Intro to Python 6495-090
Fall 2022

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Course Description and Objectives

Python is a language with a simple syntax and a powerful set of libraries. It is an interpreted language, with a rich programming environment, including a robust debugger and profiler. While it is easy for beginners to learn, it is widely used in many scientific areas for data exploration. This course is an introduction to the Python programming language for students without prior programming experience.

Prerequisites

This course does not assume any prior programming experience and will be paced accordingly. Since we are learning a new language, there *can* be a substantial amount of time investment on your part. This class is very interactive class and learning a language can be work intensive. However, as with anything you invest time into, the end result will be rewarding.

Required Course Materials

The textbook for the class is available from the University Bookstore, Amazon or other online bookstores.

Required Textbooks:
Python Crash Course: A Hands-On, Second Edition: Project-Based Introduction to Programming
     By Eric Matthes, ISBN-13: 9781593279288, ISBN-10:1593279280

Available free online:
https://learning.oreilly.com/library/view/python-crash-course/9781492071266/

Zoom (for appointments and live-stream webinars)
https://zoom.us/download

Resources (editors & web sites):
There are many text editors available for free online. You may use a text editor of your own choice. The most preferred and recommended for Python is PyCharm. **PyCharm will be used during lectures**

Please download and install the following:

PyCharm
https://www.jetbrains.com/education/download/#section=pycharm-edu

*Anaconda – **Required***
64-Bit Graphical Installer (654 MB)
https://www.anaconda.com/distribution/#download-section

*SQLite Browser – **Required** for the database session*
https://sqlitebrowser.org/dl/

Course Requirements & Grading Criteria

Grading Weights

Homework assignments	20%
Quizzes	15%
Code along, class exercises & participation	15%
Course capstone project	10%
Mid-term	20%
Final	20%
Total	100%

Final grades will be assigned using the following scale (as a percent of total available points):

93% and up A
90% to 92.9% A-
87% to 89.9% B+
83% to 86.9% B
80% to 82.9% B-
77% to 79.9% C+
73% to 76.9% C
70% to 72.9% C-
67% to 69.9% D+
60% to 66.9% D-
below 59.9% E

Homework assignments:
All homework assignments must be of individual efforts. If you have difficulties with the assignments, please see contact me. All assignments will be submitted via Canvas on or prior to the due date.

Quizzes:
All quizzes are open book, open notes and taken outside of class online in Canvas. Aside from the due dates, there are no constraints on quizzes. My view on quizzes may be a little different than usual. I prefer

to use quizzes as a continuous teaching tool outside of the classroom. There may be content on a quiz that was not covered in lecture and is designed to extend the education outside of the classroom.

There are no make-up quizzes or exams available.

Course capstone project:
Students will design and develop a project using Python and the knowledge learned in class. Details and project ideas will be released after the midterm examination along with a project guideline document.

Exams:
There will be two exams, the midterm exam and the final exam. Each exam will cover the topics we learned in the respective half of the course. All exams are open book, open notes and taken online outside of class. Please see the course schedule in Canvas and monitor due dates. As with quizzes, aside of the due dates, the exams have no time constraints. There are no make-up exams available.

The final examination is available at the end of the 10th week of the course. Both midterm and final exam will consist of multiple-answer questions.

Due dates/Late Assignments:
Please plan accordingly and respect indicated due dates. If you are in doubt about a due date, check the course calendar on Canvas. Any late assignment will lose 10% for every day they are late. Quizzes & exams will not be accepted late. There are no make-up exams or quizzes available.

Canvas:
I will use Canvas to make announcements, send e-mails, and to disseminate most material, including in-class exercises, quizzes and exams. In addition, you will submit your completed assignments and do quizzes and the midterm/final exam in Canvas.

The Comments area in assignments in Canvas:
Canvas provides a comment area for each assignment. I may use this area to make comments on the grading, coding mistakes, recommendations, etc. If you have issues or questions for grading, please contact me instead of posting in this comments area. It is very difficult to track comments and usually do not receive notifications.
Please note: Please do not submit assignments via the comments section in Canvas. They will not be graded or accepted. If you missed the due date for whatever reason, contact me and I will reopen the assignment. Grading may be subject to a late penalty.

Comments on academic dishonesty:
There is abundant information online such as forums, code snippets/programs and samples making it fairly easy to copy answers as solutions to the assignments. First, it is very easy for me to spot copied work, whether if it came from an online source or from another student in the class. Secondly, this is an elective course and you chose to be here. Copying others' work essentially means you're only cheating yourself. Instead of telling you to not cheat and cite code of ethics from the student handbook, I'd like to offer you a challenge. The challenge is to simply try and solve the problems on your own first. I challenge you to do some trial and error on the problem. A little frustration and perseverance is a strong learning process. If you truly become stuck, please reach out to me and let's figure it out together. As your skills develop in the subject and you develop solutions to the problems, I promise you, the knowledge and techniques you acquire in class will become far more rewarding in your career than copying someone else's work.

