

BUAN 5201 Programming for Business Analytics Fall 2020

Professor: Dr. Misuk Lee
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Class Meetings: Thursdays, from 6:00 PM to 8:40 PM, on Zoom
Office Hours: By appointment. You can sign up for an appointment on Canvas.
Website: All assignments and class materials will be posted on Canvas.

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

* Kenneth A. Lambert, Fundamentals of Python: First Programs, 2nd edition, ISBN13: 978-1337560092, ISBN-10: 9781337560092 * Other References:

- Eric Matthes, Python Crash Course: A Hands-On, Project-Based Introduction to Programming, ISBN-13: 978-1593276034, ISBN-10: 1593276036
- Wes McKinney, Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython, O'Reilly Media, ISBN-10: 1449319793, ISBN-13: 978-1449319793

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)

- 64 to 66 : D+, 60 to 63 : D, 50 to 59 : D(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: oi@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

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

Course schedule is subject to change without announcement.