CIS 3340-115 Advanced C++ Programming
Summer 2018 rev. 05.29.2018
Course Location: Founders Hall, Room 308
Course Hours: Tuesday/Thursday 2:30-5:15pm
Texas A&M University-Central Texas

INSTRUCTOR AND CONTACT INFORMATION
Instructor: Randy Brown
Office: FH 323-J
Phone: 254-519-5462
Email: rwbrown@tamuct.edu
        For course related communications, please use Canvas "Inbox"
COBA Department Main Phone Number: (254) 519-5437
COBA Department Main Email: cobainfo@tamuct.edu
COBA Department Main Fax#: (254) 501-5825

Office Hours:

Location	Mon	Tues	Wed	Thurs	Fri
FH 323J	By Appointment	1:00-2:00 pm, & by appointment	By Appointment	1:00-2:00 pm, & by appointment	By Appointment
Virtual	By Appointment	By Appointment	By Appointment	By Appointment	By Appointment

Mode of instruction and course access:
This course is a Face-to-Face course; however, we will use the TAMUCT Canvas Learn System extensively – pretty much for all but the lectures. You will use the Canvas username and password communicated to you separately to logon to this system. The course syllabus, schedule, supplemental readings, class announcements, power point slides, learning modules, homework assignments, exams and other course related documents will be posted on Canvas. Each student is responsible for the posted material, and should check the Canvas at least weekly for updates. The course outline in this syllabus shows the basic schedule for the semester.

Student-instructor interaction:
Please send all course related correspondence to me using Canvas Inbox. Please use TAMUCT email only when Canvas is not available. I check messages several times a day during the week and at least once during the weekends. I will try to respond within 24 hours during Monday through Thursday and within 48 hours on Friday through Sunday. Please do not hesitate to stop by my office during the scheduled office hours or contact me via phone / Canvas email or TAMUCT email, if there are any personal problems or challenges that are hindering your regular progress in the course.

911 Cellular:
Emergency Warning System for Texas A&M University-Central Texas
911Cellular is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in 911Cellular through their myCT email account.

Connect at 911Cellular [https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management] to change where you receive your alerts or to opt out. By staying enrolled in 911Cellular, university officials can quickly pass on safety-related information, regardless of your location.

COURSE INFORMATION
Course Overview and description:
An advanced course in the C++ programming language. Covers the advanced features of C++ such as classes, friends, abstraction, operator overloading, inheritance, polymorphism, templates, and object oriented programming techniques. Students will analyze and program several representative problems.

Prerequisite: CIS 240 or 330 or approval of School Director.

Course Objective:
Student Learning Outcomes:
- Understand and master syntax and features of the C++ Programming Language:
- Control structures;
- Using standard library functions and templates;
- Creating programmer-defined classes;
- Implementing programmer-defined data types;
- Exception handling;
- Operator overloading;
- Polymorphism and virtual functions; and
- The Linked-List data type as an exercise in class design.
- Apply principles of program design and logic:
- Functional abstraction;
- Modular design using functions;
- Encapsulation techniques;
- Class design incorporating all of the principles listed above.
- Apply principles of program logic to isolate errors:
- Debuggers included with the Integrated Development Environment;
- Setting breakpoints and watch variables;
- Using output to report program progress;
- Using "stubs" and "drivers" to test small, manageable components.
- "Learn-by-doing" problem solving methodologies that can be applied to various programming languages and other life situations.

Required Reading and Textbook(s):

- o Book (Required): Introduction to Windows and Graphics Programming with Visual C++, 2nd ed.
  Roger Mayne
  ISBN 976-981-4641-86-9
- o Book (Recommended): Starting out with C++ Early Objects, 9th ed.
  Gaddis, Walters, Muganda
  ISBN: 978-0-13-440024-2

  Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

- o Access to a computer with Visual Studio, including C++, and a Web Browser

- o Students preferring to use their own computers are required to have products,
  - data encodings, file names, system structure, and products equal to those provided in the computer lab and the server used in class.

