College of Engineering and Mathematical Sciences
Computer Science

CS1210 / Introduction to Programming / 2025 Summer

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Instructor and teaching assistants

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Welcome to the course!

Description: Introduction to Programming teaches problem solving, and the problem solving process, using Python. Topics include types, variables, functions, branching, loops, flow of control, simple input/output, and basic data structures. Throughout the course, good programming style will be emphasized. The course assumes no prior programming experience. Satisfies Quantitative Reasoning (QR) and Quantitative and Data Literacy (QD).

Learning objectives: Throughout this course, you will

- learn the fundamentals of computer programming,
- begin writing idiomatic Python,
- develop critical thinking and problem-solving skills,
- think creatively to solve problems,
- express solutions clearly and accurately,
- learn to implement non-trivial programs in a high-level programming language, and
- develop programming maturity (confidence, willingness to experiment).

Texbook: Cafiero, C. (2023–2025) An Introduction to Programming and Computer Science with Python. ISBN: 979-8-9887092-0-6. Textbook is required but is made available to you in multiple formats:

- Hard copy is available through the UVM Bookstore for about $14.00 (USD).
- Free PDF is available via my website or through link in Brightspace.
- Chapter content is posted to Brightspace (this does not include frontmatter, index, and certain other content).

Online course: This is an online course. Instruction is provided by readings from the textbook, and supplemental readings and video demonstrations posted on Brightspace. While there are no regular class meetings, you are expected to keep up with course material. Covering a semester's worth of material in six weeks means that *the pace of this course will be brisk.* There will be fixed due dates for homework assignments . Quizzes and exams will take place within small windows of time (typically 2–3 days).

How to succeed: As noted, the pace of this course is brisk. It's important to pace yourself and not fall behind. You should be prepared to spend roughly 15 hours per week on this course—though this will vary from student to student. Familiarize yourself with the course schedule, and be sure you understand what is expected of you. Ideally, you should complete all readings for a week before watching instructional videos. You should complete readings and instructional videos before completing self-assessments provided on Brightspace. You should take quizzes and exams after completing self-assessments and revisiting materials as needed. Start homework early so you have time to absorb concepts, practice, and make revisions before submission due dates. Don't hesitate to ask questions (see *Instructor and teaching assistants*, above).

Practice is essential. Learning to write code is like learning to ride a bicycle. All the reading in the world won't give you the ability to ride a bicycle. It only comes with getting on, riding, and occasionally dusting yourself off and having another go at it. Accordingly, you should not rely on others or online resources or generative AI to produce work. *The only way to learn is to do it yourself*. You'll find this is more rewarding and more fun, despite struggles, challenges and setbacks.

Computer: For this course, you should have a reliable computer on which you can write, run, and debug code. Windows $\geq$ 11 and macOS $\geq$ 15 are supported. If you have a Linux machine, that's fine, but you're on your own for support.

Software: You will be writing programs in Python, and accordingly you should have a reasonably current version of Python installed on your computer (*e.g.*, version $\geq$ 3.10). Python source code is in plain-text format, and you may write and edit Python code with any plain-text editor (*e.g.*, Sublime or similar). However, it's helpful to use an integrated development environment (IDE). An IDE provides additional functionality not available with a plain-text editor (syntax highlighting, debugging, *etc*.). Recommended:

- **Thonny**, Python IDE for beginners: `https://thonny.org/`

Thonny includes a built-in package manager that will make things a little easier for you when we get to using Matplotlib. Installation instructions are available on Brightspace.

Python supplies its own IDE, called IDLE. You may use this if you wish. You may wish to try JetBrains PyCharm or Microsoft Visual Studio Code. These are more feature-rich IDEs, but can be overwhelming to new users. You're welcome to try either, but as far as support goes, you're on your own. PyCharm has a free "community" edition for educational purposes. See: `https://www.jetbrains.com/pycharm/download/` or `https://code.visualstudio.com/`. If you're in an engineering discipline you may wish to try Spyder IDE. See: `https://www.spyder-ide.org/`

Prior knowledge: This course assumes no prior knowledge of computer programming. However, we do assume you have working knowledge of the basics of arithmetic and elementary algebra. A high-school course in algebra should suffice. You should also know how to use your computer's operating system, be able to navigate your computer's file system, and be able to open, close, rename, and move files and directories (folders).

Important websites:

- Brightspace, for course materials and announcements: https://brightspace.uvm.edu.
- Gradescope, for submitting assignments and seeing grading feedback: https://www.gradescope.com/.
- Official Python Documentation: https://docs.python.org/3/. This is the definitive resource for Python documentation.

Correspondence: Please use email for electronic correspondence (and not MS Teams). As I teach multiple courses please indicate the course in which you are enrolled in the subject line. Please use your UVM email for all correspondence.

