

COURSE INFORMATION

Course title:	Fundamentals of Analytics & Tech		
Course code:	BA 515	Credits:	1.5
Cohort:	Class of 2025	Class location:	HA 337
Section(s):	300	Class times:	8:30 am – 4:00 pm
Course duration:	June 11, June 25, July 16	Pre-requisites:	n/a
Division:	AIS (Information Systems)	Co-requisites:	n/a
Program:	PMBA		

INSTRUCTOR INFORMATION

Instructor:	Adam Saunders, Ph.D.	Office location:	Zoom link (available on Canvas)
Phone:	604.822.9956	Office hours:	Available on Canvas
Email:	adam.saunders@ubc.ca		

Teaching assistants: TBA
Office hours/location: By appointment

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, AI, machine learning) and their implications to the economy. Second, we provide hands-on programming experiences to acquaint students with R and its rich ecosystem for data processing.

COURSE FORMAT

Class time will be used for a combination of live lectures, discussions, and hand-on programming. Lectures and discussions will assume that students have read the materials before class.

LEARNING OBJECTIVES

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

1. Explain how firms are using digitization, automation, data and analytics in order to make better decisions and be more competitive.
2. How to create and manage business processes that allow humans to augment technology (or technology to augment human labour);
3. Through hands-on experience with R programming, have working knowledge on the basics of managing and analyzing data sets.

ASSESSMENTS

Summary

<u>Component</u>	<u>Weight</u>
Participation (iClicker Questions)	15%
In-Class Exercises	25%
Final Writeup	20%
Final Exam	40%
Total	<u>100%</u>

Details of Assessments

Participation **15%**

- Multiple-choice iClicker questions will be given in class.
- Although students will receive partial marks for merely attempting the questions, full marks will be awarded for answering the questions correctly.
- Students may also receive participation marks for asking significant questions of the course instructor, sharing their point of view with the class, building on points raised by others, and/or answering questions posed by the course instructor.

In-class Exercises (ICEs) **25%**

- Students can work individually or in groups of any size. If you work in groups, you must still submit your own responses on Canvas.
- The lowest ICE will be dropped from the calculation of a student's grade (best 5 out of 6 count).

Final Writeup **20%**

- A two to three-page writeup based on the course readings is due by July 22nd at 11:59pm.
- The details and guidelines of the writeup can be found on Canvas.

Final 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 be open book and notes.
- The exam is scheduled for Sunday, July 30th at 10am.

LEARNING MATERIALS

Required Reading Materials: *Only Humans Need Apply: Winners and Losers in the Age of Smart Machines* (Thomas H. Davenport and Julia Kirby; 2016, HarperBusiness). Note: any edition is fine.

Machine, Platform, Crowd: Harnessing Our Digital Future (Andrew McAfee and Erik Brynjolfsson; 2017, WW Norton). Note: any edition is fine.

Estimated cost of required materials: \$49.

Required Software: R and RStudio

R and RStudio are available for free, and instructions for installation will be given well ahead of time on Canvas. No previous experience is assumed for this software. It is important to follow the installation directions exactly if students want R/RStudio to work. Most students will be able to install these programs without a problem. However, there may be a small number of students that have difficulty because there is some issue with the laptop (e.g., it has a nonstandard configuration, the software was not installed in the right place, there is a permissions issue with the computer, etc.)

The vast majority of students will eventually be able to install R and RStudio on their own machines. We will do our very best to help students install R and RStudio on their own computers. If students cannot install R/RStudio, there is another option to use RStudio for free online. It is available at <https://rstudio.cloud>.

Additional Materials Highly Recommended but Not Required: *Mindset: The New Psychology of Success* (Carol S. Dweck; 2007, Ballantine).

COURSE-SPECIFIC POLICIES AND RESOURCES

Missed or late assignments, and regrading of assessments

Students are given a one-hour grace period after the due date for all assessments (except the final exam). During this extra hour, submissions are considered late, but no penalty is assessed. Students will receive a grade of zero for anything submitted after the one-hour grace period unless academic concession has been granted.

Re-grading of Assessments

Great care is taken so as to uphold marking integrity. Should there be a suspected grading error, however, please make a request for re-marking via email to the instructor. Reasons for each re-marking request must be clearly explained in writing. The assessment will be reviewed in its entirety, from scratch, which may result in a positive, negative, or no grade change being made.

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](#).

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

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. Research shows that students’ use of laptops in class has negative implications for the learning environment, including reducing their own grades and the grades of those sitting around them.

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 [DO NOT MODIFY THIS PARAGRAPH]

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. 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.

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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 x^wməθk^wəyəm (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	Module	Time	Topic	Reading/ Assessments due
June 11		8:30-9:00	Orientation	
	1	9:00-10:30	[Lecture] Decision-Making (<i>Machine Platform Crowd Ch. 2</i>)	
	2	10:30-12:00	[Hands-on] Introduction to R	ICE-1 due by June 18 th at 11:59pm
		12:00-13:00	Lunch break	
	3	13:00-14:30	[Lecture] Artificial Intelligence (<i>Machine Platform Crowd Ch. 3</i>)	
	4	14:30-16:00	[Hands-on] Building a Dataset	ICE-2 due by June 18 th at 11:59pm
June 25				
	5	8:30-10:00	[Lecture] Augmentation (<i>Only Humans Need Apply Ch. 3, pt. 1</i>)	
	6	10:00-12:00	[Hands-on] Data Wrangling	ICE-3 due by July 2 nd at 11:59pm
		12:00-13:00	Lunch break	
	7	13:00-15:00	[Hands-on] Creating subgroups of Data	ICE-4 due by July 2 nd at 11:59pm
	8	15:00-16:00	[Lecture] Augmentation (<i>Only Humans Need Apply Ch. 3, pt. 2</i>)	
July 16				
	9	8:30-10:00	[Lecture] The Core vs. The Crowd (<i>Machine Platform Crowd Ch. 10-11</i>)	Final Writeup due July 22 nd at 11:59pm
	10	10:00-12:00	[Hands-on] Merging Data Sets	ICE-5 due by July 23 rd at 11:59pm
		12:00-13:00	Lunch break	
	11	13:00-14:30	[Hands-on] R Programming TBA	ICE-6 due by July 23 rd at 11:59pm
	12	14:30-16:00	Final Review	
SUNDAY July 30			Final Exam at 10am	