- o **Current publications**: The campus library contains numerous books and periodicals relating to Computer Science. The student should take advantage of this resource by visiting the library.

- o **Other materials**: We will be using additional sources for some of the more advanced topics not covered by the book.

COURSE REQUIREMENTS

Course Requirements:

- **Exams:** There will be a term project will act as a final exam. It will utilize GUI, Database, Objects, etc. Exact requirements will be published by the end of Week 2. This project will be worth 400 points (40%).

- **Homework/Practice Problems:** There will be practice problem sets throughout the semester. The total number has not been set, but the aggregate total will be 400 points (40%).

- **Reading Assignments:** All assigned chapters will be used as the basis for class and/or Canvas discussions. Study the assigned readings before each class. In addition, there will be some supplemental readings to cover concepts not included in the textbook

- **Participation/Discussion Questions**:

  - (from TAMU-CT Student Catalog): Student absences are considered by the University to be strictly between the individual student and faculty member. The faculty member has the responsibility and authority to determine whether make-up work can be done because of absences. Students may request make-up consideration for valid and verifiable reasons such as illness, death in the immediate family, legal proceedings, or participation in University-sponsored activities. Students who participate in University-sponsored activities are responsible for obtaining a written explanation for their absence from the faculty/staff member who is responsible for the activity.

  - Class attendance is required. Students are responsible for any material missed during an absence. In all cases, the responsibility remains with the students to meet/obtain all course requirements/changes. If you are not present the class period your presentation is scheduled, the presentation grade is zero. Regular course progress is expected. It is each student's responsibility to review the Canvas and syllabus for the latest information, assignments and examinations. NOTE: Attendance will be taken each class period. Attendance/participation will count as 20% (200 Points) of your total grade. NOTE: Canvas Discussion questions will count toward participation.

- **Late Submissions:** Homework Assignments will be considered late if submitted after the due date/time. Each CLASS DAY late will be a 10% deduction (20% per week) That means that NO submissions will be accepted if submitted more than 5 weeks after the due date. Any submissions AFTER 5 weeks will be considered lack of participation and will result in a lower participation score. In addition, discussions (if assigned) MUST be completed within the week during which the discussion is assigned (i.e. late discussions will NOT be allowed). Late tests will NOT be accepted! NOTE: NO work (nothing, nada, zilch) will be accepted after the last day of "class" (7/27/2018).

- **Other Notes about assignments:**

  - All assignments (except .docx) will be zipped prior to submission to Canvas – any unzipped assignments (except .docx) will not be accepted.
  - If there are multiple parts, submit all parts in a SINGLE zip file. I would suggest you create a folder for each assignment, then you can zip that entire folder at once…
  - Make sure all programs are labelled in a logical manner that makes it easy for me to figure out which program is which.
  - All assignments will be posted in Canvas with a value of 100 points, regardless of how many "points" they actually count toward your final grade. Therefore, Canvas is NOT completely accurate as far as total grades go.
  - Grades are not given; the student earns them. Rubrics are employed whenever possible to assure that the grading of an individual assignment is consistent. There are always disagreements about the grade given to a work product and a student's

expectation; students are encouraged to make sound well-reasoned arguments as to why they should receive more points. Arguments that are not well-reasoned include:

1. I need a better grade because I am on probation.
2. I come from a good family.
3. I will be deported.
4. I will lose my scholarship.
5. I think it is an A paper.

Grading Criteria Rubric and Conversion

Required Activity	Number	Points	Total
Final Exam Project	1	400	400
Topical Problems	Severa1	40	400
Attendance/Participation		200	200
Total			1000

Range	Letter
1000-	A
890-800	B
790-700	C
690-600	D
599-0	F

Posting of Grades

All student grades will be posted on the Canvas Grade book and students should monitor their grading status through this tool. Grades for weekly assignments, discussions, quizzes and exams *should* be posted (no guarantees) within 1 week following the due date.

