McMaster University | DeGroote School of Business

Q784 -Winter 2025

BUS Q784
Supply Chain Design and Coordination
Winter 2025 Tentative Course Outline

Operations Management
DeGroote School of Business
McMaster University

COURSE OBJECTIVE

To familiarize students with major advanced models and analysis tools for supply chain network design and coordination.

INSTRUCTOR AND CONTACT INFORMATION

Class time: Friday 11:30AM – 14:30PM

Dr. Lingling Shi

Instructor

lingling.shi@mcmaster.ca

Office: DSB 419

Office Hours: Monday 12:00PM-14:00PM

Class Location: please check A2L

Course website: http://avenue.mcmaster.ca/

COURSE ELEMENTS

Credit Value:	3	Leadership:	No	IT skills:	No	Global view:	Yes
Avenue:	Yes	Ethics:	Yes	Numeracy:	Yes	Written skills:	Yes
Participation:	Yes	Innovation:	Yes	Group work:	Yes	Oral skills:	Yes
Evidence-based:	Yes	Experiential:	No	Final Exam:	No	Guest speaker(s):	Yes

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COURSE DESCRIPTION

Supply chain network design is an important strategic decision; some experts claim that 80% of the supply chain costs are a consequence of the supply chain network design. In addition, to manage a supply chain competitively, managers have to make decisions on resources that are not all under their control and consequently have to strategically design coordination mechanisms to optimize their supply chain operations. The course will include classes covering the fundamentals of supply chain design and coordination, as well as an overview of cutting-edge research in the field.

LEARNING OUTCOMES

Upon completion of this course, students will be able to complete the following key tasks:

➢ Model supply chain problems that involve multiple decision makers and objectives
➢ Use optimization models to solve supply chain decision problems
➢ Design and analyse coordination mechanisms for supply chains
➢ Develop a comprehensive understanding and valuable insights into managing socially and environmentally responsible supply chain

REQUIRED COURSE MATERIALS AND READINGS

Textbook:

1. Supply Chain Management: Design, Coordination and Operation. A.G. de Kok, S.C. Graves.
   ➢ This textbook is recommended but not required. It is around $230 ([Supply Chain Management, Volume 11 - 1st Edition | Elsevier Shop](#)).
2. Quantitative Models for Supply Chain Management. Sridhar Tayur, Ram Ganeshan, Michael Magazine.
   ➢ This textbook is recommended but not required. It is available in McMaster library [Quantitative models for supply chain management - McMaster University](#).

Reading list:
A list of papers will be provided.

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GRADE COMPONENT	WEIGHT	DESCRIPTION
Assignments	**30%**	2 x 15% each
Participation and Discussion	**10%**	Class participation and discussion
Journal Paper Presentation	**15%**	Tutorial-style presentation for chosen topic
Course Project Presentation	**15%**	Conference quality presentation
Course Project Paper	**30%**	Written in journal paper format (Latex, at least 10 pages)

EVALUATION

Components and Weights

NOTE: The use of a McMaster standard calculator is allowed during examinations in this course. See McMaster calculator policy at the following URL:
www.mcmaster.ca/policy/Students-AcademicStudies/UndergraduateExaminationsPolicy.pdf

Grade Conversion

Instructors have the discretion of marking individual components of a course with either a letter or numerical grading scheme but final course grades taken at McMaster can only be reported as either

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Pass/Fail or letter grades. When numerical grading is used in a course, the final course average with decimal place of 0.5 or greater should be rounded up before conversion to a letter grade. The minimum passing grade for a graduate student in any course taken is a B-, including undergraduate courses or courses taken off campus:

LETTER GRADE	PERCENT	POINTS
A+	90-100	12
A	85-89	11
A-	80-84	10
B+	75-79	9
B	70-74	8
B-	60-69	7
F	00-59	0

Course Deliverables

Assignments
There will be two assignments.

Journal Paper Presentation
You will choose an article from the list provided and prepare a summary and critique for it as well as present it in the class in tutorial style with a (1) description of the problem, (2) description of the modelling approach, (3) description of how key analyses were done, and interpretation of key results, and (4) discussion of significance, limitations and future research operations. You are required to read all article so you can take part in the class discussion.

Course Project
You will need to propose and complete a course project, which could involve a research problem of supply chain design and coordination models or work on a problem that may lead to publication. The determination of specific project topics for each student will be made in individual meetings with the instructor and will consider the interests and goals of each individual student. The course project will include a course project presentation in class (15%) and course project paper in written report (30%). The presentation is expected to be at conference quality (around 20 minutes). The final paper is to develop a research topic of your interest, including but not limited to (1) background and motivation, (2) main research question, (3) model setup, (4) preliminary analysis, and (5) key insights if available.

COMMUNICATION AND FEEDBACK

Students who wish to correspond with instructors or other TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Program Administrator.

Students who have concerns about the course content, evaluation methods, or delivery should first reach out to the course instructor. If your concern remains unresolved after speaking with the instructor, you may then reach out to the relevant Area Chair for further consideration.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at:

www.mcmaster.ca/academicintegrity

Students are responsible for being aware of and demonstrating behaviour that is honest and ethical in their academic work. Such behaviour includes:

- following the expectations articulated by instructors for referencing sources of information and for group work;
- asking for clarification of expectations as necessary;
- identifying testing situations that may allow copying;
- preventing their work from being used by others (e.g., protecting access to computer files); and
- adhering to the principles of academic integrity when conducting and reporting research.