Weekly schedule of topics
(tentative and subject to change):

Week	Topic	Readings (ch/s)
1	Introductions; types and literals; variables, operators, and expressions; functions; modular arithmetic; comments and style	1–3, 4.1–4.7, 5.1, 6
2	Console I/O; f-strings; more on functions; imports and the `math` module; branching, flow control, and Boolean logic; program structure	5.2–5.7, 7, 8–9
3	Sequences: lists, tuples, and strings; mutability and immutability; loops and iteration	10, 11
4	The `random` module; games and simulations; File I/O; the `csv` module	12, 13
5	Statistics and the `statistics` module; introduction to Matplotlib; exception handling	14, 15
6	Dictionaries; structured data	16

Grading:

Weight	Assessment
18.0%	programming homework (6)
15.0%	metacognition essays (3)
30.0%	code review (3)
20.0%	quizzes (10)
17.0%	exams (3)
100.0%	TOTAL

Assignment of letter grades will be on a conventional scale. Any grade appeal (assignment, quiz, lab, exam, *etc.*) must be directed to your grader within one week of the grade being posted. If grading is done on Gradescope (*e.g.*, for homework), there's a *regrade request* feature which should be used for grade appeals.

Homework: Homework will consist of one to three short programs each week. Homework will be submitted via Gradescope (links will be provided in Brightspace). Homeworks are weighted at 3% each ($6 \times 3\% = 18\%$).

Metacognition essays: In alternate weeks, you will write a *brief* metacognition essay. See additional instructions, guidelines, and prompts posted on Brightspace. Each metacognition essay is weighted at 5% ($3 \times 5\% = 15\%$).

Code review: In weeks 2, 4, and 6, we'll have a brief code review conducted via MS Teams. These will be one-on-one sessions with the instructor to review your work, to test your comprehension of what you've written, and to make helpful suggestions for improvement. More details will be posted on Brightspace. Each code review is weighted at 10% ($3 \times 10\% = 30\%$).

Quizzes: There will be ten quizzes. Quizzes will be administered via Brightspace. Each quiz is weighted at 2% ($10 \times 2\% = 20\%$).

Exams: On Fridays, at the end of weeks 2, 4, and 6, there will be an online exam, administered via Brightspace. Exams are weighted at 5%, 5% and 7% (17%). (Note: Brightspace calls these quizzes—that's just the Brightspace way.)

Academic integrity: The Department of Computer Science enforces UVM's Code of Academic Integrity. Any suspected violation of this policy will be referred immediately to UVM's Center for Student Conduct (https://www.uvm.edu/sconduct). Sanctions for a violation may include a grade of XF in the course. Additional violations can result in dismissal from the university. In a word: *Don't*. All students should read and understand this policy. See: https://go.uvm.edu/cai.

Collaboration on quizzes and exams is strictly prohibited. Use of online services as a source of solutions is strictly prohibited. Using generative AI such as ChatGPT or Claude, or websites such as Chegg or Course Hero to complete coursework is a form of academic dishonesty. Work you submit for an individual grade must be your own. Any work not produced by you must be cited. For certain assignments, students may collaborate on homework (typically limited to teams of two). If you collaborate with another student on an assignment, be sure to indicate team members as specified. If you have any questions, ask!

Any attempt to tamper with or defeat any autograder is a form of academic dishonesty. This applies wherever autograders are in use, for example on Brightspace or Gradescope.

All code submitted by students is subject to code similarity review.

Exams, quizzes, homework assignments, answer keys and solutions, presentations or lecture notes, specifications and rubrics are copyright protected works, unless clearly and explicitly indicated otherwise. Any unauthorized copying or distribution of protected works is a violation of federal law and may result in disciplinary action. This includes submission of protected works as prompts to generative AI. Sharing of course materials without the specific, express approval of the instructor may be a violation of the University's Code of Academic Integrity and an act of academic dishonesty, which could result in disciplinary action. Violations will be handled under UVM's Intellectual Property Policy and Code of Academic Integrity, as appropriate. See: https://go.uvm.edu/ipp and https://go.uvm.edu/cai.

Assessment	Open book / open notes	Python	Collaboration	Generative AI	Online solution(s)
programming homework	yes	yes	yes (with citation)	no	no
metacognition essays	yes	n/a	no	no	no
code review	yes	no	no	no	no
quizzes	yes	yes	no	no	no
exams	yes	yes	no	no	no

Late policy / extensions: Each homework assignment has a specific due date / time. You may submit work up to 24 hours after the due date / time, however, late submissions will be penalized 20%. Submissions that are more than 24 hours late will not be accepted unless an extension has been granted. We will consider reasonable requests for extensions when extenuating circumstances arise. (It can't hurt to ask.) However, extensions will not be granted if the request for extension is made within 24 hours of the time an assignment is due, except in the most extraordinary circumstances. So if you wish to request an extension, *do so early*! If an extension is granted, you must submit your work by the agreed-upon extension date.

Student course evaluations: Students are warmly encouraged to complete an evaluation of the course at its conclusion. Evaluations are anonymous and confidential, and the information gained, including constructive criticisms, will be used to improve the course.

