

Analytics for Supply Chain Management Course Outline

(GS/MSMG 6510)
YORK UNIVERSITY

Instructor and Course Information

Instructor: Rongbing Huang

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Lectures: Monday 7:00-10:00pm

Course description and objectives

This course will provide students with an understanding of key areas of logistics and supply chain management where relevant analysis of data may be needed. Supply chain analytics are available in the following application areas: Inventory Management, Procurement Planning, Demand Forecasting, Distribution Planning & Management, Production planning, Customer Relationship Management (CRM), Fleet and Route sizing and Optimization, and Risk Management.

Text and material

There is no required textbook. Some of contents will come from the following books.

Bicer I. (2023) *Supply Chain Analytics: An Uncertainty Modeling Approach*. Springer Nature.

Cachon G. and Terwiesch C. (2018) *Matching Supply with Demand*. McGraw-Hill Education, 4th edition.

Camm, J., Cochran, J., Fry, M., Ohlmann, J., & Anderson, D. (2021) *Essentials of Business Analytics*, 4th ed. Cengage Learning.

Evans, J. (2021) *Business Analytics*, 3rd ed. Pearson Education.

James, G., Witten, D., Hastie, T., Tibshirani, R., & Passos, S. (2023). *An Introduction to Statistical Learning: With Applications in Python*. Springer. www.statlearning.com/

Keller, G. (2018) *Statistics for Management and Economics*, 11th ed., Cengage Learning.

Tipi, N. (2021) *Supply Chain Analytics and Modelling: Quantitative Tools and Applications*, Koganpage.

Winston, W. (2019) *Microsoft Excel 2019 Data Analysis and Business Modeling*, 6th ed. Pearson Education.

Zollanvari, A. (2023) *Machine Learning with Python: Theory and Implementation*. Springer.

Evaluation

Assignments (4)	40%
Participation	10%
Final Exam	50%

Course Schedule

The course outline/schedule below is subject to "in class" changes as considered necessary by the instructor.

Lecture	Date	Topic	Due
1	Sep. 08	Introduction. Excel functions (mixed reference, conditional formatting, lookup, index/match, sumifs, indirect)	
2	Sep. 15	More Excel functions and Basics of VBA	
3	Sep. 22	VBA	
4	Sep. 29	Probability and statistics review (Binomial, Poisson, Normal, Loss function)	Assignment 1 due
5	Oct. 06	Inventory management subject to uncertain demand	
	Oct. 13	No class (Reading week)	
6	Oct. 20	Inventory management subject to uncertain demand	
7	Oct. 27	Basics of Python	Assignment 2 due
8	Nov. 03	Using SciPy.Stats to solve Newsvendor problem	
9	Nov. 10	LP and its applications in SCM	Assignment 3 due

Lecture	Date	Topic	Due
10	Nov. 17	MILP, Assignment Problem, Shortest Path Problem	
11	Nov. 24	Floyd-Warshall, Knapsack Problem, Bin-packing (Python)	
12	Dec. 01	Machine Learning and Supply Chain Management	Assignment 4 due

Assignments/ Exam

- › Please be advised that assignments are due on the day and time designated at the **BEGINNING** of classes. Late assignments will **NOT** be accepted and no extensions will be granted.
- › Assignments must be **TYPED** (except for graphs). **NON_TYPED** Assignments will NOT be accepted.
- › Assignments must be done on an individual basis. Cheating will result in zero for all involved students.
- › The midterm and final exams will include multiple choice and problem solving type questions or case studies.

Office hours:

By appointment.

Relevant University Regulations

Should there be any updates to these regulations, you can review the most recent Faculty of Liberal Arts and Professional Studies regulations, which are used by SAS (the School of Administrative Studies) at: [Common Course Policies](#).

Deferred Final Exams

Deferred standing may be granted to students who are unable to write their final examination at the scheduled time or to submit their outstanding course work on the last day of classes.

Details can be found at [Deferred Standing](#).