Please Note:

- All readings to be completed prior to the corresponding module.
- All assignments and quizzes are available in Canvas and due each week by each Sunday midnight.
- In-class exercises, assignments and quizzes will be submitted and graded via Canvas.

Topics & Class Schedule (subject to revision)

Week 1	INTRODUCTION & VARIABLES
Topics:	Introduction to the class, programming basics, Python basics, data types and variables, numbers, strings, arithmetic operators & expressions
Readings:	Ch. 1: Getting Started Ch 2: Variables & Simple Data Types

Week 2	CONDITIONALS
Topics:	Comments in code, Conditions, Boolean logic, logical operators; ranges; Control statements: if-else, short-circuit evaluation, while loops
Readings:	Ch. 5: If Statements Ch 7: Input & While Loops

Week 3	LISTS & FOR LOOPS
Topics:	Working with lists and, basic list operators, replacing, inserting, removing an element; searching and sorting lists.
Readings:	Ch. 3: Introducing Lists Ch 4: Working with Lists

Week 4	DICTIONARIES ● DATA STRUCTURES
Topics:	Working with dictionaries, dictionary literals, adding and removing keys, accessing and replacing values; traversing dictionaries. Design with functions, arguments & return values, program structure & design.
Readings:	Ch. 6: Dictionaries

Week 5	FUNCTIONS
Topics:	String manipulations: subscript operator, indexing, slicing a string; strings and number system: converting strings to numbers and vice versa. Strings and text files; manipulating files and directories, OS and sys modules; text files: reading/writing text and numbers from/to a file; creating and reading a formatted file (csv or tab-separated).
Readings:	Ch. 8: Functions

Midterm Exam (Due by Sept 25th, midnight)

Week 6	STRINGS • FILES & EXCEPTIONS
Topics:	String manipulations: subscript operator, indexing, slicing a string; strings and number system: converting strings to numbers and vice versa. Strings and text files; manipulating files and directories, OS and sys modules; text files: reading/writing text and numbers from/to a file; creating and reading a formatted file (csv or tab-separated).
Readings:	Ch. 10: Files & Exceptions
Activity:	• In-class exercise: Files/IO & Exceptions

Week 7	OBJECT ORIENTED PROGRAMMING (OOP)
Topics:	Classes and OOP: classes, objects, attributes and methods; defining classes; design with classes, data modeling; persistent storage of objects
Readings:	• Ch. 9: Classes • How to explain object-oriented programming concepts to a 6-year-old, by Alexander Petkov

Week 8	OOP • CLASSES
Topics:	OOP continued: inheritance, polymorphism, operator overloading (_eq_, _str_, etc); abstract classes; exception handling, try block
Readings:	• TBA

Week 9	INTRO TO DATABASES • DATABASE LAB
Topics:	Setting up a project, creating a database, user input, styling and deploying
Readings:	• TBA
Activity:	• Database in-class lab

Week 10	API's • JSON & XML • MODULES • CONCLUSION
Topics:	• Working with modules & 3rd party modules to solve business problems • Protocol – JSON, XML • Working with API's • Python decorators, Advanced objects and data structures, introduction to GUI's
Readings:	• Python Crash Course Ch. 17
Activity:	• Guest speaker, Jarik Mudrow, 3rd party modules • In-class exercise: Using modules to solve business problems • In-class exercise: Accessing API's, data exchange • Final exam review
Course Capstone Project & Final Exam (Due by Nov 6th, midnight)	

UNIVERSITY OF UTAH POLICIES, STANDARDS & GUIDELINES

Student Conduct in Remote Learning Contexts. The Student Code remains in place for all students whether a course is offered in person, online, or remotely. The instructor's intellectual property rights and the privacy of all course participants must not be violated by students at the Eccles School of Business. Students may not share course materials with non-class members without explicit written permission from the course instructor. Harassment or bullying of instructors and students, including via electronic media, the internet, social networks, blogs, cell phones, and text messages, will not be tolerated. Students found responsible for such infractions are subject to disciplinary sanctions. Students may not record any part of a class session without the express consent of the instructor, unless approved as a disability accommodation. Individual course instructors may record course sessions but only for use by registered class members for instructional purposes. All recordings will be housed on secure platforms authorized by the University of Utah (e.g., Canvas)."

