Python Coding for Public Policy - Spring 2021

Instructor Information

- Aidan Feldman
- Email: alf9@nyu.edu
- Office Hours:
  - Tuesdays at 5:30pm Eastern Time (US)
  - By appointment

Course Information

- Course Number: PADM-GP 4506
- Class Meeting Times: Thursdays, 3/25-5/6 6:45-8:25pm Eastern Time (US)
- Class Location: Online (Zoom) — see the links on the Zoom tab in the NYU Classes site.
- Prerequisites: None

Description

This 7-week mini course exposes the students to the application and use of Python for data analytics in public policy setting. The course teaches introductory technical programming skills that allow students to learn Python and apply code on pertinent public policy data. The majority of the class content will utilize the New York City 311 Service Requests dataset. It's a rich dataset that can be explored from many angles relevant to real-world public policy and program management responsibilities.

Class will be split between:

- Lecture
- Demonstration
- Hands-on time to:
  - Play with the code from lectures
Homework assignments will consist of two different formats:

1. Online tutorials: In advance of classes, online tutorials will be assigned as homework. These online tutorials will introduce students to critical Python concepts. The following lecture will then focus on applying those concepts to real public policy data questions.

2. Data exploration, analysis, and visualization: Students will complete Python coding exercises that apply new concepts they have learned in lecture. Coding assignments will build off of concepts covered in previous assignments.

Learning Objectives

Students will learn how to:

- Use the Google Colaboratory environment
- Have an understanding of Python fundamentals
  - Common data types
  - Functions
  - How to read documentation
  - How to troubleshoot
- Know how to use several Python packages for different kinds of data analysis, manipulation, and visualization

Schedule

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Date</th>
<th>Topics</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3/25</td>
<td>Intro to coding</td>
<td>Survey due, HW0 assigned</td>
</tr>
<tr>
<td>1</td>
<td>4/1</td>
<td>Intro to Pandas</td>
<td>HW0 due, HW1 assigned</td>
</tr>
<tr>
<td>2</td>
<td>4/8</td>
<td>Manipulating and combining data</td>
<td>HW1 due, HW2 assigned</td>
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<tr>
<td>3</td>
<td>4/15</td>
<td>Data visualization</td>
<td>HW2 due, HW3 assigned</td>
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<tr>
<td>Lecture</td>
<td>Date</td>
<td>Topics</td>
<td>Homework</td>
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<tr>
<td>4</td>
<td>4/22</td>
<td>Working with dates and time series analysis</td>
<td>HW3 due, HW4 assigned</td>
</tr>
<tr>
<td>5</td>
<td>4/29</td>
<td>APIs</td>
<td>HW4 due, HW5 assigned</td>
</tr>
<tr>
<td>6</td>
<td>5/6</td>
<td>Guest lecture(s) and topic(s) of students' choice</td>
<td>HW5 due, HW6 assigned - due 5/13</td>
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</tbody>
</table>

**Communications**

- All announcements and assignments will be delivered through the [NYU Classes](#) site.
- Assignments, due dates, and other aspects of the course may be modified mid-course.
  - As much advance notice will be given as possible.
- Troubleshooting and other communications between class sessions will be through the [Forums in NYU Classes](#).
  - Email is also an option.
- The instructor will try to respond within 24 hours, 48 hours max.

**Assignments and Evaluation**

The Course Grade is based on the following:

- Participation: 10%
- 7 Assignments: 90%
  - HW0: 12.5%
  - HW1: 12.5%
  - HW2: 12.5%
  - HW3: 12.5%
  - HW4: 12.5%
  - HW5: 12.5%
  - HW6: 15%

**Assignments**

Assignments are due at [6:45pm Eastern Time (US)](#) (the start of class) on the day listed in the Schedule above.
• Late work: -0.5 points per day
• Syntax errors: -0.5 points

If the submission showed effort, feedback will be given, and the assignment can be resubmitted to improve the score. Requests for extensions will only be considered if made before the deadline.

**Participation**

Participation means:

• Asking a question
• Answering a question
• Volunteering to demonstrate
• Posting a useful/interesting resource

in one of the following:

• Class
• Office hours
• **The Forums in NYU Classes**
  • When starting a new Conversation, please use a descriptive Title to make them easier to navigate
  • Suggest turning on **Watch Forums** to get notifications

The following don't count towards the participation score:

• Homework revisions
• Communications about grades or other administrivia

The overall participation score is calculated based on how many classes / weeks between classes that the student does the above. In other words, getting a high participation score requires participation throughout the course.

