CHEN 1310: Introduction to Computing for Engineers
Syllabus (Spring 2025)

Course & Contact Information

Instructors:	Trevor Franklin, Ph.D. Office: JSCBB/BIOT E1B45 Email - trevor.franklin@colorado.edu
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Class Days/Times:	Tuesdays & Thursdays; 8:00-8:50 AM
Classroom:	Ramaley Biology (RAMY) C250
Labs:	Engineering Center Classroom Wing (ECCR) 143. *Please refer to your course schedule (buffportal.colorado.edu) for weekly times.*
TAs:	Alexandra Dalton, alexandra.dalton@colorado.edu
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Help Hours:	See "Help Hours" module on Canvas for details.
Prerequisites:	Prerequisite or corequisite course of APPM 1340 or 1345 or 1350, or MATH 1300 (minimum grade C-).

Course Communication

Canvas will be used for homework, lab information, learning modules, weekly quizzes, and other class information/resources. You are responsible for all the information that is posted there. Email is not an ideal way to clarify questions on the material; those questions should be answered in lecture, office hours, or lab. If you do need to email, please include both "CHEN 1310:" and a short description of your questions or issue in the subject line to help us identify course-related emails in our inboxes.

Course Description

This course introduces the use of computers in engineering problem solving, including elementary numerical methods. The focus is on teaching programming fundamentals, including modular programming and data and algorithm structure.

Required Materials

1) Access to the Windows version of Microsoft Excel (Office 365 is readily available to all students through OIT's website: oit.colorado.edu). A personal laptop is NOT a requirement to take this course, but you do need to have regular access to a computer that runs the Windows version of Excel. Students in the past have been successful in taking this course even without a personal laptop. However, it will help a great deal to have your own computer that you can bring to class to work through examples. If you do not have a personal laptop/computer, then there are plenty of computer labs on campus with computers for you to use. The official version of Excel/VBA for the course is the Windows version of Excel 2019/Office 365. You may be able to use Excel 2013 but be forewarned that there are slight differences between Excel 2013/2016/2019. If you own a Mac, you can still use it (many students do) by running the Windows version of Excel (see "If You Own a Mac" below).
2) This class utilizes the iClicker system to enhance learning and reward participation in class discussions. I have posted detailed instructions for getting set up with your iClicker to the course Canvas site, so please read through these carefully to make sure you are registered and set up.

If You Own a Mac

Although some students have mentioned that VBA works on the most recent versions of Macs, the Mac version of Excel/VBA generally doesn't work well. Even in the first week of class, there are many optional activities in the Learning Modules that require macro-enabled Excel files (.xlsm); these will not work on a Mac. If you own a Mac and want to use it in the course, you can install the Windows version of Excel with Office 365 provided by the University, by running Boot Camp and partitioning your hard drive so that you can boot your computer with Windows and run the Windows version of Excel/VBA, or by installing Parallels. You may not be able to complete the course objectives, quizzes, and especially the assignments if you use the Mac version of Excel/VBA. You are expected to know the Windows version of Excel/VBA for homework assignments, Learning Modules, iClicker questions, and quizzes. If you choose to use a Mac running Windows Excel/VBA, **you** (not me, nor the TAs) must know the differences and equivalent operations as well as the PC commands/code. In summary, you will not be able to use the Mac version of Excel/VBA in this course. OIT can help you install the Windows version of Excel/VBA onto your Mac (https://oit.colorado.edu/support/it-service-center) but it entails doing one of the following:

1) Use BootCamp (installed on many Macs) to partition your hard drive. You should contact the Help Desk at OIT to have them help you do this.

2) Install and run Parallels (www.parallels.com) on your Mac then install the Windows version of Excel/VBA.

Class Format

You will be expected to complete several online "Learning Modules" (educational screencasts) before each class period and complete the questions that are found both within and at the end of them by 7:00 AM before each class period. I will also ask several "clicker" questions (see below) during each lecture, and these will count towards your overall grade at the end of the semester. There are fixed due dates for many of the items. Also, you will work through lab workshops during your lab/recitation, and you are expected to turn these in by 11:59 PM on Fridays, regardless of the day of your lab. Weekly online quizzes will test your understanding of the material.

