

### COURSE INFORMATION

Course title:	Business Analytics Programming		
Course code:	BAIT 508	Credits:	1.5
Session, term, period:	2019W1, Period 1	Class location:	HA 337
Section(s):	BA1	Class times:	Mon/Wed 2pm-4pm
Course duration:	Sep 03 to Oct 12, 2019	Pre-requisites:	n/a
Division:	Accounting and Information Systems	Co-requisites:	n/a
Program:	MBAN		

### INSTRUCTOR INFORMATION

Instructor:	Gene Moo Lee, Ph.D.		
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Teaching assistant:	Myunghwan Lee		
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### COURSE DESCRIPTION

BAIT 508 is an introduction to programming with an emphasis on the concepts and techniques most relevant to business analytics, particularly the analysis of large unstructured datasets. The unstructured nature of data makes it particularly challenging for companies to systematically collect, cleanse, manage, and analyze the data. The aim of this course is to acquaint students with Python programming language and its rich ecosystem for data processing, data visualization, and text analytics.

### COURSE FORMAT

Class time will be used for a combination of lectures, discussion, and solving sample programming problems. Attendance is expected to accomplish the learning objectives below. Lectures and discussions will assume that students having pre-read the corresponding materials as listed in the course schedule.

### LEARNING OBJECTIVES

By the end of this course, students will be able to:

1. Have working knowledge on Python data structures and program execution controls
2. Programmatically access data from flat files and APIs
3. Have working knowledge on basic data visualization and text analytics in Python
4. Describe concepts on data science management

### LEARNING MATERIALS

1. Slides and codes: [Dropbox link for slides, codes, and data](#)
2. Technology requirements: Laptop with Python 3 environment (e.g., [Anaconda](#), [Google Colab](#))
3. [Canvas](#): course management, announcement, assignments, grade posting
4. [DataCamp](#): online learning and assignments
5. [Piazza](#): online discussion forum (Let's not use email for Q&A)
6. Recommended books (but not required): [Introduction to Computing using Python](#), [Python for Data Analysis](#), [Data Science from Scratch](#)

## ASSESSMENTS

### Summary

<u>Component</u>	<u>Weight</u>
Programming Assignments	30%
DataCamp Assignments	15%
Exam	40%
Class Participation	15%
Total	<u>100%</u>

### Details of Assessments

#### Programming Assignments (30% = 15% x 2 assignments)

You will be given 2 sets of Python programming assignments, which should be conducted individually. All the works should be submitted electronically via UBC Canvas (not email attachment) by the due date and time specified in Canvas. Late submission will receive a score of zero (no exceptions). I take code plagiarism issues very seriously. Please refer to the details in the Academic Integrity section below.

#### DataCamp Assignments (15% = 5% x 3 assignments)

Learning programming requires a lot of hands-on practices. To provide a rich practice environment, the course will use [DataCamp](#), which is an online learning platform for data science. You will be assigned 3 DataCamp courses as assignments: (i) [Introduction to Python](#), (ii) [Intermediate Python for Data Science](#), and (iii) [Data Science for Managers](#).

#### Exam (40%)

There will be one written exam at the end of the course. You are responsible for everything that is covered in the classroom, including additional materials discussed in class. The exam will consist of multiple-choice questions and programming questions. The exams will be in closed books and notes, but a Python reference sheet will be provided before and during the exam. Students are expected to write codes based on the specifications.

#### Class Participation (15%)

We all bring experience and knowledge into the classroom, and all class participants should share this and benefit by it. Effective class participation includes: (1) solving programming questions during the lecture, (2) asking significant questions about concepts, (3) sharing your experience or point of view with the class, (4) building on points raised by others, (5) clarifying issues.

The participation can be either in lecture or in Piazza (the online Q&A platform the class will use). Piazza allows students to post questions (publicly, anonymously, and privately) and to answer questions from the peers. Providing thorough and clear answers and ideas on the Piazza discussion board will be considered when calculating your participation grade. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email [team@piazza.com](mailto:team@piazza.com).

Find our class page at: <https://piazza.com/ubc.ca/winterterm12019/bait508/home>

## COURSE-SPECIFIC POLICIES AND RESOURCES

### *Missed or late assignments, and regrading of assessments*

Late submissions will not be accepted and will receive a grade of zero.

