CONNECTICUT COLLEGE

COM110, 4 credits (CRN(s): 90007,90008,90012) **[version: com110-8.24.23]**

"To me programming is more than an important practical art. It is also a gigantic undertaking in the foundations of knowledge"

-Grace Hopper

Course Description

In this course we will create and implement solutions to problems via the art and science of computer programming. We will discuss the design of elegant algorithms, the writing of efficient and readable code, and the process of software development. Along the way, we will explore graphics and animation, string and text manipulation, simulation, object-oriented design, and much more.

Problem solving using computer programming is a fundamental skill that can be employed to enhance your ability to succeed in any discipline. Even more generally, it is a great way to expand and hone your critical and analytical thinking for creative, yet methodical, problem solving in all aspects of life.

The programming language we will use is called Python. Python is a versatile, yet straightforward language, and is used widely both in academic and practical/industry settings. We will be using Python to solve interesting problems in a wide variety of fields.

No prior programming experience is expected of students in this course. There will be plenty of resources and course staff to assist you. By the end of the first week, you will be writing simple computer programs and by the end of the semester you will create your own, unique, substantial final project.

Course Objectives

- Increase literacy and awareness of persistent and ubiquitous computing
- Utilize computer science concepts such as data types, functions, control structures and object-oriented design.
- Analyze generalized problems and develop Python3 programming language solutions.
- Design and implement a substantial project of your own applied to a field like linguistics, politics, art, music, economics, mathematics, geography, psychology, etc.

Course Information

Lectures: Tuesdays and Thursdays, 10:25-11:40am in Hale, Brown Auditorium
In case class needs to meet remotely:
https://conncoll-edu.zoom.us/j/6026985395

Labs: Fridays Section 1 at 9:30-11:30am or Section 2 at 1:15-3:15p, Shain PC LAB. In case class need to meet remotely:
https://conncoll-edu.zoom.us/j/6026985395

Labs will be run by the professor along with student TAs. Lab assignments must always be completed within each lab class, not before or after. If you miss a lab, you will not get credit for that lab, but you are still expected to complete it on your own time so that you don't fall behind. In special circumstances, a lab may be rescheduled or made up during another lab time or at a TA session. The lowest lab grade will be dropped.

Professor: Dr. Timothy Becker
email: tbecker@conncoll.edu
lab: https://informatics.digital.conncoll.edu
phone: 860-439-5139
office: New London Hall 208
hours: T, R 1-2:30p (signup here)

Please read the **Office Hours** section on **page 5** for more details.

TA sessions: Optional TA sessions are run by your TAs in New London Hall throughout the week on most evenings. See the TA session schedule for details. They are a great place to work on (or get help with) your reading assignments, HW exercises, programming assignments, etc.

Grading:

Written homework (one per week)	**10%**
Labs (10 total, lowest dropped)	**20%**
Programming (6 total)	**30%**
Quizzes (5 total, lowest dropped)	**10%**
Final Project	**20%**
Participation	**10%**

All assignments are submitted to and graded in Moodle:
Lect: https://moodle.conncoll.edu/course/view.php?id=6530
Lab1: https://moodle.conncoll.edu/course/view.php?id=6531
Lab2: https://moodle.conncoll.edu/course/view.php?id=6532

Course Materials

Course Webpages: see the Moodle links above under the grading section

Required Text(s): Python Programming: An Introduction to Computer Science by John Zelle, 3 ed. Franklin, Beedle & Associates. ISBN 978-1590282755

Software: Python3 and Jupyterlab web IDE (Mac and Windows should check out the free Anaconda distribution at: https://www.anaconda.com/)

Course Schedule

Will be updated periodically as needed (look at revision date at the top of page to the right)

Week/Topic	Reading (Zelle PP)	Assessment(s)
1 Intro, Basics, Numerics	CH1, CH2, CH3	HW1, Lab1
2 Sequences	CH5	HW2, Lab2, Quiz1
3 Functions	CH6	HW3, Lab3, Program1
4 Branching	CH7	HW4, Lab4, Quiz 2
5 Loops (Iteration 1)	CH8	HW5, Lab5, Program2
6 Designing Classes	CH10	HW6, Lab6
7 OOD	CH12	HW7, Lab7, Program3
8 Data Structures (tuple,set)	CH11	Quiz3, **[NO LAB]**
9 Data Structures (dict)	CH11	HW8, Lab8, Program4
10 Recursion (Iteration 2)	CH13	HW9, **[NO Thr]**, Lab9
11 Algorithms	CH13	Quiz4, HW10, **[NO LAB]**
12 Visualization		HW11, Lab10, Program5
13 Project Session 1		Project Proposal, Quiz5
14 Project Session 2,3		Project Prototype
15 Project Presentations		Project Presentation
Take Home Final	due last day of finals (12/18)	Project Reflection

Notes:
Week 8: No Class on T-10/17 (Conn Fall Break), No Lab on F-10/20 (Research Meeting)
Week 11: No Class on R-11/9, No Lab on F-11/10 (Research Conference CSHL:SCA)
Week 13: No Class on R-11/23, No Lab on F-11/24 (Thanksgiving Break)

Projects are meant fit to student interests and to apply the individual chapter sections of the course to a larger item of inquiry. They are group based (to encourage peer support, communication and problem solving) and make use of scaffolding pedagogy which means that the total project grade is based on the sub-assessments listed in the above table (Proposal, Prototype, Presentation, Reflection). There will be a separate project sheet that has detailed information in Moodle towards the middle half of the course to allow curious folks time to consider potential project ideas.

