

COMP112 Introduction to Computer Science Winter 2024 Syllabus

Instructor

Prof. Kelly M. Thayer

Office: Hall-Atwater 37

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Office hours:

Please Refer to Course Calendar

Zoom Contact Information:

COMP112 Meeting ID: 586 776 0570

Course Mode: Online Synchronous

Schedule: M-F morning session 9AM-11AM, afternoon session 12PM – 2PM

Please refer to Course Calendar

Syllabus subject to change

GENERAL INFORMATION

Text: Think Python: How to Think Like a Computer Scientist. Version 2.0.17 Allen Downey. Green Tea Press: Needham, MA, 2012.

<http://www.greenteapress.com/thinkpython/thinkpython.pdf> The online version is freely available. Alternately, you may purchase a hard copy. It is available at R. J. Julia Bookstore, Amazon.com, etc.

Course Description: Welcome Introduction to Computer Science winter session course. The content of this computer science course focuses on learning how to think as a computer scientist through the use of the Python programming language. We will operate on the assumption that students have no prior experience with programming.

The goals of the course will be to develop algorithmic thinking, problem solving, and quantitative skills within the context of learning a modern programming language applicable to studies not only in computer science but also to various areas of academic and industrial interest. The course will cover essential mechanics of programming, many of which are common to all programming languages. You will also learn how to create graphical images with Python using the built in module. Students will be invited to apply the skills learned in the course to completing the culminating final project related to their specific interests. This course typically draws students from across the university, and the projects often reflect this diversity.

Time Expectations: Because this is a condensed course, it is important that you begin on the work before the course begins. At a minimum students are expected to complete reading three chapters, and turn in the first homework assignment (based on the readings) by the first class. Students will be expected to keep up with the readings throughout the class. It may also be

expected that there will be daily homework assignments to solidify the contents from the course. Students will also be expected to be working on their projects continually after the proposals have been made, about half way. Additionally, it is important to note the two quizzes on Mondays; students will need to make use of weekend hours to adequately prepare. Generally one might expect to spend about 10 hours per day inclusive of classroom time on the course on weekdays, to be studying for quizzes on the weekend, and to shift attention to project based learning at the end of the course to complete the culminating final project in lieu of a final exam.

Moodle Web Site: A course web site will established through Moodle, and it will continue to be developed throughout the course. This will be the location of your pre-course assignments. (Alternately a Google Drive will be set up if Moodle will not be available ahead of the course.) This serves as a central location where assignments, handouts, and announcements will be posted. Computer based assignments in the problem sets will be turned in on the Moodle site. Please log in to Moodle and follow the links to your respective section of COMP112. The login to Moodle may be found in the WesPortal via the quick links or under Academics > Moodle.

GRADING

Your course grade is comprised of several components (described below) as follows:

- 40% Midterm
- 10% Labs & Quiz from Part I (if any)
- 10% Homework Problems
- 40% Final Project

Quizzes: A quiz covering several chapters will be administered. The quiz was authored by Prof. Lipton and will cover material through Lists. It is open book and will be answered by writing a Python script. It is based on content from the lectures, problem sets, readings, and lab. Please refer to the course calendar for the dates. Contact the instructor as soon as possible if a conflict arises. If you have an academic accommodation plan involving the testing environment in your letter from Disability Resources, please contact your instructor at the beginning of the session to make suitable arrangements. Any quizzes administered from the first half of the exam will be incorporated into the Lab Grade.

Laboratory Sessions: We will practice the concepts learned in the lectures during the laboratory component of the course, which will be in the afternoons. The purpose of the computer labs is to provide you with a hands-on approach to learning which supplements the lecture content. Additionally, this will provide you with valuable computational skills useful for your future career, as well as serve as a basis on which you can further your computational studies. The computer exercises will provide you with the skill set needed to complete the course project (see below). These are meant to be a learning exercise, and frequently will be carried out in pairs. You will be provided with instructions each week. There are no formal lab reports required, but you will submit the responses to the exercises on Moodle. Thus, it is advisable to look over the

problem sets and labs prior to arriving at lab to get the maximum benefit of that time. It is an excellent opportunity to get immediate feedback on any questions you have.

Homework Problems: Working problems is essential to understanding the content of this course. Questions covering the topic of the lecture will be assigned; please refer to the course calendar for the scheduling details. You will complete the problems at home. You are welcome to discuss the problems with your classmates, instructors, online resources, etc. but the responses you turn in must reflect content covered in this course and your understanding of the material. Assignments should be submitted on Moodle. Please respond to homework and lab questions using Python methods presented in the lecture and lab. Many Python methods developed as secondary code exists and may be incorporated in the project, but the purpose of the class is to learn programming with the basic building blocks.

Late homework assignments will not be accepted except in documentable cases such as a medical emergency or illness. As a condensed course, staying on top of the material is of utmost importance. If you have a planned absence for a sports or other academic commitment, it is your responsibility to turn in your homework on time. Keeping with this schedule will allow us to return timely and detailed feedback. The problem sets are meant to help you keep pace and to provide you with regular feedback on your progress in the course; this will aid you in focusing your studies and identifying when you may need to seek further assistance.

