1. **Course Objective**

Many problems in today's business require traditional and nontraditional forms of data analysis. In particular, rapid developments in data collection and storage technologies have led to big data sets and new questions;

- Amazon collects purchase histories and item ratings from millions of its users. How can it use these to predict which items users are likely to purchase and like?
- How does Netflix recommend movies to each of its users?

An expert's answer to these questions may contain enough material to fill its own course, but basic answers stem from data-driven analysis and computer programming is a fundamental tool to make data analytics possible. This course provides students with fundamental concepts of computer programming and hands-on experiences in Python.

Topics will include:

- **Python Basics**
- **Loops and Logic Control**
- **Strings and Text Files**
- **Data Structures in Python**
- **Functional Programming**
- **Object-oriented Programming**
- **NumPy, Pandas, Data Wrangling in Python**

The topics above will be taught with a focus on business analytics applications such as forecasting, text mining, and multi-dimensional data processing. The methodology will include lectures, in-class exercises, labs, and a term project.

2. **Materials Required**

- **Software**
  
  You will need to bring a laptop with Python installed to class.
* You can use the Anaconda or Canopy distributions of Python which makes installing packages quite easy. https://www.anaconda.com/products/individual.

- Texts
  * Other References:

3. **Zoom Meetings**
   Unless otherwise announced, we will be having Zoom meetings during our scheduled class times. Below is the link to the Zoom meeting.
   https://seattleu.zoom.us/j/99181700480?pwd=My9Takc2YUNxbFV6YUxNR29aVFh6UT09
   You can find Passcode and more information of the course zoom meetings on Canvas.

4. **Assessment**
   - Exams: 40 % (20% Exam1, 20 % Exam2)
   - Homework: 20 %
   - Group Project: 30%
   - Quiz: 10%

Exams are open book, but you should not consult anyone (your classmates, friends, family members,...) According to Settle University's Academic Integrity Policy (https://www.seattleu.edu/media/re service center/Registrar/Registrar-Policies/Academic-Integrity-2011-3.pdf), examples of cheating include:
   - Submitting work as ones own that has been substantially written by someone else
   - Copying another persons work during an examination
   - Allowing another person to copy ones work
   - Sharing test materials with someone else

5. **Grade**
   Final grades will be assigned based on the following rubric:
   - 95 to 100: A,  90 to 94 A(minus)
   - 85 to 89 : B+,  80 to 84 : B,  77 to 79 : B(minus)
   - 74 to 76 : C+,  70 to 73 : C,  67 to 69 : C(minus)
6. **Homework**
Through homework, students will get hands-on practice with the day’s materials by completing assigned programming activities. Tasks may include, but are not limited to: running or modifying code from the lecture, pair coding, or completing short coding exercises. You are allowed to discuss homework problems with your fellow students. However, the work you submit must be your own. You must acknowledge in your submission any significant help received on your assignments. That is, you must include a comment in your homework submission that clearly states the name of the student, book, or online reference from which you received assistance.

7. **Project**
Through the project, you will gain experience in developing analytical solutions in Python. This project is an integral part of the course, since it allows students to apply the concepts, methodologies, and tools in the context of a real-world application. You will be provided with real-world data sets and expected to write a code to implement several forecasting methods using Python and to present the results. More details about the group project will be announced in class.

8. **Non-Disclosure Agreement**
Data, codes, and lecture materials, including assignments, projects, lecture notes, and others, should not be shared with any person or organization outside of class. Students or anybody need to obtain an explicit permission from the faculty member for any use outside of class, including posting them on GitHub or anywhere else.

9. **Course Policy**
- If you miss a test due to health issues for self or family and work-related emergency, you will need to provide appropriate documentation.
- All assignments are to be turned in through Canvas.

10. **Regrading**
Regrade requests must be made in writing and attached to the exam. The request must include a description of your objection and why you think your exam should have been graded differently. If a test is submitted for regrading, I will regrade the entire test- so it is possible to either gain or lose points. This policy does not apply to arithmetic errors.