### *Academic Concessions*

If extenuating circumstances arise, please contact the RHL Graduate School program office as early as reasonably possible, and submit an [Academic Concession Request & Declaration Form](#) <https://webforms.sauder.ubc.ca/academic-concession-rhlee>. If an academic concession is granted during the course, the student will be provided options by RHL, or by the instructor in consultation with RHL, per [UBC's policy on Academic Concession](#).

### *Communication and feedbacks*

1. For course related communication, please use Piazza (no emails!). For general questions that apply to the whole class, you can use create a public Piazza post publicly or anonymously (in this case other students do not know your identity). For private questions that only apply to yourself, you can create a private post in Piazza, which only instructors can see.
2. TA and instructor will try the best to respond to your questions within one business day. Please note that business day does not include weekends and holidays.

## POLICIES APPLICABLE TO COURSES IN THE ROBERT H. LEE GRADUATE SCHOOL

### *Attendance*

Excepting extenuating circumstances, students are expected to attend 100% of their scheduled class hours. Absent students limit their own academic potential, and that of their classmates, and cause unnecessary disruption to the learning environment. Students missing more than 20% of the total scheduled class hours for a course (including classes held during the add/drop period) without having received an academic concession will be withdrawn from that course. Withdrawals, depending on timing, could result in a "W" or an "F" standing on the transcript.

### *Punctuality*

Students are expected to arrive for classes and activities on time and fully prepared to engage. Late arrivals may be refused entry at the discretion of the instructor or activity lead. Students arriving later than halfway through a scheduled class will be treated as absent for that class.

### *Electronic Devices*

Devices such as laptops, tablets, and cell phones are not permitted to be used in class unless directed by the instructor for in-class activities. Students who do not follow the School's policy in this regard may be required to leave the room for the remainder of the class, so that they do not distract others. However, as this is a programming course, I encourage students to bring their laptops or tablets to follow the course. However, please limit the usage to the course related activities. Cellphones are not permitted.

### *Citation Style*

Please use the American Psychological Association (APA) reference style to cite your sources.

Details of the above policies and other RHL Policies are available at:

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,199,506,1625>

## UNIVERSITY POLICIES AND RESOURCES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.

UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available on the UBC Senate website at <https://senate.ubc.ca/policies-resources-support-student-success>.

### *Academic Integrity*

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work.

Specifically, this course has programming assignments. In the world of Internet, it can be tempting to copy and paste the codes. But I take code plagiarism issues very seriously. It is allowed to discuss high-level ideas with classmates. However, copying code or data (either fully or partially) is considered as academic dishonesty. If you use open source codes in the assignments, you should put an appropriate reference to it and respect the appropriate software license (e.g., GPL, MIT, Apache, etc.). If you are not sure about the boundary, please contact the instructor.

Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

### **COPYRIGHT**

All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline. Audio or video recording of classes are not permitted without the prior approval of the Instructor.

### **ACKNOWLEDGEMENT**

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓əm (Musqueam) people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.

**COURSE SCHEDULE**

(Subject to change with class consultation)

Class	Date	Topic	Readings or Activities	Assessments Due*
0 (opening week)	8/29 (Thu)	Hello Python Lists	Slides and codes in Dropbox	
1	9/04 (Wed)	Course introduction Functions, methods, packages		DA#1, #2, #3 open
2	9/06 (Fri)	Numpy arrays Data Visualization with Matplotlib		
3	9/09 (Mon)	Dictionaries, Pandas dataframes Logic, control flow, filtering		DA#1 due 9/10
4	9/11 (Wed)	For/While Loops Loop patterns, more control flows		
5	9/16 (Mon)	User-defined functions Mid-review & exercises		DA#2 due 9/17
6	9/18 (Wed)	Pandas foundations Exploratory data analysis		PA#1 open
7	9/23 (Mon)	Import data from flat files Import data from web and API		
8	9/25 (Wed)	Word cloud, sentiment analysis TF-IDF, named entity recognition		PA#1 due 9/27 PA#2 open
9	9/30 (Mon)	Data science concepts (Data collection, analysis, prediction)		
10	10/02 (Wed)	Final Review		PA#2 due 10/4
Final Exam	TBD (10/7-10/11)	Paper-based Final Exam (Multiple choices, programming)	Reference sheet	DA#3 due 10/6

\* DA: DataCamp Assignment, PA: Programming Assignment