

# BUAN 4210

## Programming and Data Management for Business Analytics

### Course Syllabus

Winter 2021

#### Course Information

<b>Course Code</b>	BUAN 4210
<b>Credits</b>	5
<b>Class Times</b>	T, TH 10:15 AM - 12:20 PM
<b>Location</b>	PIGT 102

#### Instructor Information

<b>Professor</b>	Eric Lloyd
<b>Email</b>	<a href="mailto:elloyd@seattleu.edu">elloyd@seattleu.edu</a>
<b>Office</b>	PIGT 409
<b>Office Hours</b>	Wednesday 9-10 AM (this will be in-person and virtual, see details )

#### Course Description:

This course is an introduction to SQL and Python with real examples. It introduces the modern concepts of application programming for business analytics, including expressions, data types, control structures, functional abstraction, file management, data analytics and data management.

In this course, we are going to write SQL queries and Python code. The focus of the course will be to become familiar with the concept of programming for data analytics. Class will include small lectures followed by in-class individual/group exercises and practice. The class will be divided into two parts: the first will be learning SQL then after the midterm we will learn Python. At the very end, we will look at how similar and difference Python is to R. Each student will be responsible for two projects.

#### Course Model:

The model for this course is one using a combination of lecture, discussion and dialog, in-class labs, projects, and a midterm and final. You will be expected to attend all classes and submit

coursework on time as there is a lot to cover and not a lot of room for late work or absences. Emphasis will be on active learning which requires student preparation and active participation in class discussions. There will also be an optional Saturday Code Jam, which will be an online Zoom session that will be held almost every Saturday at 10 am PST (unless otherwise specified).

## Recommended Textbooks

*No textbooks are required for this class. All material necessary to pass will be given in the form of Powerpoints, handouts and links to web content. However, these books are recommended to provide further clarification if the student chooses:*

- Python Programming: A Smart Approach for Absolute Beginners by Steve M. Mason
  - ISBN-10: 1075705576
  - ISBN-13: 978-1075705571
  - [Amazon link](#)
- Database Processing: Fundamentals, Design and Implementation, 14E by David M. Kroenke and David Auer
  - ISBN-13: 978-1292107639
  - [Amazon link](#)
- Python for Data Analysis: Data Wrangling with Pandas, NumPy and IPython by Wes McKinney
  - ISBN-10: 1491957662
  - ISBN-13: 978-1491957660
  - [Amazon link](#)
- Please note this book won't be found in the school bookstore. If you want it, get it from Amazon or elsewhere.

## Assignments & Exams:

- **Reflection:**

These assignments will be a reflection of the previous week's content and what stuck out to you as important, how you think it may change how you view things and any general reflection around the content. Please try to limit using this assignment as a place to complain. You are free to send any complaints to me in an email or in person.

- Reflections will be available the Friday of the week the class is taught and due on Sunday two days later.

- **Labs:**

Each day in class (except the first one), after the lecture and questions, you will work on a lab that allows you practice what you learned in the class.

- These labs will be due the Sunday of the week at midnight.

- **Projects:**

There will be two large projects over the quarter: one for SQL and one for Python. They will be revealed at least a month before they are due and you are expected to start working on them as you learn more. You will need to use some of the material we go over AFTER the project is released so be prepared for this. You are expected to be a proactive student and look ahead to the material forthcoming, doing some independent learning before the topic is discussed.

- **Exams:**

There will be a midterm and a final exam. They will be short in length and usually consist of some multiple-choice or short answer questions along with some programming questions. We will take these exams online in Canvas, but they will not be available until the class time specified for them and will close once class ends. I will discuss this further in class.

- **Extra Credit In-Class Game:**

Before the midterm and before the final exam, we will play an in-class competitive game that could net you some extra credit on your exams.

- **Saturday Code Jam:**

Completely optional online session of coding on Saturdays at 10 AM. I will be walking through some of the code that was presented that week, taking questions and generally helping those who want help. **Note: Saturday Code Jam will happen all Saturdays EXCEPT: Jan 16, Feb 20, and March 20.**

- **Mini-Hackathon:**

Time providing, we will have one day when we will hold an in-class Mini-Hackathon. This will consist of students breaking up into teams and working on a series of Python programming questions in a competitive fashion.

