More on Graphical User Interfaces
Tue, Nov 22	20		Anti-Patterns and the Art of Software
Thu, Nov 24			Thanksgiving Holiday
Tue, Nov 29	21		Guest Lecture Day
Thu, Dec 1	22		TA Lecture Day
Tue, Dec 6			Review (Dec 7 is last day of classes)
Thu, Dec 15			Final Exam (8:00-10:30 for TR 9:30 Class) (11:00-1:30 for TR 12:30 Class)

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.

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 817-272-3381

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>

Additional Resources for Students

Academic Help

Academic Plaza Consultation Services library.uta.edu/academic-plaza

Ask Us ask.uta.edu/

Library Tutorials library.uta.edu/how-to

Subject and Course Research Guides libguides.uta.edu

Subject Librarians library.uta.edu/subject-librarians

Resources

A to Z List of Library Databases libguides.uta.edu/az.php

Course Reserves pulse.uta.edu/vwebv/enterCourseReserve.do

FabLab fablab.uta.edu/

Special Collections library.uta.edu/special-collections

Study Room Reservations openroom.uta.edu/