

CS 21A-01W Python for Programmers

Summer 2017
CRN 10220
Foothill College



Syllabus

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NO ON-CAMPUS MEETINGS

Lectures: online **Labs:** online

Course Description:

This course is a systematic introduction to fundamental concepts of the Python programming language and development environment. Coding topics include object oriented programming, elementary data structures, modules, algorithms, recursion, data abstraction, code style and documentation, debugging techniques and testing.

Prerequisites: One of the following: CS1A, 1AH, 2A, 2AH or the equivalent is strongly advised.

Required Text: **Starting Out With Python**, 3rd edition, 2015, by Tony Gaddis, Pearson publisher, ISBN: **978-0-13-358273-4**

This book can be ordered through the [Foothill Bookstore](#).

Pearson [Textbook Site](#)

Software:

[Python 3 Downloads](#)

[Python documentation](#)

[Python Tutorial](#)

Course Objectives

The student will be able to:

- 1) Describe the basic elements of the Python language and the Python interpreter and discuss the differences between Python and other modern languages.
- 2) Analyze and demonstrate the use of lists and tuples in Python.
- 3) Describe and use Python dictionaries correctly and demonstrate the use of dictionary methods.
- 4) Define, analyze and code the basic Python conditional and iterative control structures and explain how they can be nested and how exceptions can be used.
- 5) Design, implement, test, and debug functions and methods that can be used in programs, and demonstrate the way parameters are passed in such functions and methods.
- 6) Write classes to demonstrate the ideas of encapsulation, inheritance, interfaces and object oriented program design.
- 7) Explain and demonstrate methods of error handling and Python exceptions.
- 8) Demonstrate the understanding of “magic methods” through use of these in the context of a Python application.
- 9) Use pre-written modules and learn the techniques necessary for creating modules.
- 10) Write to and read from files using intermediate file I/O operations in a Python program.
- 11) Use an existing library to implement a graphical user interface.
- 12) Design, implement, test, and debug a program that uses each of the following fundamental programming constructs: string processing, numeric computation, simple I/O, arrays and the Python standard library.
- 13) Solve problems that have origins in a variety of disciplines including math, science, the internet and business.

Student Learning Outcomes (SLOs):

- 1) Write and debug Python programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional and functional components of the Python language in their course programs.
- 2) Apply ability to use object-oriented program techniques to design and implement a clear, well-structured Python program. Specifically, the student will use and design classes and objects in their course programs.

Lecture Objectives:

The purpose of the lecture material is to provide instruction and examples of weekly topics. Materials will consist of lecture notes, handouts, video notes and internet links.

Lab Objectives:

The purpose of the labs is to provide students hands-on independent practice at problem solving using the Python3 programming principles covered in the lessons. The lab component is a critical part of the learning tool for this course.

Computer Science Support

The Ion Georgiou STEM Success Center: The “STEM Center”, located in the 4200 building, room 4213, will have qualified CS tutors at various times each day.

There is also a dedicated Computer Science lab located in the 4200 building, room 4204.

Online Tutoring support is available.

Class Website

All instruction occurs online through the **Canvas** course management system (CMS). The system is highly catered to getting you help fast and efficiently from classmates and myself. Rather than email questions to me directly, you are encouraged to post your questions on the course forum Discussions panel.

Course Site Information:

The various areas of your course can be accessed through the Canvas menu on the left navigation bar.

- **Modules:** Weekly topic lecture material.
- **Lab Programming Assignments:** Uploaded to Canvas.
- **Exams:** Submitted through the Canvas quiz tool.
- **Public Forum:** Communication using the Discussion Forum of Canvas.
- **Gradebook:** Displays updated course grades.
- **Resources:** Provides topic notes, tutorial materials and course handouts.

Format of weekly modules – Weekly topic material is released on Mondays at 8:00 AM. The first week there are additional resource materials to help you get set up for the course.

Lab assignments – assigned each week. Assignment specifications will open on Wednesdays at 8:00 AM and are due on Tuesdays at 11:59 PM (2nd week onwards).

Exams – timed sessions online. There will be a one hour midterm exam on Thursday of the 3rd week and a comprehensive two hour Final exam on Tuesday of the 6th week.

Class discussions – Student forum discussion opportunities are available both in class as well as privately in the course management Discussion and Conversation tools.

Gradebook – Displays current course grades for all students per each assessment.

Tutorials, Documentations and Resources – Supplementary course support materials are provided in these course links.

Course Policies:

Attendance and Participation – Weekly attendance and participation is assessed through exam and lab assignment submissions. It is *ultimately* the student's responsibility to drop or withdraw from the class.

