

HACOURSE INFORMATION

Course title:	Fundamentals of Analytics & Technology	Credits:	1.5
Course code:	BA 515	Class location:	HA 113
Session, term, period:	Class of 2023, Period 1	Class times:	T/Th 10am-12pm (DD1)
Section(s):	DD1/DD2		T/Th 2pm-4pm (DD2)
Course duration:	Sep 11 to Oct 13, 2023	Pre-requisites:	n/a
Division:	ALS (Information Systems)	Co-requisites:	n/a
Program:	Systems) MM Classic		

INSTRUCTOR INFORMATION

Instructor:	Nader Beyzaei	Office location:	Online
Phone:	N/A	Office hours:	Online
Email:	nader.beyzaei@ubc.ca		

Teaching assistants:	TBA
Office hours/location:	See Canvas for time and links
Contact:	See Canvas for time and links

COURSE DESCRIPTION

BA 515 is an introduction to business analytics and technology. There are two goals: First, we introduce the fundamental concepts of analytics and technology platforms (e.g., big data, mobile, AI, machine learning) and their implications to the economy. Second, we provide hands-on programming experiences 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, live programming, and discussions. 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. Understand the concepts of data analytics and the implications to business
2. Understand the technology platforms and their implications to business
3. Get hands-on experiences on Python programming
4. Have working knowledge on basic data visualization and text analytics in Python

LEARNING MATERIALS

1. Slides and code: See Canvas for links
2. Technology requirements: Laptop with Python 3 environment (e.g., [Anaconda](#), UBC Jupyter)
3. Canvas: course management, announcement, assignments, grade posting
4. Datacamp: online learning and assignments (**free access** will be provided by instructor)
5. Online discussion forum (Let's not use email for Q&A)
6. Class Reading list: [link](#)

ASSESSMENTS

Summary

<u>Component</u>	<u>Weight</u>
DataCamp Assignments (2)	20%
Group Project	30%
Exam	35%
Class Participation	15%
<u>Total</u>	<u>100%</u>

Details of Assessments

DataCamp Assignments (20% = 10% x 2 assignments)

Learning programming requires a lot of hands-on practices. To provide a rich practice environment, you will be provided a free, unlimited access to [DataCamp](#) for 6 months. You will be assigned to complete two courses: (i) [Introduction to Data Science in Python](#) and (ii) [Data Science for Business](#). You are free to explore other DataCamp courses outside this class.

Group Project (30%)

There will be one group project on social media analysis. Details, including submission guidelines, will be posted on Canvas. The class will be divided into groups of three or four within the same section. You are free to choose your own group. We may use iPeer to conduct peer-reviews, which results can be used to give differential marks for individuals. Please consult with the instructor team on any group related issues.

Exam (35%)

There will be an open-book final exam at the end of the course. You are required to bring their laptops with appropriate programming environment. The exam will consist of multiple-choice questions, covering both conceptual materials and hands-on programming. You are responsible for everything that is covered in the classroom, including additional materials discussed in class. For some questions, students are expected to write codes based on the specifications.

Class Participation (15%)

Effective class participation includes: (1) solving programming questions during the lecture, (2) asking significant questions, (3) sharing your point of view with the class, and (4) building on points raised by others. The participation can be either in lecture or Online (the online Q&A platform the class will use). Note that office hour visits are not counted as course participation. 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 Online discussion board will be considered when calculating your participation grade. We will consider both quantity and quality of the class participation. Instructor team does not accept course-related questions via emails, so please post your questions Online.

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](#). 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 ask Online (no emails!). For general questions that apply to the whole class, you can message 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 message Online directly to the instructors.
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.

Code Plagiarism

Code plagiarism falls under the UBC policy for [Academic Misconduct](#). Students must correctly cite any code that has been authored by someone else or by the student themselves for other assignments.

Cases of "reuse" may include, but are not limited to:

- a. the reproduction (copying and pasting) of code with none or minimal reformatting (e.g., changing the name of the variables)
- b. the translation of an algorithm or a script from a language to another
- c. the generation of code by automatic code-generations software

An "adequate acknowledgement" requires a detailed identification of the (parts of the) code reused and a full citation of the original source code that has been reused.

Students are responsible for ensuring that any work submitted does not constitute plagiarism. Students who are in any doubt as to what constitutes plagiarism should consult their instructor before handing in any assignments.

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.

COVID-19 Policies for Attendance & Academic Concessions:

If a student feels unwell, they should stay home and send a courtesy email to each impacted instructor and cc their program manager. The student should also submit an [Academic Concession Request & Declaration Form](#).

If a student suspects possible COVID-19 infection, they should use the BC Ministry of Health's [self-assessment tool](#), to help determine whether further assessment or testing for COVID-19 is recommended.

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

This is a programming course, and I encourage students to use their laptops or tablets to follow the course. However, please limit the usage to the course related activities. Cellphones are not permitted.

During lectures, students are not permitted to use any electronic devices other than the primary one used for attending the online lecture (e.g., laptop or tablet). Please refrain from using your device unless an instructor advises the use of another program/website for an in-class activity. Feedback from students indicates that personal devices are the number one distraction from effective learning and participation in our learning environment.

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>.

Respect for Equity, Diversity, and Inclusion

The UBC Sauder School of Business strives to promote an intellectual community that is enhanced by diversity along various dimensions including status as a First Nation, Metis, Inuit, or Indigenous person, race, ethnicity, gender identity, sexual orientation, religion, political beliefs, social class, and/or disability. It is critical that students from diverse backgrounds and perspectives be valued in and well-served by their courses. Furthermore, the diversity that students bring to the classroom should be viewed as a resource, benefit, and source of strength for your learning experience. It is expected that all students and members of our community conduct themselves with empathy and respect for others.

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. 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 (e.g., URL) 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 and could be subject to legal action. Any lecture recordings are for the sole use of the instructor and students enrolled in the class. In no case may the lecture recording or part of the recording be used by students for any other purpose, either personal or commercial. Further, audio or video recording of classes are not permitted without the prior consent of the instructor. Students may not share class Zoom links or invite others who are not registered to view sessions.

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)

Week	Class	Date	Topics*	Readings	Assignments**
1	1	09/12	[Course Introduction] Hello Python	Class reading	DA#1, #2 open
	2	09/14	Data type: list Functions, modules, packages		
2	3	09/19	[Business Analytics] Data visualization with <code>matplotlib</code>	Class reading	
	4	09/21	Logic, control flow, and filtering <code>for</code> and <code>while</code> loops basics		DA#1 due (09/21)
3	5	09/26	[Algorithms & Computing Platforms] <code>pandas</code> dataframes	Class reading	
	6	09/28	Exploratory data analysis Exercise: Twitter data		DA#2 due (09/28)
4	7	10/03	Text preprocessing, Word cloud Sentiment analysis		Project open (10/02)
	8	10/05	[The Internet] Web Scraping		
5	9	10/10	[Data Science Management] [AI in Business and Society]	Class reading	
	10	10/12	Final review		Group project due (10/13)
Exam Week			Final Exam	TBD by RHL	

* Topics in [] will be covered in lectures/discussions and others will be hands-on programming sessions

** DA: DataCamp Assignment