Final Project: In lieu of a comprehensive final examination, you will submit a final project which will be due on January 19, 2022 at 12:00 Noon EST. Please refer to the course calendar for course dates. You will propose a topic of interest or select a suggested topic to write a proposal in which you will write three goals for the project that will demonstrate your mastery of Python. The instructor will provide detailed feedback and work with you as you develop your program. Preliminary results will be due mid-course (refer to course calendar), which will entail attempting to complete two of the three goals. The instructor will again provide feedback and be available for consult at the office hours. The completed code must be posted by the deadline. Students are also strongly encouraged to meet with me to discuss their project and demonstrate running it. Please note that late final projects will not be accepted because of the very short turnaround time between the end of finals and when we must turn in your grades. If a project is not turned in on time, a grade will be assigned on the basis of the most recent work viewed at the check-ins.

COURSE POLICIES

Late and/or Missed Assignments: Late problem sets will not be accepted and missed laboratory sessions will not receive credit. If you are requesting extra time due to illness or emergency, please do so in a timely manner.

Quizzes: Please make every effort to take your quizzes on time. Make up work will be permitted only for serious issues such as illness or emergency. The instructor reserves the right to request documentation such as a doctor's note.

Final Project: A final project is required for the class regardless of the grading mode. The final project must be turned in on the due date to ensure that it will be able to be graded prior to the due date of final grades to the registrar's office. Please plan to work on it throughout the second half of the course. If you have not turned in your completed project by the due date, by default I will grade you on the basis of the most recent update you have turned in. Late projects will not be accepted.

Electronic Device Usage: Cell phones and laptops can aid the learning process, but also can be a distraction for your classmates. Therefore, during lectures and labs, these devices should only be in use for on-task activities.

COVID-19 Health and Safety Protocols: This course will be delivered in the remote format. There are no COVID risks associated with taking the course.

Extended absence or emergency: In the case of an extended illness or emergency, you can contact your class dean, who can forward a notice of approved absence to all of your instructors at once, alleviating you of the responsibility to explain the situation to each instructor individually. Please refer to the student affairs web site for information on the class deans. <https://www.wesleyan.edu/studentaffairs/about/classdeans.html>

Diversity and Inclusion: I am committed to welcoming every student into my class and maintaining an environment that embraces our differences as strengths. In response to recent political activities and campus forums, I acknowledge that we may unintentionally or unknowingly exclude students. To begin taking steps towards a more diverse and inclusive classroom, I invite you to engage in constructive dialogue if you have any concerns you wish to call to my attention. I am a cosigner of Wesleyan's NSM Faculty Pledge to Promote and Support Anti-Racist Practices Across the Division and as such have made a public declaration of my values. Some of the ways this will be borne out in our class include:

- Opportunities for all students to speak and be heard. No question is too simple. We respect the voices of all participants.
- Highlighting the voices of the underrepresented: we will feature biographies of diverse contributors to computer science and technology throughout the course.
- Selecting course assistants from a diverse pool representative of the students who have taken the course

- Explaining the concepts from the fundamentals up, to increase accessibility of the material regardless of prior training
- Offering office hours on several days and at a variety of times and expand the opportunities to get help, ask questions, and interacting one on one with the professor.
- Implement a variety of teaching strategies. The course material is presented visually in the readings for the course, orally in the lectures, and tactilely through the laboratory exercises and final project.
- Evaluate students through diverse modalities. Not only are students evaluated by written materials, but also on the basis of effort in labs, and ability to integrate knowledge in real world applications in the final project. This affords students to shine at what they do best in a variety of ways.
- Options on exams and quizzes – in order for students to capitalize on their strengths, exams and quizzes often feature several questions of which students may select the ones about which they feel most confident.
- Removing economic barriers – a freely available online textbook was chosen so that there are no added costs for taking the course. All course materials are free.

Loaner Laptop program: To ensure that our course is accessible to everyone regardless of economic status, the University has a limited number of laptops available to check out and loan on a semester basis. Please refer to the following web site to learn more and to apply.

https://wesleyanedu.service-now.com/sp?id=offering&sys_id=094409751bb128d01807da49cc4bcb9d

Religious Observance: I support Wesleyan’s policy with regard to absence due to religious holidays. Religious observances require 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 assignments/attendance.

If you have a conflict due to observance of a religious holiday, please alert the instructor in advance so that a plan for makeup can be arranged. Questions regarding religious holidays may be directed to the University chaplains <https://www.wesleyan.edu/orsl/meetchaplains.html> and/or to the Class Deans <https://www.wesleyan.edu/studentaffairs/about/classdeans.html>.

Academic Honesty and Honor Code: All students of Wesleyan University are responsible for knowing and adhering to the Honor Code of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. Copying all or part of the work of others and claiming it as yours or allowing someone else to copy your work and claim it as theirs is a violation of the Honor Code. All incidents of academic misconduct shall be reported to the Honor Code Council – Office of Student Affairs. Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Please refer to the Office of Student Affairs for additional information.