Course Policies:

Culture of Collaboration and Responsibility of Ownership:
In this class you are expected to work cooperatively. You are encouraged to discuss ideas and ask each other for help. Indeed, giving and asking for constructive input to/from fellow students is a part of the important learning experience. However, when a written response or computer code is required for a programming exercise, it should be your own original work and not the result of an outside source. The materials in this course are considered foundational and using an uncited source like stackoverflow or a problem solving system like ChatGPT is considered an honor code breach. You are responsible for the ownership of your work in this course and you may need to demonstrate how or why you arrived at a particular solution if your authorship is in question.

Written Homework:
Reasonably small homework exercises will be due at least once a week. They are written assignments that will allow you to reflect on what you've learned the previous class, or prepare you for what we will be learning in the next class. They may be typed or hand-written (drawings/diagrams are always encouraged too), and they must be turned in 15 minutes before the start of class as an image file or pdf uploaded to Moodle. They will be graded on completeness and effort rather than correctness. The lowest homework grade will be dropped. A "complete" homework exercise is one that demonstrates a complete effort. Your answer to the problem or question is only a byproduct of the assignment; you must in fact show your thought process in seeking an answer. It also means that if you don't arrive at an answer at all, but log/describe your thought process during your (sufficiently thorough) attempts at finding one, you will have demonstrated a complete effort.

Programming Assignments:
Sizable programming projects will be due roughly every two weeks. The TAs will test your program and write notes on the grading rubric about its functionality. The professor will then audit your code and grade each assignment using the rubric. You are encouraged to attend TA sessions to work on your assignments, get help and ideas, and to discuss functional or stylistic ways to improve your programs. Programming assignments will be penalized 10% for each day late.

Final Projects:
Each student will propose their own final project to be designed and implemented in the final weeks of the semester. The final project grade is comprised of several assessments which include a proposal, multiple project sessions, a presentation and a final reflection which follows the take-home exam policy and is due on the last day of finals.

Attendance:
Attendance is required for all lectures and labs. As mentioned above, to earn credit for a lab you must be in attendance for it. If you must miss a class due to illness or other special circumstances, please let me know. Constant exposure to the course materials will make mastery of the objectives easy, while missing class will make this process difficult.

Connecticut College Policies and Resources

Office Hours

Office hours provide students with additional opportunities to review or ask questions about the class discussions and assignments. Connecticut College faculty encourage students to go to office hours so they might learn about your interests, both inside and outside the classroom. In addition to talking about class material and assignments, you may find you share common interests, such as music, books, hobbies, and movies. If a professor knows your interest, they may inform you about campus programs and activities or other opportunities like fellowships and scholarships. Most importantly, a professor who knows their students writes better letters of recommendation. Successful students at Connecticut College make time to go to their professors' office hours. All Connecticut College faculty are required to have office hours on their syllabus and posted on their office door. If you cannot make your professor's scheduled office hours, contact your professor to set up an appointment.

Credit Hour Definition

A semester course is normally equivalent to four credit hours. Connecticut College complies with federal regulations defining the credit hour. For each credit hour awarded, a course will provide an average of at least one hour of classroom or direct faculty instruction (class meetings, labs, review sessions, field trips, office hours, film screenings, tutorials, training, rehearsals, etc.) and at least two hours of out-of-class work (homework, preparatory work, practice, rehearsals, etc.) per week.

The Connecticut College Honor Code

Academic integrity is of the utmost importance in maintaining the high standards of scholarship in our community. Academic dishonesty is considered to be a serious offense against the community and represents a significant breach of trust between the professor, the classmates, and the student. There are many forms of academic dishonesty including plagiarism, falsifying data, misrepresenting class attendance, submitting the same work in two courses without prior approval, unauthorized discussion or distribution of exams or assignments, and offering or receiving unauthorized aid on exams or graded assignments. Students violating the Honor Code may be referred to the college's Honor Council for resolution.