You must also post an introduction in the first week to avoid being dropped as a **no-show**. Be sure to include uploading an avatar in your course site profile before you post your introduction. After the first week forum posts are not required.

Students who do not take the midterm will be dropped.

For additional course participation details, see the syllabus segment below on *Attendance Guidelines*.

Communication and other Activities

Announcements:

Weekly announcements and important reminders will be posted to help keep students on track with where we are in the course. If you are not receiving an email after I send out an *Announcement*, then double-check the email address and notification preferences that is on file in your Canvas account.

Public Forums: Class forum discussion enhances the course learning experience. Questions and comments should be posted to the Canvas Discussion Forum. Unless a question is of a private nature (i.e. grades, registration issues), please use the public class forum. Also, feel free to answer your fellow student questions, even if you only have a guess as to what the answer is. It is through this opportunity to engage with each other that you can both build your confidence in knowing the material as well getting to know one another.

Weekly discussions will be generated on the lab assignments. If you want to ask a question about an existing topic “**Post a Reply**” to that discussion.

Private Messages: Please use *public* Discussions for any question or comment that relates to the class – this helps everyone to learn. If you have a confidential question (grades or registration) use the Canvas Conversation Private Message Tool (PMT).

Checking my messages:

The best way to get a hold of me is through sending a “private message” via the Canvas Conversation tool.

Posting Program Code: You can post code to the public discussions, provided that it is not source directly from your assignment. If you have an assignment question, translate that into a piece of code that does not reveal your answer or submission, exactly.

When posting code fragments (i.e. portions of your program) into questions, make sure these code fragments are perfectly indented and that they are properly formatted. For details, see the [PEP8 – Style Guide for Python Code](#).

Be specific in your questions. Find exactly what you want to know about and post only that part of the code. For details, see the syllabus segment below on *How to Ask a Question*.

How to Ask a Question: **Be specific.** Show exactly where you seem to be faltering so that qualified others can know how to help you. This holds true if you are posing your question to the public forums, the [STEM center](#) or me directly. Questions are encouraged. The engagement of questioning helps everyone learn. Just be sure to have wrestled with the problem first so that you can show you have tried to solve it. If unclear or stuck you then have narrowed down your question specifically. Knowing exactly where you are uncertain allows for incremental progress on each assignment task. Start your labs early – this allows time for the question, answer and progress cycle to happen most successfully.

[Opportunities for CS students](#) is a blog that contains announcements of internships, scholarships, software offers, pertinent public lectures and other useful CS updates. Announcements will be posted often during the quarter. Students are recommended to take advantage of CS opportunities available here.

Grading:

Assignments 50%
Exams 50%

Lab Assignments	4 x 15 points/each = 60
Midterm Exam	1 x 20 points = 20
Final	1 x 40 points = 40
Total	120 points

Grading Scale:

% need for	this grade
93	A
90	A-
87	B+
83	B

80	B-
77	C+
70	C
67	D+
63	D
60	D-
< 60	F

Continual access to the Internet and Late Policy:

Since this is a fully online class, it is your responsibility to make sure that you have continuous Internet access. Please plan ahead of time and be aware of the weekly deadlines. If you know that there will be a conflict ahead of time with class responsibilities, then you need to contact me PRIOR to the deadline.

Late lab assignments will be accepted with a two point penalty **per day** late up to two days after the due date.

Late exams are not accepted.

Midterm Exam:

There is a midterm exam in the third week. The midterm is a one hour timed exam. The exam will open at 6:00 PM on Wednesday July 19th and must be completed by 11:59 PM on Thursday July 20th within a one hour uninterrupted window.

Final Exam:

There is a comprehensive final exam in the sixth week. The final is a two hour timed exam. The exam will open at 6:00 PM on Monday August 7th and must be completed by 11:59 PM on Tuesday August 8th within a two hour uninterrupted window.

Participation:

Regular weekly participation is required by College regulation. To continue in this class you must participate weekly in all assessment areas: lab assignments, and exams. This is part of the class participation requirement that online classes must enforce to maintain their transferability and accreditation.

Attendance Guidelines:

You are expected to sign on and follow the lecture and assignments. If you need to drop the class, this will be your responsibility.

Drops and Withdrawal

You will be dropped by me for non-participation (i.e. any of the following):

- You must post an introduction in the first week to avoid being dropped as a **no-show**. An Introduction thread can be found in our course Discussions menu.
- Students who are enrolled in the class but who do not submit the first assignment will be dropped for non-attendance.
- Missing our scheduled midterm exam without prior notice will result in an automatic drop, depending on the situation and my judgment.