**Letter Grades**

Letter grades for the entire course will be assigned as follows:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Points</th>
<th>Description</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>Letter Grade</td>
<td>Points</td>
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<td>Criteria</td>
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<tr>
<td>A</td>
<td>4.0</td>
<td>Excellent</td>
<td>Exceptional work for a graduate student. Work at this level is unusually thorough, well-reasoned, creative, methodologically sophisticated, and well written. Work is of exceptional, professional quality.</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td>Very good</td>
<td>Very strong work for a graduate student. Work at this level shows signs of creativity, is thorough and well-reasoned, indicates strong understanding of appropriate methodological or analytical approaches, and meets professional standards.</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td>Good</td>
<td>Sound work for a graduate student; well-reasoned and thorough, methodologically sound. This is the graduate student grade that indicates the student has fully accomplished the basic objectives of the course.</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>Adequate</td>
<td>Competent work for a graduate student even though some weaknesses are evident. Demonstrates competency in the key course objectives but shows some indication that understanding of some important issues is less than complete. Methodological or analytical approaches used are adequate but student has not been thorough or has shown other weaknesses or limitations.</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td>Borderline</td>
<td>Weak work for a graduate student; meets the minimal expectations for a graduate student in the course. Understanding of salient issues is somewhat incomplete. Methodological or analytical work performed in the course is minimally adequate. Overall performance, if consistent in graduate courses, would not suffice to sustain graduate status in &quot;good standing.&quot;</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td>Deficient</td>
<td>Inadequate work for a graduate student; does not meet the minimal expectations for a graduate student in the course. Work is inadequately developed or flawed by numerous errors and misunderstanding of important issues. Methodological or analytical work performed is weak and fails to demonstrate knowledge or technical competence expected of graduate students.</td>
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<tr>
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<td>Description</td>
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<tr>
<td>C</td>
<td>2.0 points</td>
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<tr>
<td>C-</td>
<td>1.7 points</td>
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<tr>
<td>F</td>
<td>0.0 points</td>
<td>Fail</td>
<td>Work fails to meet even minimal expectations for course credit for a graduate student. Performance has been consistently weak in methodology and understanding, with serious limits in many areas. Weaknesses or limits are pervasive.</td>
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</table>

**Class Policies**

A student may work with other students. However, solutions should not be identical to / copied-and-pasted from one another, and each student should submit their assignment separately. In addition, students need to indicate who they worked with with each submission.

All submissions must be made using a Google Colab Notebook file following these instructions.

Attendance is mandatory but most importantly, important. Learning programming requires commitment from the part of the student and the skills are built out of practice.

**Classroom Norms**

You are expected to participate in each class with your Zoom audio and video on. Please review Wagner's Zoom in the Classroom series about classroom etiquette, participation, and more. If you are unable to participate with video on, please contact me.

Students may not share the Zoom classroom recordings. The recordings are kept within the NYU Classes site and are for students enrolled in this course only.

**Academic Integrity**

Academic integrity is a vital component of Wagner and NYU. All students enrolled in this class are required to read and abide by Wagner's Academic Code. All Wagner students have already read and signed the Wagner Academic Oath. Plagiarism of any form will not be tolerated and students in this class are expected to report violations to me. If any student in this class is unsure about what is expected of you and how to abide by the academic code, you should consult with me.
NYU's Calendar Policy on Religious Holidays

NYU's Calendar Policy on Religious Holidays states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. Please notify me in advance of religious holidays that might coincide with exams to schedule mutually acceptable alternatives.

Accessibility

Academic accommodations are available for students with disabilities. Please visit the Moses Center for Student Accessibility website and click on the Reasonable Accommodations and How to Register tab or call or email CSD at (212-998-4980 or mosecsed@nyu.edu) for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

Technology Support

You have 24/7 support via NYU's IT services. Explore the NYU servicelink knowledgebase for troubleshooting and student guides (NYU Classes, Zoom, etc). Contact askIT@nyu.edu or 1-212-998-3333 (24/7) for technology assistance, or contact Zoom's 24/7 technical support (includes a chat function), or review Zoom's support resources. Your peers are another source of support, so you could ask a friend or classmate for help or tips.

If you do not have the appropriate hardware technology nor financial resources to purchase the technology, consider applying for the NYU Emergency Relief Grant.