COURSE INFORMATION

Course title:	Supply Chain Analytics		
Course code:	BASC 524	Credits:	1.5
Session, term, period:	2022W1, Period 7	Class location:	HA 435
Section(s):	001	Class times:	Tue/Thu, 10:00am - 12:00pm
Course duration:	Nov 1 – Dec 5, 2022	Pre-requisites:	n/a
Division:	Operations and Logistics	Co-requisites:	n/a
Program:	MBA		

INSTRUCTOR INFORMATION

Instructor:	Dr. Carlos da Costa		
Phone:	604-306-0458	Office location:	TBA
Email:	carlos.dacosta@ubc.ca	Office hours:	Tuesday 12:15pm-1:15pm

COURSE DESCRIPTION

Supply chain analytics is one of the fastest-growing business intelligence application areas. An important element in Supply Chain Management is to have timely access to trends and metrics across key performance indicators, while recent advances in information and communication technologies have contributed to the rapid increase of data-driven decision making. This course will expose students to the use of analytics techniques to help managers address problems and challenges that arise in the context of supply chain management. The primary focus will be on learning analytical techniques, including regression, classification, and clustering. The secondary focus is on applications in supply chains. The course is designed to help students understand advanced analytical techniques and think critically about data, models, and their applications in supply chain management.

COURSE FORMAT

The course will include lectures, case discussions, and in-class case activities. Please see the detailed course schedule below.

LEARNING OBJECTIVES

The course will be organised according to the following outline of topics. Due to the short and concentrated nature of the course, the depth into which each is explored will vary greatly. By the end of this course, students will be able to:

1. Understand the role of different kinds of models that support analytical decision making
2. Understand the role of descriptive, predictive, and prescriptive analytics in making supply chain decisions
3. Be able to identify where to use predictive approaches like regression, classification, and clustering approaches
4. Be able to apply simple predictive and prescriptive models to supply chain problems
5. Understand the intuition behind each of the above approaches
6. Be able to implement and run simple models of each type
7. Be able to interpret model results and apply them to case studies in supply chain management

ASSESSMENTS

Summary

Component	Weight
Group case analysis (Harmon)	20%
In-class case assignment (Whirlpool)	15%
Individual case summary (JOANN)	15%
Individual case summary (Drizly)	15%
Final case (Big Basket; due in exam week)	15%
Class participation	20%
Total	100%

Details of Assessments

Class participation:
- Please be ready and willing to actively engage in all aspects of the classroom learning experience. We all have something to contribute to the collective learning experience each day, and we all want to benefit from it.

Group work:
- Groups will be posted on Canvas.

Case summaries:
- Case summaries are short summaries of the key issues in the case.
- Details and guidelines for the case summaries will be posted on the course website.

Case reports:
- Case analysis and report guidelines will be posted on the course website.
- Questions to guide the analysis will also be posted on the course website.

LEARNING MATERIALS

Required:
1. Course pack containing Harvard Business School (HBS) cases (will be available electronically; see information on the course website)
2. Class notes (will be posted before class on the course website: access via https://canvas.ubc.ca/)
3. Links to some required (and some recommended) readings will be posted on the course website
4. Syllabus (will be posted on the course website)

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.

Other Course Policies and Resources

Assignment submission details:
- All in-class cases assignments must be submitted at the time and in the manner specified in class.
- All out-of-class submissions must be uploaded to the course website (deadline specified on the course website).
- For group case analyses, only one member of each group needs to submit the analysis. Please make sure that the names of all group members are noted clearly in the submission.