COURSE OUTLINE AND CALENDAR
Complete Course Calendar

Date	Chapter(s)	Assignment(s) for the Week – Due in 1 Week
6/5/2018	Syllabus/Introductions Chapter 1	Syllabus Acknowledgement Introduction Discussions, Chapter 1 Homework
6/7/2018	Chapter 2	Chapter 2 Homework
6/12/2018	Chapter 3	Chapter 3 Homework
6/14/2018	Supplemental - Recursion	Recursion Problem
6/19/2018	Chapter 4	Chapter 4 Homework
6/21/2018	Chapter 5	Chapter 5 Homework
6/26/2018	Chapter 6	Chapter 6 Homework
6/28/2018	Chapter 7	Chapter 7 Homework

7/3/2018	Chapter 8	Chapter 8 Homework
7/5/2018	Supplemental - Virtual Functions	Virtual Functions Problem
7/10/2018	Supplemental - Exceptions & Templates	Exception/Template Problem
7/12/2018	Supplemental - Connecting to a Database	Database Problem
7/17/2018	Supplemental - Misc Topics	Misc Topics Problem
7/19/2018	Chapter 9	Chapter 9 Homework
7/24/2018	Presentations	Project Presentations
7/26/2018	Presentations	Project Presentations Final Project Due

Important University Dates:
June:

Mon, 4th Class begins (1st 5 week, 10 week and 8 week)
Mon, 4th ADD/DROP/LATE REGISTRATION BEGINS (10-week, 8-week, & 1st 5-week sessions) ($25 fee assessed for late registrants)
Thu, 7th Last day to drop 1st 5-week classes with no record
Mon, 11th Last day to drop 8-week classes with no record
Tue, 12th Last day to drop 10-week classes with no record
Fri, 22nd Last day to drop a 1st 5-week class with a Q or withdraw with a W
Fri, 22nd Student End of Course Survey Opens (1st 5-Week Classes)
Fri, 29th Deadline for Admissions applications
Fri, 29th Deadline for submission of final committee-edited theses with committee approval signatures to Office of Graduate Studies
Fri, 29th Last day to drop a 8-week class with a Q or withdraw with a W

July:

2nd-6th Finals Week First 5 week session
Mon, 2nd Deadline to submit application to Teacher Education Program
Wed, 4th Independence Day
Thu, 5th Last day to withdraw from the university (1st 5- weeks session students)
Fri, 6th 1st 5 week classes end
Fri, 6th Deadline to Submit Graduation Application for Ceremony Participation
Sun, 8th Student End of Course Survey Opens (1st 5-Week Classes)
Mon, 9th 2nd 5 week classes begin
Mon, 9th Grades due from faculty by 3pm (1st 5 week classes)

Mon, 9th ADD/DROP/LATE REGISTRATION (2nd 5-week sessions) ($25 fee assessed for late registrants)

Thu, 12th Last day to drop 2nd 5-week classes with no record

Fri, 13th Student End of Course Survey Open (8-Week Classes)

Fri, 20th Last day to drop a 10-week class with a Q or withdraw with a W

23rd-27th Finals Week - Summer 8 week session

Fri, 27th Last day to drop a 2nd 5-week class with a Q or withdraw with a W

Fri, 27th Last day to withdraw from the University (8 weeks session students)

Fri, 27th 8 week classes end

Fri, 27th Deadline for submission of final committee-edited theses with committee approval signatures to Office of Graduate Studies

Sun, 29th Student End of Course Survey Close (8-Week Classes)

Sun, 29th Student End of Course Survey Opens (10-Week and 2nd 5-Week Classes)

Mon, 30th Grades due from faculty by 3pm (8 week classes)

August:

Wed, 1st GRE/GMAT scores due to Office of Graduate Studies

6th-10th Finals Week - 10 week and Second 5 week sessions

Fri, 10th Last day to file for Degree Conferral (Registrar's Office) ($20 Late Application Fee applies)

Fri, 10th Last day to withdraw from the university (10-week & 2nd 5-week session students)

Fri, 10th 10 week and 2nd 5 week classes end

Fri, 10th Last day to apply for $1000 Tuition Rebate for Summer graduation (5pm)

Sat, 11th Commencement (TBD)

Sun, 12th Student End of Course Survey Close (10-Week and 2nd 5-Week Classes)

Tue, 14th Grades due from faculty by 3pm (10 week & 2nd 5 week classes)

Tue, 14th Last Day to clear Thesis Office

TECHNOLOGY REQUIREMENTS AND SUPPORT

Technology Requirements.

