BUAN/ITSS 4381.001 Object Oriented Programming with Python Course Syllabus

Fall 2024

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Class Time: Thu 4:00pm-6:45pm
Class Location: JSOM 1.107
Office Hours: Thu 2pm-4pm or by appointment

Course Description

Students will learn basic concepts of Object-Oriented Programming (OOP) and implement the ideas using Python. The classes will consist of lectures with hands-on coding that reinforces the language constructs as well as using functions from basic libraries. Students will also learn basic data handling techniques with Python. The lectures will provide opportunities for the students to collaborate and learn.
Pre-requisite: ITSS 3311.

Course Objectives

The main objectives of the course are the following:

- Outline and develop algorithms, flowcharts, pseudocode, and program logic.
- Describe and depict workflow, processes, and activities.
- Use the above to write computer programs in Python.
- Program decision statements and iterative loops.
- Use built-in functions and program new ones.
- Familiarize with different data structures in Python.
- Store data in, and retrieve from, files.
- Create and use classes and objects.
- Know and utilize properties relevant to OOP.
- Perform exploratory data analysis and data visualization.

Course Procedures and Materials

1. eLearning will be used for class content (e.g. slides, sample codes, etc.) and the recording of grades. Class announcements (e.g., change in assignment dates) will also be posted on eLearning. It is the students' responsibility to keep up with the changes that are posted on eLearning. Students are required to bring in laptops to the class so that they can practice coding during the lectures.

2. There is no required material for the course. However, students are highly encouraged to use the following resources as background/follow-up reading:

- Severance, C. R. (2016). *Python for everybody: exploring data using Python 3*.
- Goldwasser, M. H., & Letscher, D. (2008). *Object-oriented programming in Python*. Pearson Prentice Hall.
- https://www.pythontutorial.net
- https://www.tutorialspoint.com/python/index.htm

Software

Anaconda: It provides a fresh version of Python 3 that does not interfere with any other versions that you may have on your computer, and it gives you one-stop shopping for all packages that are used in the course.
https://www.anaconda.com/download/
Note: More installation instructions will be provided in the first class.

Assignment Guidelines

- There will be three assignments during the semester. Students will be asked to answer multiple-choice questions and write Python programs. Assignments may include bonus questions.
- Submissions should be made on eLearning. Submissions by email will not be accepted.
- An assignment is due in a week after it is released. Assignments should be submitted before 11:59pm on the due date.

- Submissions that are up to 24 hours late will be penalized for 20% of total marks available (i.e., a flat 20 out of 100); submissions that are up to 48 hours late will be penalized for 30% of total marks available (i.e., a flat 30 out of 100); submissions that are over 48 hours late will be graded for 0.
- Each student is expected to do the assignments independently. Working on assignments together, copying another student's work, or having another person do your work is academic dishonesty and will be addressed via the academic dishonesty processes of the university.

Group Project Guidelines

- There will be one group project. Students will collaborate with each other and write Python programs.
- Submissions should be made on eLearning. Submissions by email will not be accepted.
- The project should be submitted before 11:59pm on the due date.
- Late submissions will be penalized for 30% of total marks available (i.e., a flat 30 out of 100).
- Each group should consist of 3-4 students. Peer evaluation is considered as a part of the grade.

In-class Exercises and Participation

- Participation is essential for this class as it ensures that you stay engaged with the course material and gain experience through hands-on coding activities.
- There will be an online in-class quiz for each class (except the exam weeks and the last week). Each quiz will contain a few relatively easy multiple-choice questions and/or programming exercises.
- Students will only be able to see the full questions if they come to the class. Quizzes are due after all the students in class have submitted.

- Students will get full points of the multiple-choice questions if the answers are correct and will get full points of the programming exercises if the code is written for the corresponding question (even the code has error).
- The two lowest scores will be dropped.

Exams

- There will be two exams. Exam 2 will only cover materials from *after* Exam 1.
- Both exams will be online and held in the testing center. Exams are closed-book and closed-notes. No programming software can be used during the exam.
- Exams will consist of 20 multiple-choice questions. Students will have 75 minutes to finish the exam after they start.
- It is the students' responsibility to schedule the exams early and in advance. Note that students must reserve the seat no later than 48 hours prior to their desired exam time. More information about how to schedule an exam in the testing center can be found below in Testing Center Information section.
- There is no make-up exam unless the student notifies the instructor before the scheduled exam week that she or he is not able to take the exam as scheduled. The instructor will ask for necessary documentations for a make-up exam.

Grading

Your grade in the course will be based on three assignments, in-class exercises, two exams and one group project according to the following scale:

- Assignments: 30% (10% for each)
- In-class exercises: 10%
- Exam 1: 20%
- Exam 2: 20%
- Group project: 20% (15% group grade + 5% individual contribution)

The letter grade will be determined according to the following scale:

Numerical Score	Letter Grade	Grade Points
[90, 100]	A	4.000
[87, 90)	A-	3.670
[84, 87)	B+	3.330
[80, 84)	B	3.000
[76, 80)	B-	2.670
[72, 76)	C+	2.330
[68, 72)	C	2.000
[64, 68)	C-	1.670
[60, 64)	D	1.000
[0, 60)	F	0.000

Course Calendar

This is a tentative class schedule; the timelines contained in the table below are subject to change at the discretion of the instructor.

Week/Date	Topic	Assignment & Project
1. 08/22/24	Course introduction, Python installation Variables, operators	
2. 08/29/24	Conditional execution, exceptions	
3. 09/05/24	Iteration	Assignment 1 released
4. 09/12/24	Functions Strings	**Assignment 1 due**
5. 09/19/24	Strings (*cont.*) Lists	
6. 09/26/24	Lists (*cont.*) Dictionaries	Assignment 2 released Practice Exam 1 posted
7. 10/03/24	Tuples **Exam 1 Review**	**Assignment 2 due**
8. 10/10/24	**Exam 1 (10/09-10/11)**	
9. 10/17/24	File handling Class and instance	
10. 10/24/24	Inheritance	Project released
11. 10/31/24	Data preprocessing and visualization	Assignment 3 released

12. 11/07/24	Data analysis and regression	**Assignment 3 due** Practice Exam 2 posted
13. 11/14/24	Data analysis and regression (*cont.)* **Exam 2 Review**	
14. 11/21/24	**Exam 2 (11/20-11/22)**	
15. 11/28/24	No class (Thanksgiving)	
16. 12/05/24	Web scraping Project workshop	**Project due (12/08)**

Academic Integrity

The University is committed to academic excellence and expects academic honesty from all members of the University and believes that it is essential for academic excellence and integrity. Academic honesty includes adherence to guidelines established by the instructor in a particular course for both individual and group work. It prohibits representing the work of others to be one' s own (plagiarism); receiving unauthorized aid on an assignment (cheating); and using similar papers or other work products to fulfill the obligations of different classes without the instructor's permission. Penalties for academic dishonesty may include a grade of "F" on the work in question or for the course. In addition, any student engaged in academic dishonesty will be subject to disciplinary action. Please refer to Academic Dishonesty for more detailed information.

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students. Please go to Academic Support Resources webpage for these policies.

Testing Center Information

- Testing Center Website
- 2024 Fall Semester Testing Hours
- Testing Guidelines For Students

University Policies

- Reasonable Accommodations (Disability, Pregnancy and Religion)
- Student Code of Conduct
- Student Grievances
- Involuntary Withdrawal
- Academic Credentials Policy