I will hold office hours during the week and the TAs will hold additional office hours on Tuesdays, Wednesdays, and Thursdays. Online Learning Modules can be played over and over, allowing you to pause them and practice side-by-side on your computer. *In summary, plenty of help will be available but it is up to you to take initiative to learn the course material.*

Grading

Generally, this class follows a standard grading scheme:

Score ≥ 90	A-/A
80 ≤ Score < 90	B-/B/B+
70 ≤ Score < 80	C-/C/C+
60 ≤ Score < 70	D-/D/D+
Score < 60	F

This could change depending on the overall class average at the end of the semester. However, you will not get a grade that is worse than stated above. *NOTE: I do not round scores up. If you earn an 89.99% then this is a B+ and NOT an A-! Your work in the course = your grade.*

The grade elements are as follows:

Homework	25%
Labs	15%
Lab Attendance	5%
Learning Modules	15%
Clicker Questions	5%
The TANK	10%
Weekly Mastery Quizzes	25%
Total:	100%

Homework

There will be one homework assignment due most weeks (due by 11:59 PM on Fridays unless otherwise specified – see Course Schedule). Occasionally, you will be given a week off from homework. Homework assignments will cover material up through the previous week. Homework assignments are to be completed individually. While you may choose to work in study groups, each student must present/submit their own, original work. Working in groups is encouraged, but all work submitted in this course should represent your 'final product' from your thought/learning process. This means that we would expect each student's homework to appear different from all other students' homework. The lowest single homework score is dropped at the end of the semester.

Labs

You will be required to complete 15 lab assignments/workshops throughout the semester where attendance will be taken as a component of your final grade. You will work through the workshops during lab/recitation periods, and they are aligned with the schedule and homework assignments. Lab workshops are designed to provide you with instruction and examples to reinforce what you are learning elsewhere in the course. Lab workshops are to be submitted electronically to Canvas and are due by 11:59 PM on Fridays (this is to allow extra time in case you do not finish the lab during your lab/recitation section, although labs are designed such that you should be able to finish them during the allotted lab/recitation period). I will drop the single lowest lab at the end of the semester.

Pre-Class Learning Modules

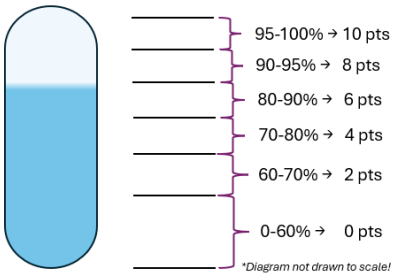
Before most classes, there are Learning Modules on Canvas (online) that are due. A Learning Module consists of a short (typically 4-9 minutes) screencast with 1 - 5 in-video questions that you must answer. These are designed to prepare you for class, and these must be completed with questions answered by 7:00 AM each class day. Each Learning Module has the same weight/value. If there is only one Learning Module assigned on a given day, this is worth only a quarter of the points on a day when four Learning Modules are assigned. Thus, it is important not to miss Learning Modules on the days when several of them are assigned and due. You can answer most in-video questions twice (i.e., you have two attempts for each question). IMPORTANT: The lowest 5% of pre-class Learning Modules are dropped at the end of the semester. This is in case you are sick, absent, accidentally forget to do them, or encounter a technical difficulty.

Clicker Questions

During each class, I will ask clicker questions which will count 5% towards your overall grade at the end of the semester. You must be in class to get credit for clicker questions. Please see the document posted on Canvas for more information on how to register your clicker account.

The TANK

Throughout the semester, you will have many opportunities in the Learning Modules to fill your TANK. By the end of the semester, you will receive a score between 0 and 10 depending on how full your TANK is. (Note: The scale is not linear!) Please see the document "FILL YOUR TANK" on Canvas for information.



Weekly Mastery Quizzes

Every week of the semester except for Week 1, you will be required to take a Mastery Quiz. These are online (on Canvas), timed (1-hour maximum), and will consist of 5-10 multiple choice and/or true/false questions. It is important to note that these quizzes are cumulative and will test you on main concepts from earlier in the semester. The lowest quiz score will be dropped. Note that there is no Final Exam in this course!

Late Policy & the Importance of Planning Ahead

All work in this class needs to be completed in the required time frame. Late work will not be accepted unless due to severe emergencies. In those rare cases, I expect you to notify me ideally before the assignment is due or within one day of the due date. All assignments need to be submitted through Canvas and should not be emailed directly to me. Be aware that technology failures (computer crashing, connectivity issues, etc.) will not be excused, nor will extensions be granted for these types of issues. Technology fails! Make sure you plan early so if a technology failure arises, there will be plenty of time to meet your deadline.