You may be dropped by me for non-participation (i.e. any of the following):

- If you receive a zero on, or fall behind in, two consecutive lab assignments or three lab assignments, total, I may drop you. (See exception below).

WITHDRAWAL FROM CLASS: To officially withdraw from a class you must log in to MyPortal and drop the class. You can review important drop deadlines by clicking on *View Your Class Schedule*. After the withdrawal deadline, I cannot give you a “W” grade, but instead must give you the achieved grade based on the assessments you have completed. Before withdrawing, please contact me, perhaps I can help.

Ultimately it is the student’s responsibility to withdraw from the course in the event of non-participation so as not to receive a low course mark on your grade record.

Exception to Above Policies:

If the non-participation that has been described above occurs partially beyond the last date to drop with a “W”, I am unable to drop you, and you will receive whatever grade that your points dictate. Therefore do not assume that you can simply stop participating late in the session and you will be dropped. If you intend to drop, please do so yourself, so that you do not accidentally end up with an unintended “F”.

If you decide to drop the class, let me know. I cannot allow anyone who has dropped to continue to have access to the course material.

If you have any further questions and or concerns regarding these policies feel free to contact me.

Important Dates:

Sunday, July 9th

Tuesday, July 11th

Thursday, July 20th

Wednesday, August 2nd

Tuesday, August 8th

Deadline to Post Introduction 11:59 PM

Last day to drop without “W” and for refund

Midterm Exam

Last day to drop with “W”

Final Exam

Please ensure you have no conflicts with midterm or final exam dates; there will be no make-ups.

Academic Integrity:

The purpose of this course is to help learn. My goal is to guide you to succeed in your goals for the course.

There are many places to go for help with this class:

- 1) Post a question in the Canvas class forums using the “*Discussion*” tool.
- 2) Tutoring and student support is available at the **STEM Success Center**. **Online Tutoring** is available.
- 3) Send me a private message in our Canvas “*Conversation*” tool.

Collaboration:

You are welcome to study with other students in the course - active peer forum engagement is encouraged.

It is OK to ask questions, discuss weekly course topics - use the Canvas public forums or the STEM success center to do so.

However, all class-related assignments are considered individual efforts.

It is NOT OK to work together on the course assessments (labs and exams).

Any infractions will be detected and will result in an automatic 0 on the given assessment. College administrative consequences will also be necessary.

Working together on homework = ZERO + Dean of Student's Office.

Husbands and wives, roommates, and friends taking the course together: don't discuss ungraded homework with each other outside of the public forums. Instead, direct all of your questions to the public forums or the tutoring available at the STEM center. Do not look for answers on cheater web sites or pay-for-help web sites.

Any variation of collaborating or copying programming lab assignments is prohibited. The assignment must be 100% your own work. Changing a few variables around to make them look different does not qualify as doing your own work. Accepting help from someone who is not trained to teach without giving away the answer will short-circuit your learning process – you will actually become weaker making it very difficult to keep up with the course material.

You can talk about the modules all day long off-line if you wish. This rule only applies to course assessments yet to be submitted. There is a place to ask for help with homework: the Public Forums labeled for that purpose or the **STEM Success Center**.

For those of you wishing to give help in the public forums please do not give away the answer. Either tell the person where they can look to find the solution, give them a general idea or ask them to ask me or tutors available at the STEM Center. Do not post actual assignment solutions.

Disability:

To obtain disability-related accommodations, students must contact the [Disability Resource Center \(DRC\)](#) at the start of the quarter

Official Due Dates for Course:

This is the official schedule with all required work for the summer.

Week	Reading Assignment (Handouts; Textbook)	Lecture Topic	Tasks (Assignments/Exams)
7/3 - 7/9	Appendix A Appendix B 1.5 2	Course Introduction Dynamic Web Applications Why Python3? History Python Python 3 Installation Using Python Input Processing and Output	Python3 Interpreter Introduction Post due 7/9 11:59 PM
7/10- 7/16	3 4	Decision Control Structures Repetition Structures	Lab 1 due 7/11 11:59 PM
7/17- 7/23	5 6	Functions Files and Exceptions	Lab 2 due 7/18 11:59 PM Midterm due 7/20 11:59 PM
7/24- 7/30	7 8 9	Lists and Tuples More about Strings Dictionaries and Sets	Lab 3 due 7/25 11:59 PM
7/31- 8/06	10 11	Classes and OOP Inheritance	Lab 4 due 8/1 11:59PM
08/07- 08/11	12 13	Recursion GUI	Final due 8/8 11:59 PM

Changes: This syllabus is subject to changes, additions, deletions, and/or corrections.

Last modified: June 23rd 2:20pm.