Technical Classroom Assistant Support. Some courses may have a technical classroom assistant to support the faculty member in managing the classroom and remote attendance. Please note that these technical classroom assistants do not support individual student IT issues; instead, please see the information for the Campus Help Desk below. For a list of student online and technical resources, see HERE.

- The Campus Help Desk is staffed 24/7/365. To quickly find answers to your questions, search the UIT Knowledge Base. If you still need help, call 801-581-4000, option 1. For less urgent issues, you may also email helpdesk@utah.edu. For IT outage information, visit our IT Services Status page at uofu.status.io or follow @UofUITStatus on Twitter.
- The Business Tutoring Center will provide Zoom assistance for Eccles students. Visit the website to see when Technical Assistant Tutors can assist you.

Zoom Etiquette

Here are some tips for engaging on Zoom calls.

1. Sign into the Zoom desktop client and stay signed in.
2. **Please do not share, distribute, capture, or download these videos.** This material is subject to the University of Utah's copyright policy that all students previously agreed to, which prohibits unauthorized use and distribution without permission. Thank you all for your patience and understanding.
3. If your video is on:
   - Unless you're talking, **stay muted** to reduce background noise.
   - Make sure you sit in a well lit and quiet place.

- **Be mindful of what's going on behind you.** Think about having a solid wall behind you or using a virtual background. Professional virtual backgrounds are available from the University of Utah here.
- While there is no dress code for Zoom calls, remember that this is still a classroom setting. Feel free to be comfortable, and remember that if your video is on, people can see you.

4. If your video is off:
   - You are not required to have your video on for any Zoom classes, unless specified as part of a proctored test.
   - If you choose to keep your screen off, best practice would be to **communicate that to your professor**. There is no requirement to give a reason, but this will help faculty know that students are engaging with the course.

I use the sanctions under this code – in particular for academic misconduct. Please be honest in doing your work.

The student code is published here:
https://regulations.utah.edu/academics/6-400.php

I rigorously enforce School and University policy on academic integrity, discrimination, accommodation for the disabled, etc. Please see the School or University web site for specific information about these policies.

Students are expected to pursue the highest standards of academic honesty in all assignments. This includes, but is not limited to, refraining from cheating, plagiarizing, research misconduct, misrepresenting one's work and / or inappropriately collaborating. Plagiarism specifically refers to the use of another's work, ideas and words as your own.   It is also extended to include the re-use of a paper originally intended for a different class. In other words, if you have written a paper for a previous class and reuse it without indicating that it is being reused and extended, it also falls within the category of academic dishonesty. All class work is expected to be original, unless there is appropriate acknowledgement of sources. Students that are found engaging in the above activities will receive a failing grade for the specific assignment and may fail the course.

The University expects regular attendance at all class meetings. You are responsible for satisfying the entire range of academic objectives, requirements and prerequisites as defined. If you miss the first two class meetings you may be required to withdraw from the course. If you are absent from class to participate in officially sanctioned University activities (e.g. band, debate, student government, intercollegiate athletics), religious obligations, or with instructor's approval, you will be permitted to make up both assignments and examinations. The involved students must deliver written documentation of absence to their instructors, preferably before the absence but in no event later than one week after the absence. Students are responsible for class material during an absence and should make individual arrangements to get notes or updates.

The University of Utah's Accommodation Policy allows students to request a modification of class requirements if those requirements conflict with the students' sincerely held core beliefs. The responsibility is on the student to request the modification, and I have full decision-making power to deny or grant the request. Although this syllabus has been carefully developed, it is always possible that some of the writings, lectures, films or presentations in this course may include material offensive to some students. Please review the syllabus carefully to see if this course is one that you are committed to taking. If you have a concern, please discuss it with me at the earliest opportunity.

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

GRADING POLICY
Grades reflect the judgment of the instructor and, as such, the weights that I assign to each task as well as the scales detailed below serve only as guidelines in my calculation of your final grade. As a result, your final grade may vary from these guidelines. They will, however, hew quite closely to the grade descriptions articulated by the School of Business:

A - Excellent Performance/Superior Achievement
An A student is one who understands the content and learning objectives thoroughly, completely, and accurately, and can demonstrate that understanding in a number of ways. Such a student will have done exceptionally well on assignments, exams, and class projects, and will have participated extensively in class discussion by asking good questions and contributing constructive thoughts. An A student will also have demonstrated a strong interest in the learning process by contributing to a constructive class environment and to the learning success of his or her fellow students

B - Good Performance/Substantial Achievement
A B student is one who has demonstrated a relatively high level of mastery of the content and learning objectives of the course. A B student will have done very well on assignments, exams, and class projects, and will have participated constructively in class discussion. A B student will have demonstrated a positive attitude toward the learning process and made a positive contribution to the learning environment of the class.