Title IX Statement

As a faculty member, I am deeply invested in the well-being of each student I teach. I am here to assist you with your work in this course. If you come to me with other non-course-related concerns, I will do my best to help. It is important for you to know that all faculty members are trained and required to report any incidents of gender-based discrimination, including discrimination based on gender identity, gender expression, and sexual orientation. This means that I cannot keep information confidential about sexual harassment, sexual assault, dating violence, domestic violence, stalking, or other forms of gender-based discrimination, and that I will report that information to the Title IX office, if it is shared with me. However, the Title IX office typically only acts on formal complaints, and in response to notice from me will reach out to you to offer support and resources, and offer you the opportunity to file a formal Title IX complaint, which is up to you. The Director of Sexual Violence Prevention and Advocacy and the SVPA Confidential Advocates can advise you confidentially as can Counseling Services and

any of the College chaplains. SVPA can also help you access other resources on campus and in the local community. You can reach the Confidential Advocates at SVPA@conncoll.edu or make an appointment with the Confidential Advocates at http://bit.ly/ConnCollSVPA. The sexual harassment, dating violence, domestic violence, stalking, and non-discrimination policies are in the Harassment and Nondiscrimination Policy, Including Sexual Harassment and Nondiscrimination Under Title IX which can be found on the College's website. There you will find the policies, definitions, procedures, and resources. If you need to report an incident or have any questions about the policy, you can contact 860-439-2624 or titleix@conncoll.edu. If you have any specific questions on Title IX policy email our Title IX Coordinator, Megan Monahan at mmonahan@conncoll.edu.

Academic Resource Center
The Academic Resource Center (ARC) offers services to support your academic work such as study skills workshops, time management, coaching and tutoring. Its offices are located on the second floor of Shain Library. Students can make appointments by clicking on this link: https://forms.gle/BQecmVdK8Bg1sv5P7.

The ARC is open to the community as a quiet study space at any time the library is open. Professional staff is there for appointments Monday – Friday, 8:30 – 5:00 (evenings are by appointment only). If faculty or students have any questions or concerns, they should contact Patricia Dallas (pdallas@conncoll.edu).

Writing Center
The Roth Writing Center provides one-to-one peer tutoring (free of charge) to help student writers of all abilities during all stages of the writing process. If you're a confident, experienced writer, our tutors can help you to push your ideas and polish your style; if you're a relatively inexperienced and not-so-confident writer, they can help you to work on grammar or organization or whatever you need. Working with a tutor gives you the opportunity to share your work-in-progress with an actual reader so that you can get useful feedback on that work *before* you have to turn it in for a final grade. You can make an appointment by using the Google Calendar link on the Writing Center's website at http://write.conncoll.edu/ or by emailing the Writing Center at writingcenter@conncoll.edu; a new calendar of appointments will become available by the second week of each semester.

Office of Student Accessibility Services
Connecticut College complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. If you have a documented disability and have been approved for academic accommodations, please have your Faculty Notification Letter emailed to me through the Student Accessibility online management system (AIM) and schedule a meeting during my office hours as early as possible in the semester so that we can discuss the logistics of your accommodations. If you are not approved for accommodations, but have a disability requiring academic accommodations, or have questions about applying for accommodations, please contact Student Accessibility Services at 860-439-5428 or sas@conncoll.edu.

Classroom Recording
With the exception of those granted accommodations through the Office of Student Accessibility Services, students are prohibited from audio, video, or photographic recording during class periods or out-of-class meetings with the instructor without explicit permission from the instructor. Recordings approved in this manner may not be shared in any form without permission of the instructor. Violations of this policy shall be considered an Honor Code violation.

Respecting Personal Pronouns and Identity
Everyone deserves to be referred to and addressed in accordance with their personal identity. As a faculty member, I am committed to ensuring my classroom affirms people of all gender expressions and gender identities. In this course, we will only use the name and pronouns of each individual's choosing. The repeated usage of incorrect names and/or pronouns are against Connecticut College policy and may constitute a Title IX policy violation as well as a violation of state and federal law. If you have any specific questions on Title IX policy email our Title IX Coordinator, Megan Monahan at mmonahan@conncoll.edu.

In the classroom, be assured that you will always be referred to by the name and pronouns you choose. If you go by a different name than your legal name, Connecticut College has a process to change your preferred name on most campus systems. If you want to learn more about this process go to conncoll.edu/equity-inclusion/preferred-name-faq/ or email GSP@conncoll.edu.

Students, faculty and staff are now able to choose and share their pronouns within the college community by using the Preferred Name/Pronouns link on the navigation menu in CamelWeb and the CC Mobile App. Your gender pronouns will appear in the internal directory located in CamelWeb and the CC Mobile App. If none are selected, or if "Not Applicable" is selected, no pronouns will display. Enrolled students' gender pronouns will also display in Moodle for instructors via the class participants page.

Pronouns are one way to affirm someone's gender identity, but they are not necessarily indicative of a person's gender identity. Commonly, they/them is a gender-inclusive pronoun used by a variety of identities. However, while some people use they/them, others may use pronouns like ze/zem, xi/xim, he/him, she/her, any combination of those and/or many others. They may even reject pronouns altogether and use their name in place of pronouns. Remember to ask for pronouns, listen, and then respect the gender identities of those around you by using the proper terminology. If you have any further questions or you want to learn more about gender & sexuality, please do not hesitate to contact the Director of Gender & Sexuality Programs at gsp@conncoll.edu.