**Introduction to Python Programming**

**Spring 2019 Syllabus**

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Lecture hours and class room: Friday, 11:15 to 1:10 pm in Ungar 305

Office hours: Thursday: 10-12, Friday: 9-11

Teaching Assistant: TBD

**NOTE: THE FIRST CLASS WILL BE HELD ON JAN. 25TH**

**(THERE IS NO CLASS JAN. 18TH)**

**1. Course Information**

CSC498 Introduction to Python Programming aims to provide students with an understanding of Python programming basics and help the students use various Python packages for scientific applications, especially data science and machine learning applications. The course is suitable for students with little or no programming experience. Also, the students do not need to have prior knowledge of data science or machine learning.

**2. Goal**

The goal of this course is to help students understand Python and develop basic programming skills in Python. Through the course, a student will become a good Python programmer through applications in data science and machine learning.

**3. Textbook**

zyBooks: Introduction to Python Programming

Other materials:

A Byte of Python: https://python.swaroopch.com/

Python documentation: https://docs.python.org/3.6/

**4.  Homework Exercises**

**In zyBooks:**

There are two types of exercises/activities in zyBook: Participation and Challenge. These exercises are small programming tasks, which will be auto-graded by zyBook. The due dates will be specified in zyBook, and announced in each class.

**Programming Assignments (not in zyBooks):**

The assignments are mini-projects, and there will be 6 assignments. For each assignment, a detailed description (including due date) will be given in a document. These assignments will be posted to Backboard.

**5. Exams**

There will be two exams, a midterm exam and a final exam. The exams will be held at the normal class time. Exact dates for the exams will be announced at least a week prior to each exam.

Both exams will be open-note and close-computer. Students will be allowed to bring paper-notes to the exams. The notes can be handwritten or printed on papers. But, students cannot use any computers/smartphones during the exams.

If you miss an exam due to illness or a family emergency, you need to provide appropriate documentation (e.g., a doctor’s note) when you come back to class.

**6. Grading Policy**

Grades will be computed as follows:

Programming Assignments. 60%

Participation in Zybook 5%

Challenge in Zybook 10%

Midterm 10%

Final 15%

**7. Late Homework Policy**

Full credit will be given for homework turned in on the due date which will be announced in classes. Partial credit will be given for homework turned in after the due date, by using the equation: Partial\_Credit = Full\_Credit × (1 – X/96) where, X is the number of hours after the due date, and it will be rounded to the nearest integer. For example, 75% credit for 24 hours late. Zero credit will be given after 96 hours past due.

If you are sick or have a family emergency, no deduction will be taken for late homework if you inform me before the homework is due (if possible) and provide appropriate documentation (e.g., a doctor’s note) when you come back to class.

**8. Honor Code**

Students are expected to abide by the Honor Code:

https://doso.studentaffairs.miami.edu/units/undergraduate-honor-council/honor-code/

The immediate objective is " to protect the academic integrity of the University of Miami, to encourage consistent ethical behavior among undergraduate students, and to foster a climate of fair competition. " Although you are encouraged to study together, all of your homework and quizzes must be your own original work. Any violations will be reported to the Dean of Students Office.

**9. Calendar**

**Programming Basics**

Jan. 25 – Overview, basic data types

Feb. 1 - Variables, expressions, statements, function

Feb. 8 - Boolean, conditional execution, function

Feb. 15 - Loop, list, tuple, string, function

Feb. 22 - Dictionary, file IO, iteration vs recursion

Mar. 1 - Object oriented programming

Mar. 8 - More Object oriented Programming (Tentative Midterm)

Mar. 15 - SPRING RECESS // NO CLASS

**Data Science and Machine Learning**

Mar. 22 - Overview, data pre-processing and visualization

Mar. 29 - 1D signal processing and analysis

Apr. 5 - Image processing and analysis

Apr. 12 - Machine learning basics

Apr. 19 - Machine learning applications using scikit-learn

Apr. 26 - Machine learning applications using scikit-learn

Note: The distribution of the lectures and topics may be adjusted based on homework assignments and feedback from students.