ECE 498 – Section 0002
Programming in Python
Fall 2020
Credit Hours: 2

Course Schedule: 11:00 to 11:50, MWF, October 2 to end of semester

Instructor: Richard Eason, 205 Barrows Hall, reason@maine.edu, 581-2242

Office Hours: TBD

Text: Think Python, 2nd Edition by Allen Downey; O'Reilly

Prerequisite: ECE 498, Introduction to Python

Course Overview:

This 2-credit course will be offered during last two-thirds of the semester, and it must be taken following ECE 498, Introduction to Python, which is offered during the first third of the semester in the same time-slot. In addition to giving students more depth and exposure to the topics covered in Introduction to Python, this course will present additional topics such as Python classes, exception handling, use of modules, introduction such as NumPy and SciPy, and interaction with hardware. The course will involve extensive hands-on programming with a strong emphasis on using good Python programming practices. Python 3 will be used exclusively.

Course Objectives:

This course will cover an array of topics that will guide the student in becoming proficient in Python programming. The topics include the following.

◆ Expand further on the concepts covered in the Introduction to Python course including proper use of data types (strings, lists, tuples, sets and dictionaries), control structures (sequences, conditional statements, loops and functions), list comprehensions, working with python modules, and input and output operations, with further emphasis on using good Python programming practices
◆ Provide an introduction to NumPy and SciPy
◆ Introduce concepts of object-oriented programming and design including classes, inheritance and polymorphism
◆ Exception handling
◆ Interacting with hardware

Learning Outcomes:

By the course completion, students in the class should be able to:

◆ explain use of and and be fluent in the basic syntax, data types (strings, lists, tuples, sets and dictionaries) and other core features of Python

- explain the difference between mutable and immutable types
- write top-down down code utilizing assignments, sequences, conditional statements, loops and functions
- design, code, and test Python programs that meet requirements expressed in English
- write code to read from and write to files and create formatted output
- import and utilize modules as well as create modules
- recognize and implement what is considered to be good Python programming practices
- write code using NumPy and SciPy
- incorporate concepts of object-oriented programming and design, incorporating classes, subclasses, inheritance and polymorphism in their Python programs
- write code that properly implements exception handling
- write code that interacts with hardware

Course Assessment:

Assessment will be based on:

- Programming assignments, 65%
- Class attendance, participation and quizzes, 15%
- Final exam, 20%

University of Maine administrative policy statements

Academic Honesty Statement: Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314: https://www.maine.edu/board-of-trustees/policy-manual/section-314/

Students Accessibility Services Statement: If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, 581.2319, as early as possible in the term. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me, Rick Eason, (the instructor of the course) privately as soon as possible.

Course Schedule Disclaimer (Disruption Clause): In the event of an extended disruption of normal classroom activities (due to COVID-19 or other long-term disruptions), the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

COVID-19 is an infectious disease caused by the coronavirus SARS-CoV-2. The virus is transmitted person-to-person through respiratory droplets that are expelled when breathing, talking, eating, coughing or sneezing. Additionally, the virus is stable on surfaces and can be transmitted when someone touches a contaminated surface and transfers the virus to their nose or mouth. When someone becomes infected with COVID-19 they may either have no symptoms or symptoms that range from mild to severe and can even be fatal. During this global pandemic, it is imperative that all students, faculty, and staff abide by the safety protocols and guidelines set forth by the university to ensure the safety of our campus. All students are encouraged to make the Black Bears Care Pact to protect the health of themselves, the health of others, and the college of our hearts always.

Observance of Religious Holidays/Events: The University of Maine recognizes that when students are observing significant religious holidays, some may be unable to attend classes or labs, study, take tests, or work on other assignments. If they provide adequate notice (at least one week and longer if at all possible), these students are allowed to make up course requirements as long as this effort does not create an unreasonable burden upon the instructor, department or University. At the discretion of the instructor, such coursework could be due before or after the examination or assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance. The student shall not be marked absent from the class due to observing a significant religious holiday. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

Sexual Violence Policy:

Sexual Discrimination Reporting: The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to Title IX Student Services or the Office of Equal Opportunity.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

For *confidential resources on campus*: **Counseling Center: 207-581-1392** or **Cutler Health Center: at 207-581-4000.**

For *confidential resources off campus*: **Rape Response Services:** 1-800-871-7741 or **Partners for Peace:** 1-800-863-9909.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: **Title IX Student Services: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911.** Or [see the OSAVP website for a complete list of services.](#)