<http://myacademicrecord.students.yorku.ca/deferred-standing>

[DSA Form](#)

In order to apply for deferred standing, students must register at: sas-app.laps.yorku.ca

Followed by handing in a completed original Deferred Standing Agreement (DSA) form and supporting documentation directly to the main office of the School of Administrative Studies (282 Atkinson) and add your ticket number to the DSA form. The DSA and supporting documentation must be submitted no later than five (5) business days from the date of the exam. These requests will be considered on their merit and decisions will be made available by logging into the above-mentioned link. No individualized communication will be sent by the School to the students (no letter or e-mails).

IMPORTANT NOTE

Any request for deferred standing on medical grounds must comply with University regulations. At the time of writing of this outline, the requirement for APS forms had been suspended due to COVID-19. If it resumes, the University will inform you of such resumption, and you would include an Attending Physician's Statement form; a "Doctor's Note" will not be accepted.

Students with approved DSA will be able to write their deferred examination during the School's deferred examination period. **Deferred exams might take place during the regular exams period or in subsequent weeks depending on the course;** precise dates are known when the Office of the Registrar publishes the final exam schedule of the term. No further extensions of deferred exams shall be granted. The format and covered content of the deferred examination may be different from that of the originally scheduled examination. The deferred exam may be closed book, cumulative and comprehensive and may include all subjects/topics of the textbook whether they have been covered in class or not.

Academic Honesty/Integrity

The Faculty of Liberal Arts and Professional Studies considers breaches of the Senate Policy on Academic Honesty to be serious matters. The Senate Policy on Academic Honesty is an affirmation and clarification for members of the University of the general obligation to maintain the highest standards of academic honesty. As a clear sense of academic honesty and responsibility is fundamental to good scholarship, the policy recognizes the general responsibility of all faculty members to foster acceptable standards of academic conduct and of the student to be mindful of and abide by such standards. Suspected breaches of academic honesty will be investigated and charges shall be laid if reasonable and probable grounds exist.

Students should review the York Academic Honesty policy for themselves at: [Senate Policy on Academic Honesty](#).

Students might also wish to review the interactive on-line Tutorial for students on academic integrity, at: [Academic Integrity](#).

Grading Scheme and Feedback Policy

The grading scheme (i.e. kinds and weights of assignments, essays, exams, etc.) shall be announced, and be available in writing, within the first two weeks of class, and, under normal circumstances, graded feedback worth at least 15% of the final grade for Fall, Winter or Summer Term, and 30% for 'full year' courses offered in the Fall/Winter Term be received by students in all courses prior to the final withdrawal date from a course without receiving a grade, with the following exceptions:

Note: Under unusual and/or unforeseeable circumstances which disrupt the academic norm, instructors are expected to provide grading schemes and academic feedback in the spirit of these regulations, as soon as possible. For more information on the Grading Scheme and Feedback Policy, please visit: [Website](#).

Reappraisals

Students may, with sufficient academic grounds, request that a final grade in a course be reappraised (which may mean the review of specific pieces of tangible work). Non-academic grounds are not relevant for grade reappraisals; in such cases, students are advised to petition to their home Faculty. Students are normally expected to first contact the course director to discuss the grade received and to request that their tangible work be reviewed. Tangible work may include written, graphic, digitized, modeled, video recording or audio recording formats, but not oral work. Students need to be aware that a request for a grade reappraisal may result in the original grade being raised, lowered or confirmed. For reappraisal procedures and information, please visit the Office of the Registrar site at: [Grade Reappraisal Principles](#).

Accommodation Procedures

LA&PS students who have experienced a misfortune or who are too ill to attend the final examination in an ADMS course should not attempt to do so; they must pursue deferred standing. Other students should contact their home Faculty for information. For further information, please visit: [Support Accommodations](#).

Religious Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community and making accommodations for observances of special significance to adherents. For more information on religious accommodation, please visit: [Website](#).

Academic Accommodation for Students with Disabilities (Senate Policy)

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses. Provided

that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder. For more information, please visit the [Student Accessibility Services](#) (formerly known as Counselling and Disability Services) website.

York's disabilities offices and the Registrar's Office work in partnership to support alternate exam and test accommodation services for students with disabilities at the Keele campus. For more information on alternate exams and tests please visit [Altexams](#).

Please alert the Course Director as soon as possible should you require special accommodations.