The secret word is "fizzle."

Accommodations: In keeping with UVM policy, if you have a documented disability and are interested in utilizing ADA accommodations, you should contact Student Accessibility Services (SAS), the office of Disability Services on campus for students. SAS works with students and faculty in an interactive process to explore reasonable and appropriate accommodations, which are communicated to faculty in an accommodation letter.

Contact SAS: A170 Living/Learning Center; +1 802 656 7753; access@uvm.edu; or visit https://www.uvm.edu/access.

Participation: Even though this is an online course, you are expected to be an active participant. The more engaged you are, the more you will learn—and the more fun you'll have. This includes reading assigned materials, watching instructional videos, and the like. Since we won't have regular face-to-face interactions in class, it's all the more important to ask questions—either in drop-in office hours or on an *ad hoc* basis. When it comes to asking questions, *please don't be shy!* There's no such thing as a "dumb" question (I earnestly believe this). If there's something you don't understand—*ask*! Asking questions helps you understand the material presented in the course. Also, when you ask a question you help me do a better job of explaining. If I explain something, and you still don't quite grasp it, chances are that I didn't do as good a job of explaining as I might have.

Defects / bonus points: As you might expect, we will deduct points on assignments, quizzes, or exams where you've made an error. It's only fair that instructors should be held to a similar standard. Accordingly, bonus points are awarded for reporting and correcting defects in instructor-written course materials.

- 1.0 point: Material defect. This includes any error whatsoever in code or solutions, or any error in writing that changes materially the sense of what is written. This also includes incorrect due dates for posted assessments.
- Up to 0.5 point: Minor defect. This includes typos, misspellings, or minor errors which do not affect materially the readability or sense of what is written. Determination of points for minor defects is at the instructor's sole discretion.

Due to the unfortunate behavior of some students who have favored the practice of "bonus point mining" over proper study, no student may earn more than three bonus points in this course.

Due to the fact that we are still writing and revising autograders, autograder defects are not fair game for defect bonus points (but by all means, please report, and perhaps we will award a discretionary point here and there).

Bonus points for any given defect are only awarded to the first student (across all sections) who correctly identifies the error *and provides a valid correction*. Bonus points are not available for any materials which are clearly marked as drafts. Bonus points are added to your final grade before assigning letter grades—a point or two may make a big difference. Happy hunting.

Diversity, equity, and inclusion: UVM is a place where you should be treated with respect and kindness. We welcome individuals of all ages, backgrounds, beliefs, interests, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability, and other visible and non-visible differences. All students are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the community. If you ever feel that you have been unfairly treated or judged by an instructor, a mentor, another student, or another member of the community, please let someone know. Your instructors and advisors in the CEMS Office of Student Services are available to discuss any concerns, or you can report an incident of bias through the bias report program (https://go.uvm.edu/brp).

Promoting health and safety: If you are concerned about a UVM community member or are concerned about a specific event, we encourage you to contact the Dean of Students Office (+1 802 656 3380). If you would like to remain anonymous, you can report your concerns online by visiting the Dean of Students website at https://www.uvm.edu/deanofstudents.

Wellbeing resources:

- Center for Health and Wellbeing: https://www.uvm.edu/health/services
- Counseling and Psychiatry Services (CAPS): +1 802 656 3340
- Food Insecurity Assistance: https://www.uvm.edu/health/food-insecurity-uvm

Student advocacy: https://www.uvm.edu/deanofstudents/student_advocacy

Your identity at UVM: Students at UVM can specify the first name and pronoun they want used on campus. For information on how to update your preferred name and personal pronouns as well as keeping your legal name private, and UVM policy on lived name and pronouns, see: https://go.uvm.edu/lnpr.

Religious holidays: Students have the right to practice the religion of their choice. In order to receive extensions or excused absences, you should submit via email your documented religious holiday schedule within the first week of the course. Reasonable extensions will be granted where assignment deadlines conflict with religious holidays.

Student athletes: In order to receive extensions or excused absences, you should submit via email appropriate documentation as soon as possible, preferably within the first week of the course. Reasonable extensions will be granted where assignment deadlines conflict with team events or team travel.

Statement on alcohol and other drugs: We want you to get the most you can out of this course. Therefore, you are expected to familiarize yourself and abide by the University's policies with regard to alcohol, cannabis, tobacco, and other drug use. See: https://go.uvm.edu/actd. Please do everything you can to optimize your learning and to participate fully in this course.

Class format changes: The University of Vermont reserves the right to make changes in the course offerings, mode of delivery, degree requirements, charges, regulations, and procedures contained herein as educational, financial, and health, safety, and welfare considerations require, or as necessary to be compliant with governmental, accreditation, or public health directives.

Changes to this document: This document is subject to change. Any such change will be communicated via an announcement on Brightspace. The latest version of the syllabus will always be available on Brightspace.