## Course Policies:

- **Late Work**

- Please do your best to get assignments submitted on time. There are different guidelines depending on the assignment:

- Projects and Reflections:
  - There will be a 48-hour grace period after an assignment is due to receive reduced credit for a submission.
  - If the assignment is submitted within **24 hours** of the due date/time, it will receive –10% to its grade.
  - If the assignment is submitted within **24-48 hours** of the due date/time, it will receive –25% to its grade.
  - If the assignment is submitted after 48 hours of the due date/time, it will receive –100% to its grade. Most of the time, submit buttons won't be available for assignments during this period so it won't matter.
  
- **Contacting me**
  - Email: [elloyd@seattleu.edu](mailto:elloyd@seattleu.edu)
    - I will answer emails usually within a few hours of them being sent depending on the time it is sent and the circumstances. I work hard to be attentive to my communication with my students.
  - Commenting on Canvas Assignments
    - I will do grading once or twice per week so I will only see your comments when I grade. If its urgent to get my attention sooner, please email me.
  - Voice chat outside of class
    - If you need to have a voice conversation out of class, let me know and I will send a Zoom online meeting invite to you. Policy forbids us from providing our cell phone numbers.
  
- **Academic Honesty Policy:**

I expect all students to submit only the original work they have created.

- ***Original means:***
  - ***Not copied from another student.***
  - ***Not copied word for word from the Internet.***

- **Cheating Consequences:**

As per the policies of the University, any student caught cheating is required to receive a zero on the assignment and will be reported to the Department Chair and the Associate Dean, Madhu Rao.

- **Attendance:**

In this new virtual classroom setting we have to deal with, attendance can be tricky. I do not have a formal attendance policy but not attending the synchronous sessions will make the class much more difficult. Of course, I understand some students are international now and cannot attend synchronous classes. Please reach out to me if that is the case. Each class will be recorded and the video posted on Zoom.

- **Snow Day Guidelines:**

Here are some guidelines to keep in mind for days when you cannot get to class because of "too much snow".

- All assignments and due dates will remain the same for students who miss class, unless otherwise announced.
- Missing a classroom day because of "too much snow" will not count against your unexcused absences BUT you will need to contact me via email and let me know your situation otherwise it WILL count as an unexcused absence. (Unless it's a campus closure - see below)
- In the event of an official campus closure:
  - Obviously, your absence will not count as a unexcused absence.
  - I will be recording class and posting it on campus BY the time that the class happens normally. You will be expected to watch the recording and complete coursework accordingly.
  - All assignments and due dates will remain the same for students who miss class, unless otherwise announced.
  - In the event that you lose power or internet connectivity, please email me if you can and let me know and accommodations will be made. If you are unable to email, please see me or email me as soon as you can about the situation past and we will handle it as a per-needed basis.
- Any updates to these policies will be done via Announcements on Canvas as a per needed basis.

## Assignment Grades by Percentage

Assignment	Percentage
Reflections	5%
Labs	15%
Projects	45%
Midterm/Final Exam	35%

## Course Outline

(subject to change if necessary)

Week #	Class #	Date	Topics	Items Revealed, Due
1	1	1/5	Introduction to Data	
1	2	1/7	SQL Basics 1	SQL Lab 1
2	3	1/12	SQL Basics 2	<ul style="list-style-type: none"><li>• SQL Lab 2</li><li>• <b>Excelsior Mobile Project Reveal</b></li></ul>
2	4	1/14	SQL Data Manipulation	SQL Lab 3
3	5	1/19	SQL Functions	-SQL Lab 4
3	6	1/21	SQL Subqueries	SQL Lab 5
4	7	1/26	SQL Joins	SQL Lab 6
4	8	1/28	Midterm Exam Review Game	-

