CPSC110 Introduction to Computer Science
Fall 2022

Instructor: Dr. Jennifer Polack **Office**: don't really have one **Office Hours**: MW Monroe Hall 112 10-12pm TR 9:00-9:30 Jepson 125	**Email: Either use canvas embedded email or** jenniferpolack@gmail.com **Phone**: 540-654-1318 (prefer email)

Course Description

Chances are you use a computer every day for Instagram, email, online shopping, and countless other activities. Even the non-computer-oriented activities of your day are in some way affected by a computer. Think about your cell phone, the card reader at your dorm, the cardio machine that you use in the gym, the GPS in your car. Computers are with us everywhere; so one goal of this course is to make you more familiar with how they work, what they can do, and how we can use them to do work for us.

At its heart, computer science is geared toward solving problems by using the computer as a tool. Computers (at least today) are our minions, designed to do jobs for us. But the people who need the jobs done and the people who write the software to do the jobs are usually different. What issues are involved in properly describing the problems a computer program is to solve? How do you know that you're building "the right thing" and building "the thing right?" Where do requirements come from? We'll be considering all of these questions and more during the semester.

A big part of what computer scientists do is create plans. A computer program is really nothing more than a very formal and detailed set of plans presented in a language that a computer can understand. An algorithm, or plan for carrying out a task, exists on a higher, more abstract level than the program itself. The first step in writing good software is not to write the program itself, but rather to think carefully about the problem, identify a strategy for a solution, and to precisely formulate the steps required.

In order for a program to actually do anything, of course, it has to be written in a computer programming language and executed on a real machine. In this class, we will writing software using a popular programming language called Python.

Catalog Description

This course provides a foundation in computer science for a student who does not have prior programming experience. It provides sufficient support to permit a student to continue in the major program. Topics include an introduction to the algorithm and program development process using a high-level structured programming language and the department's computing facilities. Supervised hands-on experience provided. May not be taken for graded credit after passing any Computer Science course numbered 220 or higher.

Course Goals and Objectives

The goals of this course are:

- To introduce problem solving methods and algorithm development as appropriate to computer programming.
- Gain a conceptual understanding of computers, computing, and issues with technology through breadth-first topics.
- Develop skills in algorithmic problem-solving, expressed in a programming language.
- Represent and manipulate information in a program that executes on a computer.

General Education Objectives

This course counts as one course toward the two required Quantitative Reasoning courses required in the General Education curriculum at UMW. All courses in this category carry the following course goals:

- Students will demonstrate an ability to interpret quantitative/symbolic information.
- Students will have the ability to convert relevant information into various mathematical/analytical forms (e.g., equations, graphs, diagrams, tables, words).
- Students will be able to apply analytical techniques or rules to solve problems in a variety of contexts.
- Students will gain an appreciation for how analytical techniques or rules are used to address real-world problems across multiple disciplines.

Required Materials

Introduction to Computer Science: http://ianfinlayson.net/exploring-cs/

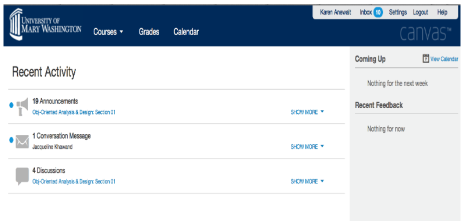
ZyBooks: Log into canvas and go to homework 1 that will connect you with the book for purchase

1. Click on your zyBooks link in your learning management system (Do not go to the zyBooks website and create a new account)
2. Subscribe

The text will be used for assigned reading and homework assignments.

The software that we will be using to create our programs is called IDLE. It's an integrated development environment for the Python language. You can download the software for free here: https://www.python.org/downloads/

Printed class notes and activities are distributed at each class meeting. A mechanism for storing and organizing class materials (simple folder with prongs or a basic 3-ring binder) is highly recommended. Put about 10 sheets of loose leaf paper in there too so you have some scratch paper (just in case).



19 Announcements
Obj-Oriented Analysis & Design: Section 01

1 Conversation Message
Jacqueline Khawand

4 Discussions
Obj-Oriented Analysis & Design: Section 01

Nothing for the next week

Nothing for now

Additional course information, handouts, and assignments will be available on Canvas.

You will need to have access to a computer and the Internet to access and complete assignments. If you don't own a laptop or your computer is ever broken, the computer lab in Trinkle B12 is available for your use 24 hours a day, 7 days per week and includes all required software for the course.

Class Participation and Responsibilities

Ask questions at any time in this course! There are absolutely no “stupid” questions in this class. I don’t expect you to be an expert at programming or using Python. Your job is to try hard to learn and part of that process involves asking questions. If you ever feel belittled by me or anyone else in the course, please let me know so I can make it right.