This course will use the A&M-Central Texas Instructure Canvas learning management system. Logon to A&M-Central Texas Canvas [https://tamuct.instructure.com].

Username: Your MyCT username (xx123 or everything before the "@" in your MyCT e-mail address)

Password: Your MyCT password

Technology Support.

For technology issues, students should contact Help Desk Central.

24 hours a day, 7 days a week:

Email: helpdesk@tamu.edu

Phone: (254) 519-5466

Web Chat: http://hdc.tamu.edu

When calling for support please let your support technician know you are a TAMUCT student.

For issues related to course content and requirements, contact your instructor.

Canvas Support
Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select "Chat with Canvas Support," submit a support request through "Report a Problem," or call the Canvas support line: 1-844-757-0953.
For issues related to course content and requirements, contact your instructor.

Other Technology Support
For log-in problems, students should contact Help Desk Central.
24 hours a day, 7 days a week:
> Email: helpdesk@tamu.edu
> Phone: (254) 519-5466
> Web Chat: [http://hdc.tamu.edu]
Please let the support technician know you are an A&M-Central Texas student.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Drop Policy.
If you discover that you need to drop this class, you must complete a Drop Request Form [https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf].

Professors cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the Academic Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Academic Integrity.
Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university's Office of Student Conduct. Ignorance

of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

Academic Accommodations.
At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Department of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations please contact the Department of Access and Inclusion at (254) 501-5831. Any information you provide is private and confidential and will be treated as such.

For more information please visit our Access & Inclusion web page [https://www.tamuct.edu/student-affairs/access-inclusion.html].

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit the Student Affairs web page [https://www.tamuct.edu/student-affairs/index.html]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these requirements and guidelines online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender–including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

Tutoring.
Tutoring is available to all A&M-Central Texas students, both on-campus and online. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or have any other question, contact Academic Support Programs at (254) 519-5796, or by emailing Dr. DeEadra Albert-Green at deeadra.albertgreen@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive FREE online tutoring and writing support. This tool provides tutoring in over 40 subject areas. Access Tutor.com through Canvas.

University Writing Center: Located in 416 Warrior Hall, the University Writing Center (UWC) at Texas A&M University-Central Texas is a free workspace open to all TAMUCT students from 10am-4pm Monday-Thursday during the summer with online hours available Monday-Thursday from 6:00-9:00pm. Students may arrange a one-on-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via [WCOnline](https://tamuct.mywconline.com/) at [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu to schedule an online tutoring session. Tutors are prepared to help writers of all levels and abilities at any stage of the writing process.

While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the University Writing Center is here to help!

If you have any questions about the University Writing Center, please do not hesitate to contact Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu.

University Library.
The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our [Library website](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index].

OPTIONAL POLICY STATEMENTS:
A Note about Sexual Violence at A&M-Central Texas
Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the [Title IX webpage](https://www.tamuct.edu/departments/compliance/titleix.php) [https://www.tamuct.edu/departments/compliance/titleix.php].

INSTRUCTOR POLICIES
- Instructor reserves the right to modify the syllabus during the course of the semester for the benefit of the students.
- Instructor reserves the right to supplement the material presented in the text with addition material that may benefit the students by either providing additional information or a different point of view.
- Instructor expects that the students will act in a curious and professional manner in all interactions with other students and the instructor.
- Instructor reserves the right to modify grading rubrics. Changes to grading rubrics are only made to current and/or future assignments.
- Any changes made will be announced in class and posted on Canvas.

Copyright Notice.
Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course instructor. Violation of copyright is against the law and Texas A&M University-Central Texas' Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.