11. **Disability**
If you have, or think you may have, a disability (including an invisible disability such as a learning disability, a chronic health problem, or a mental health condition) that interferes with
your performance as a student in this class, you are encouraged to arrange support services
and/or accommodations through Disabilities Services staff located in Loyola 100, (206) 296-
5740. Disability-based adjustments to course expectations can be arranged only through this
process.

12. **Notice Regarding Religious Accommodations**

It is the policy of Seattle University to reasonably accommodate students who, due to the
observance of religious holidays, expect to be absent or endure a significant hardship during
certain days of their academic course or program. Please see, Policy on Religious
Accommodations for Students (https://www.seattleu.edu/media/policies/Policy-on-
ReligiousAccommodations-for-Students—FINAL.PDF).

13. **Honor Code**

Seattle University is committed to the principle that academic honesty and integrity are
important values in the educational process. Academic dishonesty in any form is a serious
offense against the academic community. Acts of academic dishonesty will be addressed
according to the Seattle University Academic integrity Policy.

Academic Policies on Registrar website (https://www.seattleu.edu/redhawk-
axis/academicpolicies/)

- Academic Integrity Policy
- Academic Grading Grievance Policy
- Professional Conduct Policy (only for those professional programs to which it applies)

If you are not sure whether a particular action is acceptable according to the Academic Integrity
Policy, you should check with your instructor before engaging in it.

14. **Office of Institutional Equity**

Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex
in educational programs or activities that receive Federal financial assistance. This prohibition
includes sexual misconduct, which encompasses sexual harassment and sexual violence. Seattle
U remains committed to providing a safe and equitable learning, living, and working
environment. Seattle U offers emergency, medical, and other support resources, as well as
assistance with safety and support measures, to community members who have experienced
or been impacted by sexual misconduct.

Seattle U requires all faculty and staff to notify the University's Title IX Coordinator if they
become aware of any incident of sexual misconduct experienced by a student. For more
information, please visit https://www.seattleu.edu/equity/. If you have any questions or
concerns, you may also directly contact the Title IX Coordinator in the Office of Institutional
Equity (email: oie@seattleu.edu; phone: 206.296.2824) University Resources and Policies.
15. **Academic Resources**
   - Library and Learning Commons (http://www.seattleu.edu/learningcommons/) (This includes: Learning Assistance Programs, Research [Library] Services, Writing Center, Math Lab)
   - Academic Integrity Tutorial (found on Canvas and S. U. Online)

16. **Tentative Course Schedule (Attached Below)**
16. **Tentative Course Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignment</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Sep 10th)</td>
<td>Course overview &amp; Python Basics</td>
<td></td>
<td>Chapter 2 &amp; 3</td>
</tr>
<tr>
<td>2 (Sep 17th)</td>
<td>String, Text File</td>
<td></td>
<td>Chapter 4</td>
</tr>
<tr>
<td>3 (Sep 24th)</td>
<td>Data Structures in Python</td>
<td></td>
<td>Chapter 5</td>
</tr>
<tr>
<td>4 (Oct 1st)</td>
<td>Functions</td>
<td></td>
<td>Chapter 6</td>
</tr>
<tr>
<td>5 (Oct 8th)</td>
<td>Exam</td>
<td>Exam 1</td>
<td></td>
</tr>
<tr>
<td>6 (Oct 15th)</td>
<td>NumPy</td>
<td></td>
<td>Lecture Note</td>
</tr>
<tr>
<td>7 (Oct 22nd)</td>
<td>Pandas</td>
<td></td>
<td>Lecture Note</td>
</tr>
<tr>
<td>8 (Oct 29th)</td>
<td>Object-oriented Programming</td>
<td></td>
<td>Chapter 9</td>
</tr>
<tr>
<td>9 (Nov 5th)</td>
<td>Database and Python</td>
<td></td>
<td>Lecture Note</td>
</tr>
<tr>
<td>10 (Nov 12th)</td>
<td>One-on-one Meeting</td>
<td>Project</td>
<td></td>
</tr>
<tr>
<td>11 (Nov 19th)</td>
<td>Exam</td>
<td>Exam 2</td>
<td></td>
</tr>
</tbody>
</table>

Course schedule is subject to change without announcement.