What to Do If You Are Sick

Unexpected illness may arise during the semester. To account for this, at the end of the semester the lowest single homework assignment, the lowest 5% of Learning Modules, the lowest quiz, and the lowest lab are all dropped. Make sure to start your homework and Learning Modules early; if you become sick the night before something is due, I will tell you, "It's been available on Canvas for almost a week!" Start early!

What To Do If You Are Struggling in The Course

Come to office hours for help!
https://www.colorado.edu/engineering-advising/academiccoaching
https://www.colorado.edu/engineering-advising/workshops

Availability of Assignments, Pre-Class Learning Modules, and Submission Policies

Pre-Class Learning Modules will generally be available Thursday (after class) the week before they are due. Homework assignments are submitted online on Canvas and are due on Fridays by 11:59 PM (see above). They are generally available a week before they are due. You must submit all your assignments via Canvas. Homework and labs must all be submitted directly to Canvas. Canvas provides a confirmation email when an assignment is submitted. Please create a folder in your email service/provider and keep all copies of these submission confirmation emails in case there

is a submission issue/problem. We will make every effort to grade and provide feedback on homework assignments, labs, and other assessments within two weeks. You are responsible for keeping copies of all work you submit for grading.

Inclusion

The main goal of this course is to help you build a foundation of computing tools and approaches to tackle engineering problems. We learn from mistakes and failure. Those are an essential part of learning and are not a determination of your abilities. To support the messy side of learning and focus on the process (rather than the product of the "right answer" or the highest grade), a culture of inclusion and respect is essential. We expect you to help create that culture. We will need patience or courage or imagination or any number of qualities in combination to engage in our materials, with our classmates, and to leverage our ideas and experiences for learning and growing.

It is our intent that students from all backgrounds and perspectives belong in this course, that students' learning need to be addressed both in and out of class, and that the various perspectives that students bring to this class be framed as a resource, strength, and benefit. It is out intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please do not wait until the end of the semester to give this feedback. Please let us know ways to improve the effectiveness of the course for you personally or for other students or student groups.

Academic Integrity Consequences

See below for the CU Boulder policy regarding academic integrity and the Honor Code. Any assignments submitted that are not original work and violate the Honor Code (e.g., were produce via cheating, copying, plagiarizing, etc.) will automatically be given a grade of 0 and those grades will not qualify for the lowest scores dropped at the end of the semester.

University Policies

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology [such as essay bots]), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. Understanding the course's syllabus is a vital part in adhering to the Honor Code.

All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution: StudentConduct@colorado.edu. Students found responsible for violating the Honor Code will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Visit Honor Code for more information on the academic integrity policy.

Accommodation for Disabilities, Temporary Medical Conditions, and Medical Isolation

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or DSinfo@colorado.edu for further assistance. If you have a temporary medical condition, see Temporary Medical Conditions on the Disability Services website.

If you have a temporary illness, injury or required medical isolation for which you require adjustment, please reach out to me directly via email so that we can discuss an appropriate supportive path forward.

Accommodation for Religious Obligations

Campus policy requires faculty to provide reasonable accommodations for students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please communicate the need for a religious accommodation in a timely manner. In this class, please reach out to me directly via email so that we can discuss a suitable accommodation. See the campus policy regarding religious observances for full details.

Preferred Student Names and Pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Classroom Behavior

Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, marital status, political affiliation, or political philosophy.

For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits protected-class discrimination and harassment, sexual misconduct (harassment, exploitation, and assault), intimate partner abuse (dating or domestic violence), stalking, and related retaliation by or against members of our community on- and off-campus. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who have been subjected to misconduct can contact OIEC at 303-492-2127 or email CUreport@colorado.edu. Information about university policies, reporting options, and OIEC support resources including confidential services can be found on the OIEC website.

Please know that faculty and graduate instructors are required to inform OIEC when they are made aware of incidents related to these concerns regardless of when or where something occurred. This is to ensure that individuals impacted receive outreach from OIEC about their options and support resources. To learn more about reporting and support for a variety of concerns, visit the Don't Ignore It page.

Mental Health and Wellness

The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact Counseling and Psychiatric Services (CAPS) located in C4C or call (303) 492-2277, 24/7.

Free and unlimited telehealth is also available through Academic Live Care. The Academic Live Care site also provides information about additional wellness services on campus that are available to students.

Acceptable Use of AI in this Class

While you may use generative artificial intelligence (Gen AI) tools to help you learn, you may not submit any work for any assignment that was produced by Gen AI tools. All work submitted in this class must be your own, original work.