CSC 1100 – Introduction to Computing

Spring 2022

Catalog description

> *"An introduction to the art and science of computer programming for the student without previous programming experience. Topics covered include the historical development of computing, the basic operating principles of computers, and an introduction to problem solving using one or more high-level computing languages, such as Python."*

Intent

Our assumption is that this may be the one and only CS course you take here at Carthage College. From this starting place:

- We expect no prior knowledge of programming
- We intend that after taking this course you will be able to write small tools that will be of use in your major / minor and / or career

Does not count towards CS Major or Minor

It is possible that this course will encourage you to take more courses in the Computer Science Department. Perhaps, you might consider adding a CS major or minor. We must point out that *this course does not* count towards the CS major or minor.

Content

We are going to learn to program in a language called Python.

Python is, in technical terms, pretty chill. It is known for being both gentle and powerful.

The January 2021 TIOBE Index[1] ranks Python as the NUMBER ONE most popular programming language.

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[1] https://www.tiobe.com/tiobe-index/

There are so many prewritten Python libraries adding to its power that the following image is funny (to computer people):

We will cover:
- Variables, lists, dictionaries and tuples
- Input from and (formatted) output to both the console and files
- If (selection) statements
- Looping
- Functions and parameters
- Using several prewritten libraries – in particular: MATPLOTLIB

Class text

The class text is web-based. The book is "interactive" in that it incorporates many exercises directly in the text. These exercises come in two forms.
- Participation Activity – you earn points for following along.
- Challenge Activity – you earn points by answering questions or solving problems.

To access the class text:
1. Sign in or create an account at learn.zybooks.com – you must use your carthage.edu address.
2. Enter zyBook code: CARTHAGECSC1100KivolowitzSpring2022
3. Subscribe

Use of the class text is <u>required</u>.

A helpful web-based resource can be found here: http://introtopython.org.

Chapters to be covered
Chapters 1 through 8 will be covered. Additionally, chapters 10, 12 and 15 will be covered.

Note on using web-based resources
There are two *incompatible yet current* families of Python: 2.x and 3.x. We are studying 3.x.

When you consult online references, be wary of differences between the languages.

Grading – extra credit

Type	Weight	Comment
Zybooks Readings	30%	Self-explanatory
Projects / Homework	50%	Programming assignments and forms of homework other than Zybooks.
Midterm	10%	Multiple choice
Final	10%	Multiple choice, cumulative

Use of student projects for in-class learning

It is really important to learn how to locate errors and fix them in your code. Student projects may be chosen after grading to be used in-class for bug-hunting practice. This is definitely not intended as a slight - finding and fixing of bugs is among the most important lessons you can learn.

Accommodations

The Carthage Advising Center offers a variety of services and accommodations to students with disabilities, based on appropriate documentation, nature of disability, and academic need. In order to initiate services, students should meet with Diane Schowalter at the start of the semester to discuss reasonable accommodation. After meeting with Diane Schowalter, students in need of accommodations should also speak with individual faculty members from whom accommodations are sought to communicate their needs and make requests in a timely manner. If a student does not request accommodation or provide documentation, the faculty member is under no obligation to provide accommodations. You may contact Diane Schowalter at ext. 5802 or via e-mail at dschowalter1@carthage.edu.

A note about accessibility

Carthage College strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers due to your disability (including mental health, learning disorders and chronic medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, you also need to register with Diane Schowalter in Learning Accessibility Services (dschowalter1@carthage.edu).

Concerning learning outcomes

Students may vary in their competency levels of any stated outcome. Students can expect to achieve stated outcomes only if they honor all course policies, attend classes regularly, complete all assigned work in good faith and on time and meet all other course expectations of them as students.

Possibility of changes made to the course

Please note the above schedule, policies, procedures and assignments in the course are subject to change in the event of extenuating circumstances, by mutual agreement and / or to encourage better student outcomes.

Academic success and health

Good health can help you achieve academic success. The Health and Counseling Center (HCC) supports students by addressing physical, mental, and emotional well-being. All services are free and confidential and are provided by experienced and licensed professionals. Services are available to all full-time, undergraduate students.

Office hours

I do not publish office hours because no matter what I choose them to be, many of you will not be able to make it. What I do instead, I think, is way better.

I strive to keep my Google Calendar up to date. You have access to my calendar. Consult it, find an empty spot, set a meeting adding me as a guest and send me an invitation. In this way, I can meet with you when it is convenient for you rather than ask you to conform entirely to my schedule.

To make an appointment use Google Calendar. You have access to it – we all do. Select show co-worker's schedule and enter "pkivolowitz." When my schedule is visible, pick a blank spot. Click on the blank spot you want and enter an informative title and adjust the time carefully.

MAKE SURE YOU SEND ME AN INVITATION. Do this by entering my email address where guests are specified. Make sure you click the "send invitation" button shown to you when you've saved the meeting.

Academic honesty guidelines

Carthage College Academic Honesty Guidelines are found here: https://www.carthage.edu/community-code/academic-concerns/academic-honesty-guidelines/.

TL; DR

Plagiarism	Don't do it
Cheating on a Test	Don't do it
False Citation	Don't do it
Multiple Submissions	Don't do it
False Data	Don't do it

About me

I have been devoted to the computer sciences for 47 years. I've started many businesses (mostly in Visual Effects for Motion Pictures) and have enjoyed some successes like multimillion dollar contracts, tens of millions of dollars in sales, 1.5 Academy Awards and two Emmys.

This is my 7th year at Carthage. Prior to coming here, I was 10 years at the University of Wisconsin - Madison. I am Chair of the Computer Science Department here at Carthage.

I am fanatical about quality and pride-of-craft. You will hear me say it over and over: Software kills. We have a moral and social obligation to code the best we can.

In my copious spare time, I write Zombie novels. (https://www.amazon.com/Get-Off-My-Computer-Apocalypse/dp/0989212815)

Most of what comes out of my mouth is filled with cynicism and, more rarely, humor.

I am *never* sarcastic.

Class meeting

Our class meets MWF at 2:50 PM to 3:55 PM in Straz 251. For this room, our class is quite full.

If there is evidence of non-compliance with COVID safety policies, I will move the class online. This includes behavior in the halls near Straz 251. So: טראָגן דיין מאַסקע**.**

Critical request

Teaching is a partnership between instructor and student. The instructor's job is to present material in a logical and understandable way. The instructor's task is facilitated by active feedback from the student and by the student's active involvement. Without participation from the student, the instructor's task is made difficult.

Please speak up in class.

Please interact.

Please ask questions.

Please interrupt me.

Please ask me to repeat, clarify and explain.

Please be my partner in making this class a fun and educational experience for all of us.