CHEN 1310: Introduction to Computing for Engineers
Spring 2022

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Class Meeting Times/Location: **Lectures:** T/Th 8:00 AM – 8:50 AM in RAMY C250
Labs: ECCR 235. Please refer to your course schedule (buffportal.colorado.edu) for weekly times

Course Communication:

Canvas will be used for homework, lab information, learning modules, weekly quizzes, and other class info. You are responsible for all the information that is posted there. Email is not a good way to clarify questions on the material; those questions should be answered in lecture, office hours, or lab.

Office Hours: See "Office Hours" module on Canvas for details.

Course Description:

Introduces the use of computers in engineering problem solving, including elementary numerical methods. Teaches programming fundamentals, including data and algorithm structure, and modular programming. Software vehicles include Excel/VBA and MATLAB. Formerly GEEN 1300 and COEN 1300. Requisites: Requires prerequisite or corequisite course of APPM 1340 or 1345 or 1350 or MATH 1300 (minimum grade C-).

Required Materials:

1) Access to the Windows version of Microsoft Excel (2013, 2016, or 2019 or Office 365). 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 have been taking this course and have been very successful in the past 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. Also, it will make homework easier since you can work at home instead of on campus. 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 below in "If You Own a Mac").

2) This class utilizes the iClicker system to enhance learning and reward participation in class discussions. You cannot use a physical iClicker to participate in class activities. Instead, you will need to create an iClicker Student account and use it on your mobile device (phone or tablet

app, or via a computer web browser) to participate in class activities. Make sure you are using the account linked to your CU email account. You can check this by logging out of all your iClicker accounts on all mobile devices you may be using. Then, log back in, using the iClicker Campus Portal option at the bottom of the registration page. You will not need to purchase an iClicker Student subscription to use mobile polling for Spring 2022. Using the student app, you can review questions asked in class, how you answered them, what your current iClicker score is, and many other features.

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 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 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. You will 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, Clicker questions, and quizzes. If you choose to use a Mac running Windows Excel/VBA, *you* (not me nor 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.

MATLAB will work just fine on a Mac (and also on a Windows machine). MATLAB is available free from OIT (see immediately below).

Strongly Recommended Materials:

Student edition of MATLAB – The last third of the course utilizes MATLAB. The computers in ECCR 235 have MATLAB on them. However, if you wish to work outside of the lab classroom and outside of official class hours (which is inevitable) it is convenient to have MATLAB on your laptop or computer. *Also, it will be very beneficial to have MATLAB on a laptop during class so you can follow along with me as I work through sample problems!* MATLAB is available for free through a university site license. You can go to the following site to obtain information for getting MATLAB for your computer:

https://oit.colorado.edu/software-hardware/software-downloads-and-licensing/matlab

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 within them and at the end of them by 7:00 a.m. before each class period. I will also ask several "clicker" questions (see below) during each lecture, and these will count towards extra credit to be added to 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. Thirteen online quizzes will test your understanding of the material.

I will hold several office hours during the week and the TAs will hold additional office hours on Tuesday, Wednesday, and Thursday nights. Online Learning Modules can be played over and over, allowing you to pause them and practice side-by-side on your computer. *In sum, 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	25%
Learning Modules	15%
Weekly Mastery Quizzes	20%
The Tank	15%
Clicker Questions (Extra Credit)	1%
Total:	101%

Homework:

There will be one homework assignment due most weeks (due by 11:59 p.m. 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 his or her own 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. 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) screencasts with 1-5 in-video questions that you must answer. These are designed to prepare you for class and these must be completed and questions answered each class day by 7:00 am. 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 have the opportunity to answer most in-video question 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 year. This is in case you are sick, absent, accidentally forget to do them, or in the chance that they "just don't go through" or your "dog ate your computer."

Clicker Questions:

During each class, I will ask 1-5 clicker questions which will count towards extra credit at the end of the semester. You must be in class to get credit for a day's clicker questions. Full credit for clicker questions amounts to an extra 1% point to your overall grade. Note that this can easily make the difference between a borderline grade, so it is greatly to your benefit to participate in class!

Weekly Mastery Quizzes:

Every week of the semester except for Weeks 1 and 15 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. There are 13 of these and the lowest 3 are dropped. Each of the remaining 10 are each worth 2% of your final grade in the course. A list of topics will be provided for each quiz. Note that there is no Final Exam in this course! The last weekly quiz will occur the week before Finals week!

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, 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 3 quizzes, 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, "But it's been available on Canvas for almost a week!" Start early!

What To Do If You Are Struggling in The Course:

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 p.m. (see above). They are generally available a week before they are due. You must submit all of 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.

University Policies

Classroom Behavior

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail 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, political affiliation or political philosophy. For more information, see the policies on classroom behavior and the Student Conduct & Conflict Resolution policies.

Requirements for COVID-19

As a matter of public health and safety, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements and all public health orders in place to reduce the risk of spreading infectious disease. Students who fail to adhere to these requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct and Conflict Resolution. For more information, see the policy on classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the "Accommodation for Disabilities" statement on this syllabus.
CU Boulder currently requires masks in classrooms and laboratories regardless of vaccination status. This requirement is a precaution to supplement CU Boulder's COVID-19 vaccine requirement. Exemptions include individuals who cannot medically tolerate a face covering, as well as those who are hearing-impaired or otherwise disabled or who are communicating with someone who is hearing-impaired or otherwise disabled and where the ability to see the mouth is essential to communication. If you qualify for a mask-related accommodation, please follow the steps in the "Accommodation for Disabilities" statement on this syllabus. In addition, vaccinated instructional faculty who are engaged in an indoor instructional activity and are separated by at least 6 feet from the nearest person are exempt from wearing masks if they so choose.

If you feel ill and think you might have COVID-19, if you have tested positive for COVID-19, or if you are unvaccinated or partially vaccinated and have been in close contact with someone who has COVID-19, you should stay home and follow the further guidance of the Public Health Office (contacttracing@colorado.edu). If you are fully vaccinated and have been in close contact with someone who has COVID-19, you do not need to stay home; rather, you should self-monitor for symptoms and follow the further guidance of the Public Health Office (contacttracing@colorado.edu).

Accommodation for Disabilities

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.

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.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code academic integrity policy. Violations of the Honor Code may include, but are not limited to: plagiarism, 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. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found on the Honor Code website.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. The university will not tolerate acts of sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, or protected-class discrimination or harassment by or against members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options, and the support resources can be found on the OIEC website.

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of incidents of sexual misconduct, dating and domestic violence, stalking, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about their rights, support resources, and reporting options. To learn more about reporting and support options for a variety of concerns, visit Don't Ignore It.

Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance.

See the campus policy regarding religious observances for full details.