This class is interactive. Be prepared to answer questions and participate during class. Come to class prepared to join in the activities and take good notes.

I recommend against using a laptop during most class meetings. This is because in my experience, students tend to fall victim to the distracting goodies on their laptops rather than using them to take notes and test out code. However, I recognize that some people can record more effective notes through typing rather than handwriting. Try taking notes on a few days using the provided handouts before you opt for an electronic solution. Lab days will be announced in advance so that (if you want to) you can bring you’re a laptop on those dates.

Don’t skip class! This is seriously one of the biggest keys to succeeding in this course (and really any course). I work hard to make class interesting and fun. If you skip, you’ll miss out on important stuff and you’ll fall behind. All the material in this course builds on previously presented material, so if you miss a day, it’ll be hard to catch up.

You are responsible for checking your email **DAILY** for updates or modifications to assignments, schedules, lectures, etc. I use Canvas to send announcements. Sometimes the Canvas system is slow to distribute the messages, so checking the homepage of the course daily is a good idea. It’s your responsibility to edit your profile in Canvas so that messages are sent to your preferred contact method.

Overview of the Course

The up-to-date schedule of course topics and assignments is posted on Canvas. A broad outline of the course is shown in the tentative schedule below.

The online book, An Introduction with Python, http://ianfinlayson.net/exploring-cs/?page=exploring-cs

Week 1: Introduction to Python (Chapter 2, Chapter 3)
Week 2: Variable and Expressions (Chapter 4)
Week 3: Branching (Chapter 5)
Week 4: Exam 1(Thursday), Functions (Chapter 10)
Week 5: Functions
Week 6: Loops (Chapter 6)
Week 7: Exam 2, Loops
Week 8: Spring Break
Week 9: Strings(Chapter 4)
Week 10: Exam 3, Files
Week 11: List (Chapter 10)
Week 12: List
Week 13: Exam 4, List
Week 14: Searching and Sorting
Week 15: Searching and Sorting
Final: Tuesday April 26 8:30 – 11am

Disabilities

The Office of Disability Resources has been designated by the University of Mary Washington as the primary office to guide, counsel, and assist students with disabilities. If you have a disability that may affect your participation in this course, please contact your instructor as soon as possible to discuss your approved accommodations. I will hold any information you share with me in strictest confidence unless you give me permission to do otherwise.

If you have not made contact with the Office of Disability Resources and have accommodation needs, I will be happy to help you contact them. The office will require appropriate documentation of a disability.

Additionally, if you have any academic related issues that I should be aware of, regardless of whether they're specifically on-file somewhere on campus, please let me know.

Assignments

All assignments are posted on Canvas and/or zyBooks. Assignments are typically posted at about a week before they are due.

Reading

Reading will be assigned from our class textbook every class period. We're going to jump around in the textbook a lot.

Homework

- Written homework will be assigned and graded each day.
- Homework might feel like "busy work," but is actually carefully designed to provide additional reinforcement of important course topics. Research shows that repetition enhances understanding and memory!
- You are free to discuss homework problems with Dr Polack and others in the class, however you must write/type your own solutions.
- Late homework will not be accepted.

Labs

- Labs are small, guided programming assignments that will be started during class time.
- During scheduled lab days, you can work at your own pace on the assignment and ask questions, as you need to.
- By completing the labs, you get hands-on practice with all the course topics.
- You can discuss questions related to labs with Dr Polack, anyone else in CPSC 110, or the department lab aides BUT be sure that you understand all of the code before you type it. Don't copy files or code snippets from others.
- If you don't finish the assignment during the class period, you'll have the opportunity to finish it before the next class meeting.
- Late labs will not be accepted for credit.

Projects

- Projects are independently created programs completed outside of class time. They're usually a bit longer than lab assignments.
- Projects are your opportunity to show off your mastery of course concepts.
- You must complete projects independently without assistance from students in CPSC 110 or lab aides.
- If you have questions while completing your projects, direct your questions to Dr Polack in person, via email, or Canvas message.

- Projects will be graded on a scale of 1-100. A grading rubric will be distributed for each project so that you know how your software will be evaluated.
- Late projects will not be accepted.

Examinations

We're going to celebrate our learning at several points throughout the semester.

Tests

- We'll have 5 tests during the semester. Each will cover about 2 chapters.
- Exams are on the last day of each week
- All tests will be completed independently and are closed book, closed notes, and closed Internet.

Grading

Assignments will be weighted as follows in your final course grade.