C - Standard Performance and Achievement
A C student will have demonstrated a reasonable level of mastery of the content and learning objectives of the course. A C student will have completed assignments and demonstrated a reasonable grasp of requisite knowledge on exams and class projects. A C student will have demonstrated a reasonable level of commitment to the learning process and made a positive contribution to the learning environment of the class.

D - Substandard Performance/Marginal Achievement
A D student will have demonstrated some level of mastery of the content and learning objectives of the course, but less than that desired to serve as a basis for future endeavor. A D student will

not have completed all assignments in a satisfactory manner, nor demonstrated more than a partial grasp of requisite knowledge on exams and class projects. A D student will have demonstrated only some commitment to the learning process and made only a marginal contribution to the learning environment of the class.

E - Unsatisfactory Performance and Achievement
An E student has failed to demonstrate any significant mastery of the content and learning objectives of the course. An E student will not have completed all assignments in a satisfactory manner, nor demonstrated any significant grasp of the requisite knowledge on exams and class projects. An E student will have failed to demonstrate any significant level of commitment to the learning process, nor made any positive contribution to the learning environment of the class.

DESB Use of Electronic Devices Policy

Use of any and all electronic devices (e.g. pagers, cell phones, language translators, laptops, tablets, calculators, etc.) is forbidden during an exam unless otherwise specifically authorized by the instructor. A student who uses an unauthorized device may be subject to penalties for academic misconduct.

An Important Message from Business Career Services

Business Career Services at The University of Utah David Eccles School of Business offers a full range of free services to support your future career success. Career path selection and coaching, resume review, interview techniques and salary negotiation techniques are among topics covered. Mastering these skills will greatly improve your ability to secure the career most closely matched with your ambitions. In addition, Corporate Outreach is expanding the network of excellent companies, worldwide and in every sector, to extend your job search reach. Students may also access multiple opportunities to prepare for and interact with potential employers in a variety of formal and informal settings. Contact Business Career Services today at (801) 587-8687 to make contact and meet with your Career Coach. Students who enroll in the Career Business Associates Professional Development Plan average more interviews, more job offers and higher starting salaries. Enroll with your career coach as soon as possible! We want to see you early and often throughout your years at the Eccles School of Business!!

Americans with Disabilities Act

The University of Utah, David Eccles School of Business seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the instructor and to the Center for Disability Services, http://disability.utah.edu/, (Links to an external site.)Links to an external site.162 Olpin Union Building, 581-5020 (V/TDD) to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

David Eccles School of Business -- Statement of Professional and Ethical Conduct

Because of the importance of professional and ethical behavior in business, and its emphasis in our program, **professional or academic misconduct is not tolerated** in the David Eccles School

of Business. Students are expected to adhere to the standards of behavior outlined in the University of Utah Code of Student Rights and Responsibilities (Policy 6-400). Students engaging in behavioral misconduct could be subject to suspension or dismissal from the University. Students involved in any form of academic misconduct, including but not limited to cheating on tests, plagiarism and collusion may, at the instructor's discretion, receive a failing grade in the course, examination, or academic assignment. In addition to or instead of this sanction, the instructor may refer the case to the Student Behavior Committee for hearing. If the instructor chooses not to do so, the Associate Dean for Academic Affairs, after appropriate investigation, may do so along with a recommendation to dismiss the student from the Business School. If, after hearing the evidence, the Committee determines that the student in question is guilty of the misconduct charged, the Committee may impose sanctions in addition to those taken by the professor. If the academic dishonesty is not proven, the instructor must rescind any sanctions imposed and will be required to evaluate the student's performance with the assumption that there has been no misconduct. The School will treat the student likewise. If a student suspects another student of academic misconduct, he/she should refer the incident to the instructor, the appropriate department, the Associate Dean for Academic Affairs, or the Student Behavior Committee, administered by the Associate Dean of Students, 270 Union.

ENTP Policy on Academic Dishonesty

In accordance with the DESB standards for professional and ethical conduct, cheating on exams, quizzes, and assignments in this class is unacceptable. Any student caught cheating in class will receive a 0% on that assignment, quiz or exam for a first offense. Cheating on a quiz also will result in the student being evicted from class for that class period. If a student cheats on any other assignment, quiz, or exam, he/she will receive a failing grade for the course. This grade will **not** qualify as a score that can be dropped. His/her name will be added to the University of Utah's academic dishonesty database, and he/she will be subject to further sanctions by the DESB. Cheating includes, but is not limited to:

1. copying or attempting to copy another student's answers;
2. plagiarism;
3. turning in someone else's work and representing it as your own; and
4. Comparing team project answers to another team's answers.