Grading:
- Case **summaries** will be marked on a **"CheckPlus/Check/CheckMinus"** scale. These will then be converted into a number. Usually, a "Check" means an "average" summary and will receive approximately 80%. CheckPlus will receive more than this, and CheckMinus will receive less. The exact percentage mark for CheckPlus and CheckMinus will depend on the quality of the summaries. Also, all CheckPlus summaries and all CheckMinus summaries need not receive the same percentage mark. Some differences in quality may be accommodated by assigning different percentage marks. For example, while most CheckMinus summaries may receive 75%, a really poor summary may receive a much lower mark. Also, while most CheckPlus summaries may receive 85%, a really outstanding summary may receive a higher mark. In general, a **"CheckPlus" means** that the summary is thorough and thoughtful. This means that the key issues in the case were clearly identified, appropriate analysis was discussed, and recommendations were clearly justified. **"Check" means** that the summary is satisfactory but with room for improvement. For example, the issues were clearly identified, but the analysis and recommendations were not as compelling as they could be. Finally, **"CheckMinus" means** that the summary was unsatisfactory, with significant room for improvement. For example, the key issues were not identified or discussed, and/or the analysis and recommendations were unclear or unsupported by facts. Again, if there are any questions, please e-mail me, and I will be happy to meet individually to address your concerns.
- Case **reports** will be marked out of a certain number of points, e.g. 20 points. Evaluation of the case reports will be based on the clarity of the report, the depth of the analysis, the logic of arguments, the effective use of fact and opinion from the case to defend arguments, and the appropriateness of the issues identified. Considerable attention will be paid to the quantitative analyses. The reasonableness of assumptions chosen to guide the analysis will enter in as well. Again, if there are any questions, please e-mail me, and I will be happy to meet with your group to address your concerns.

A note about case solutions:

- If you search online, you may be able to find "solutions" to case studies. These are typically assignments that students at other universities have submitted and uploaded to some repository. Given the availability of these online "solutions", it may be helpful for me to remind you about why we do case studies.
- Each of you has a unique perspective and understanding of the topics that we study in this course. Your case submissions give you an opportunity to articulate your viewpoint and, by doing so, you contribute to your learning and the learning of the class. Looking for the "correct" answer online does not benefit you. In fact, it hurts you because it constrains your ability to learn. Furthermore, it exposes you to the risk of academic misconduct.
- Maintaining the highest standard of academic integrity enhances your educational experience, individually and as a cohort. I fully expect that you are committed to getting the best possible experience from this program.

A note about feedback:

- This is a case-heavy course. Grading cases can be time-consuming. There is usually not one "correct" approach to a case, and students often provide diverse responses, each of which may consist of a well-thought argument. These nuances can be challenging for a marker to pick up. As a result, I often grade cases by myself. A downside of this approach is that it is not always possible to provide quick feedback. Students, however, often request quick feedback. While I will try to provide feedback as quickly as possible, I would like to emphasise a few ways that students can proactively address this issue.
- First, note that after each case is submitted, it is discussed in class. This class discussion is a form of feedback. Although it is not individualised feedback, I am happy to have one-on-one discussions with students in case they want to discuss their approach to the case and how it compares to what was discussed in class. In other words, after the case discussion, if you want to discuss your case write-up, I am happy to do so.
- Second, graded assignments are not the only form of feedback. While you are waiting for a particular assignment to be returned, if you have questions, I am happy to meet and discuss this with students.
- Third, I am happy to discuss any questions you have about an upcoming assignment. This is often done over e-mail (because cases are usually due after a weekend), but please consider this as a form of feedback as well.
- Finally, at the end of the course, if you would like to receive feedback on specific assignments, I am happy to provide it.

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 cite your sources using the American Psychological Association (APA) reference style. 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 recognises 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 the 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 is 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	Date	Topic	Assessments Due
1	Tues, Nov 1	• Overview of analytics and data science • From data to decisions • The role of models • Simple predictive and prescriptive models	
	Thur, Nov 3	• Forecasting: Time series and regression models, Part 1	
2	Tues, Nov 8	• Forecasting: Time series and regression models, Part 2 • Harmon case assigned	
	Thur, Nov 10	• Predictive analytics application: Cost modelling	• In-class group case assignment: Whirlpool
3	Tues, Nov 15	• Predictive analytics applications • Harmon and Whirlpool case discussions	• Group case report: Harmon Foods
	Thur, Nov 17	• Classification models with simple applications • Logistic regression and classification trees • Advanced topics in predictive modelling: overfitting, regularisation, and model cross-validation	
4	Tues, Nov 22	• Tree-based approaches to classification	
	Thur, Nov 24	• Discussion of Drizly case	• Individual case summary: Drizly case
5	Tues, Nov 29	• Guest lecture: Details to be finalised • Introduction to the concept of similarity • Clustering with simple applications • Predictive analytics applications: background and set up for Big Basket case	
	Thur, Dec 1	• JOANN (implementing a supply chain analytics tool)	• Individual case summary: JOANN case
	Due in exam week (Fri, Dec 9)		• Final assignment: Big Basket case