<https://www.wesleyan.edu/studentaffairs/>

Academic Accommodations: I am committed to supporting the Americans with Disabilities Act of 1990 and carrying out the mission of Disabilities Resources to create an accessible and inclusive learning environment where disability is recognized as an aspect of diversity. Wesleyan University is committed to ensuring that all qualified students with disabilities are afforded an equal opportunity to participate in, and benefit from, its programs and services. Students with disabilities are entitled to request reasonable accommodations and/or modifications in their classes at the beginning of each semester. To receive accommodations, a student must have a disability as defined by the ADA.

If you have a disability, or think that you might have a disability, please contact Accessibility Services in order to arrange an appointment to discuss your needs and the process for requesting accommodations. Accessibility Services is located in North College, rooms 021/022, or can be reached by email (accessibility@wesleyan.edu) or phone (860-685-5581).

Since accommodations may require early planning and generally are not provided retroactively, please contact Accessibility Services as soon as possible. If you have an accommodation letter, please present this to the instructor at the beginning of the course. You are encouraged to visit office hours or to make an appointment to discuss your accommodation letter. If your accommodation involves extra time or a modified testing environment for the exam, please be sure to confer with the instructor in advance to make suitable arrangements.

Respectful Classroom Environment: Students and faculty both have responsibility for maintaining an appropriate learning environment. 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 differences of race, color, culture, religion, creed, politics, veteran status, sexual orientation, gender, gender identity and gender expression, age, ability, and nationality. For more information, see the policies on the student code found in the Student Handbook linked above.

Class rosters are provided to the instructor with the student's legal name. We are happy to address you by your preferred name and/or use preferred pronouns. Please advise your instructors of this preference early in the semester so that we may make appropriate notes regarding your preference. You may choose to indicate this information in the Survey handed out in the first week of classes.

Discrimination and Harassment. Wesleyan University is committed to maintaining a positive learning, working, and living environment. Wesleyan will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this Wesleyan policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have experienced discrimination should contact the Office for Equity and Inclusion at 860-685-4771. The responsibility of the University Members section of the Handbook contains additional information.

*I am looking forward to walking with you on this journey to learn how to program in Python!
Let's have a great Winter Session!*

| Course Calendar COMP112 WINTER 2024 | | | | | |
|--|----------|----------------------------|---|--|---|
| COMP112Z-02 W22 Introduction to Computer Programming | | | | | |
| Day | Date | Morning Lecture 9-11AM | Homework | Afternoon Lab 12-2PM | |
| WEEK 1 | 0 | (winter break preparation) | readings: Chapters 1-3 | HW 1 assigned Install Python on Laptops, Lab 0 Hello World exercise Lab1. Algorithmic Thinking | |
| | 1 | 2024-01-09 | Expressions, Variables, Programs Ch. 2 Variables, Expressions, and Statements | Prep assignments due HW2 assigned Lab 2. Expressions, Variables, and Programs | |
| | 2 | 2024-01-10 | Functions Ch. 3 Functions | HW2 due HW3 assigned Lab 3. Functions | |
| | 3 | 2024-01-11 | Flow Control If While Ch. 5.3-5.7, Ch. 7.3-7.5 | HW3 due HW4 assigned Lab 4. Flow Control If While Rock Paper Scissors | |
| | 4 | 2024-01-12 | String Processing with Flow Control Ch. 8 Strings | HW4 due HW5 assigned Lab 5. String Processing with Flow Control | |
| | Week end | | | | |
| | WEEK 2 | 5 | 2024-01-15 | Quiz I | Project Development Workshop |
| 6 | | 2024-01-16 | Lists Ch. 10 Lists | Proposal HW5 due HW6 assigned Lab 7. Lists | |
| 7 | | 2024-01-17 | Dictionaries Ch. 11 Dictionaries | HW6 due HW7 assigned Lab 8. Dictionaries | |
| 8 | | 2024-01-18 | File Input and Output Ch. 14 files | HW7 due HW8 assigned Lab 9. File Input and Output | |
| 9 | | 2024-01-19 | Classes, Objects, Methods (OOP) Ch. 15, 16, 17 | HW8 due HW9 assigned Lab 10. Classes & Objects, Methods | |
| Week end | | | | | |
| WEEK 3 | | 10 | 2024-01-22 | Quiz II | (working on projects) Lab 11. Project Workshop |
| | 11 | 2024-01-23 | Project Updates | HW 9 due | |
| | 12 | 2024-01-24 | READING DAY 9-AM-1PM office hrs | | |
| | 13 | 2024-01-25 | FINAL PROJECT DUE 12:00 NOON EST | | |
| | 14 | 2024-01-26 | | | |
| | Week end | | | | |
| | WEEK 4 | 15 | | | |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | SPRING SEMESTER BEGINS | | |
| 19 | | | | | |
| Week end | | | | | |
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Readings refer to *Think Python* 2nd ed. By Allen Downey. Subject to change.