Homework:	10% (about 1% each)
Labs:	10% (about 2% each)
Projects:	30% (8% each)
In class exams:	50% (10% each)

You can always get an up-to-date picture of your course grade by checking Canvas.

Final letter grades will be determined according to the following scale and the course policy below

A 93-100%	B+ 87-89%	C+ 77-79%	D+ 67-69%
A- 90-92%	B 83-86%	C 73-76%	D 60-66%
	B- 80-82%	C- 70-72%	F below 60%

Course policy:

To receive a grade of C or above, you must:

- have a 60% or higher average on the exams (average of the two in-class exams and final).
- AND have a 60% or higher average on all projects.

If either of these requirements is not met, you will earn a grade no higher than a C-.

Mid-semester Grades

The University provides the opportunity to provide grading feedback midway through the semester. A student will receive a mid-semester unsatisfactory (U) grade if he/she has a 65% or below overall average, 65% or below on exams or quizzes, or a 65% or below on programming projects. Any student receiving a U in this course should meet with the instructor to develop a performance improvement plan.

The Honor Code and CPSC 110

Writing a computer program is a creative endeavor similar to writing a paper. Plagiarism of code in a program is an honor code violation just like plagiarism of words in a paper.

For any assignment that you submit, be prepared to explain how the program works or how you arrived at your answer if asked to do so. This ensures that you only turn in only the items that you fully understand in your projects, quizzes, and tests.

All CPSC programs submitted for class assignments may be subjected to automated plagiarism tools such as Moss.

The Honor Code & Homework and Labs

You may collaborate freely with other students on written homework as well as lab assignments, however you must write (or type) up solutions independently. This means that it's fine to ask another 110 student or a lab aide about a particular aspect of a lab/homework, but you cannot share code or portions of code electronically.

The Honor Code & Programming Projects

The three individual programming assignments must be completed individually. Do not ask others (live or remotely) for assistance with your individual assignments or work with others on these assignments.

- You can not copy code from another student. Copying includes copying the idea while modifying such things as variable names, method names, spacing, etc.

- You can not provide your code to another student for the purposes of copying either explicitly or by copying and modifying such things as variable names, method names, spacing, etc.

- You can not copy code from any Internet site and include it in your program without citing the source of the code in a comment within your program. Example:

```
//code for using regular expressions on lines 65-85 was copied from
// https://wiki.python.org/moin/SimplePrograms
```

All project assignments will be submitted with an electronically signed UMW honor code pledge. This pledge acknowledges that you, alone, have created the code.

The Honor Code & Exams and Quizzes

Exams and quizzes must be completed individually, without consulting other students, written sources (notes and books), and electronic sources (your phone, the Internet, etc.).

All exams and quizzes will be submitted with a handwritten, signed UMW honor code pledge. This pledge acknowledges that you have not given or received assistance while completing the assignment.

If you have any questions or concerns about how the Honor Code applies to this course, please contact Dr Polack at any time.

Title IX Statement University of Mary Washington faculty are committed to supporting students and upholding the University's Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence. Under Title IX and this Policy, discrimination based upon sex or gender is prohibited. If you experience an incident of sex or gender based discrimination, we encourage you to report it. While you may talk to me, understand that as a "Responsible Employee" of the University, I MUST report to UMW's Title IX Coordinator what you share. If you wish to speak to someone confidentially, please contact the below confidential resources. They can connect you with support services and help you explore your options. You may also seek assistance from UMW's Title IX Coordinator. Please visit http://diversity.umw.edu/title-ix/ to view UMW's Policy on Sexual and Gender Based Harassment and Other Forms of Interpersonal Violence and to find further information on support and resources. Resources Confidential Resources On-Campus Stefanie Lucas-Waverly, M.S. Talley Center for Counselling Services Title IX Coordinator Lee Hall 106, 540-654-1053 Office of Title IX Fairfax House Student Health Center 540-654-5656 Lee Hall 112, 540-654-1040 slucaswa@umw.edu Crystal Rawls Off-Campus Title IX Deputy for Students Empowerhouse Assistant Director of Student Activities 24-hr hotline: 540-373-9373 540-654-1801 crawls@umw.edu Rappahannock Council Against Sexual Assault (RCASA) 24-hr hotline: 540-371-1666

Classroom activities in this course may be recorded by students enrolled in the course for the personal, educational use of that student or for all students presently enrolled in the class only, and may not be further copied, distributed, published or otherwise used for any other purpose without the express written consent of the course instructor. All students are advised that classroom activities may be taped by students for this purpose. Distribution or sale of class recordings is prohibited without the written permission of the instructor and other students who are recorded. Distribution without permission is a violation of copyright law. This policy is consistent with UMW's Policy on Recording Class and Distribution of Course Materials.