<b>Week #</b>	<b>Class #</b>	<b>Date</b>	<b>Topics</b>	<b>Items Revealed, Due</b>
5	9	2/2	<b>Midterm Exam</b>	-
5	10	2/4	Python Basics	Python Lab 1
6	11	2/9	Python Decision Structures, Loops and Functions	<ul style="list-style-type: none"> <li>• <b>Excelsior Mobile Project Due</b></li> <li>• Python Lab 2</li> </ul>
6	12	2/11	Python Basic Data Structures	<ul style="list-style-type: none"> <li>• Python Lab 3</li> <li>• <b>Marvel Mart Project Reveal</b></li> </ul>
7	13	2/16	Python Lists & Dictionaries	Python Lab 4
7	14	2/18	Python File Processing	Python Lab 5
8	15	2/23	Python Data Analytics	Python Lab 6
8	1	2/25	Python Data Visualization	Python Lab 7
9	17	3/2	Exploratory Data Analysis & Data Prep	
9	18	3/4	Python vs. R	Python Lab 8
10	19	3/9	Mini-Hackathon	
10	20	3/11	Final Exam Review	<b>Marvel Mart Project Due (3/11)</b>

Week #	Class #	Date	Topics	Items Revealed, Due
11	21	3/16	<b>Final Exam</b>	

## Deadlines

Week #	Date	Assignment
2	1/10	<ul style="list-style-type: none"> <li>• SQL Lab 1: SQL Basics 1</li> <li>• Reflection Week 1</li> </ul>
3	1/17	<ul style="list-style-type: none"> <li>• SQL Lab 2: SQL Basics 2</li> <li>• SQL Lab 3: Data Manipulation <ul style="list-style-type: none"> <li>• Reflection Week</li> </ul> </li> </ul>
4	1/24	<ul style="list-style-type: none"> <li>• SQL Lab 4: Functions</li> <li>• SQL Lab 5: Subqueries</li> <li>• Reflection Week 3</li> </ul>
5	1/31	<ul style="list-style-type: none"> <li>• SQL Lab 6: Joins</li> <li>• Reflection Week 4</li> </ul>
6	2/7	<ul style="list-style-type: none"> <li>• Python Lab 1: Python Basics 1</li> <li>• <b>Excelsior Mobile Project</b></li> <li>• Reflection Week 5</li> </ul>
7	2/14	<ul style="list-style-type: none"> <li>• Python Lab 2: Decision Structures</li> <li>• Python Lab 3: Basic Data Structures <ul style="list-style-type: none"> <li>• Reflection Week 6</li> </ul> </li> </ul>
8	2/21	<ul style="list-style-type: none"> <li>• Python Lab 4: Lists &amp; Dictionaries</li> <li>• Python Lab 5: File Processing <ul style="list-style-type: none"> <li>• Reflection Week 7</li> </ul> </li> </ul>
9	2/28	<ul style="list-style-type: none"> <li>• Python Lab 6: Data Analysis &amp; Visualization <ul style="list-style-type: none"> <li>• Reflection Week 8</li> </ul> </li> </ul>

<b>Week #</b>	<b>Date</b>	<b>Assignment</b>
10	3/7	<ul style="list-style-type: none"> <li>• Python Lab 7: Python &amp; SQL <ul style="list-style-type: none"> <li>• Reflection Week 9</li> </ul> </li> </ul>
11	3/14	<ul style="list-style-type: none"> <li>• <b>Marvel Mart Project</b></li> </ul>

### Academic Grade Percentages:

Final grades will be based on the following rubric (grades will be rounded. Anything above x.4 will be rounded up)

<b>Percentage Range</b>	<b>Letter Grade</b>
<b>95% - 100%</b>	<b>A</b>
<b>94% - 90%</b>	<b>A-</b>
<b>87% - 89%</b>	<b>B+</b>
<b>84% - 86%</b>	<b>B</b>
<b>80% - 83%</b>	<b>B-</b>
<b>77% - 79%</b>	<b>C+</b>
<b>74% - 76%</b>	<b>C</b>
<b>70% - 73%</b>	<b>C-</b>
<b>67% - 69%</b>	<b>D+</b>
<b>64% - 66%</b>	<b>D</b>
<b>60 - 63%</b>	<b>D-</b>
<b>&lt; 60%</b>	<b>F</b>

### 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 SU Online)

### Academic Policies on Registrar website

<https://www.seattleu.edu/redhawk-axis/academic-policies/>)

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

### **Notice for students concerning Disabilities**

**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.

### **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-Religious-Accommodations-for-Students---FINAL.PDF>).

### **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:** [oiie@seattleu.edu](mailto:oiie@seattleu.edu); **phone:** 206.296.2824) University Resources and Policies