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AUTHENTICITY/PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ONLINE ELEMENT

All courses use some online elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course.

Students may be required to use the Respondus LockDown Browser and Respondus Monitor. The Respondus LockDown Browser is a downloadable program that allows a student to take an Avenue to Learn quiz in a secure environment. Quizzes can be set to use LockDown Browser or LockDown Browser.

For more details about McMaster's use of Respondus Lockdown Browser please go to https://avenuehelp.mcmaster.ca/exec/respondus-lockdown-browser-and-respondus-monitor/

The available information is dependent on the technology used. Continuation in a course that uses online elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the *Code of Student Rights & Responsibilities* (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx, Teams, or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

ATTENDANCE

Arriving late or missing class disrupts the learning experience for both you and your peers. Punctuality and attendance are crucial to maintaining a respectful, professional and productive environment for everyone, including our faculty.

MISSED ACADEMIC WORK

Missed Tests / Assignments/ Class Participation

Please do not use the online McMaster Student Absence Form (MSAF) as this is for Undergraduate students only. The PhD program will not accept an MSAF.

For scheduled courses where the end date is known and aligns to sessional dates, a grade must be supplied by the end of the course. Under exceptional circumstances a course instructor may approve an extension for the student for the completion of work in a course but must assign an Incomplete grade (INC) at the end of the course. Normally this extension is in the range of a few weeks. A student who receives an incomplete grade must complete the work as soon as possible, and in any case early enough to allow the instructor to report the grade by the sessional deadline noted as 'Final Date to Submit Results of Incomplete Grades'. If the INC grade is not cleared by the deadline, normally an F grade will be entered.

If a student is approved for an extension, they and instructors should make arrangements and submit an Incomplete (INC) Grade Memo to busphd@mcmaster.ca. If the student is not able to complete their course requirements by the INC deadline, they should submit a Request for Extension and be specific regarding the new deadline.

Missing Grade Memo is required if instructors are unable to submit any grades via Mosaic. The instructor must submit a Missing Grade Memo to busphd@mcmaster.ca.

Reasons for Incomplete course work can include:

- Health-related or extenuating circumstances
- Representing the University at an academic or varsity event
- Religious obligations
- Conflicts between two (or more) overlapping scheduled assignments.

Failing a Course

Failure a course is reviewed by the appropriate Faculty Committee on Graduate Admissions and Study or the Associate Dean Graduate Studies in the Faculty. The Faculty Committee on Graduate Admissions and Study or the Associate Dean Graduate Studies requests a departmental recommendation regarding the student, and this recommendation is given considerable weight. In the absence of a departmental recommendation to allow the student to continue, the student will be required to withdraw. Those allowed to remain in the program must either repeat or replace the failed course or milestone, per the decision of the Faculty Committee on Graduate Admissions and Study. A failing grade in a Certificate, Diploma, Master's or Doctoral course remains on the transcript. Students who fail a second course or milestone will not normally be allowed to continue in the program.

ACADEMIC ACCOMMODATION FOR STUDENTS WITH DISABILITIES

Student Accessibility Services (SAS) offers various support services for students with disabilities. Students are required to inform SAS of accommodation needs for course work at the outset of term. Students must forward a copy of such SAS accommodation to the instructor normally, within the first three (3) weeks of classes by setting up an appointment with the instructor. If a student with a disability chooses NOT to take advantage of an SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. The SAS website is:

http://sas.mcmaster.ca

Process for Students

- Students must activate their accommodation(s) (e.g., extra-time, memory aid, etc.) for each upcoming test, assignment, or exam, at least two weeks in advance. Students can do this by emailing their Instructor and the PhD Program Administrator (busphd@mcmaster.ca). If a student cannot meet this deadline, they should contact to discuss alternative arrangements. The program is committed to exploring flexibilities where possible to support students.

- Students will leverage the accommodation (e.g., extra-time, memory aid, etc.), in a designated testing room. Rooms will be booked according to the student's SAS accommodation. Unless the accommodation states otherwise, students should expect that they will be writing in a room with other students. One or more invigilators will always be in the room. Students may also take their tests/exams at the SAS test centre on main campus.

- Following the request to activate the accommodation(s), busphd@mcmaster.ca will reach out to the student with their test, assignment, or exam details, including the date, time, and room number.

All policies and procedures, including restroom access, how extra-time is allocated for assessments under Universal Design, and the submission of memory aids in advance, are consistent with those of SAS on Main Campus. The only variance in procedure is communication around, and physical location of, assessment. There is not a dedicated testing space at RJC or DSB. Existing classrooms and lecture halls will be used for most testing. All SAS-approved accommodations will be honoured by our staff; however, core testing elements are not eliminated in alternative testing formats. Students should expect and plan for invigilation, incidental noise, and other potential distractions.

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to the SEAO (Student Experience Academic Office) *normally within 10 working days* of the beginning of term in which they anticipate a need for accommodation. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

POTENTIAL MODIFICATION TO THE COURSE

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

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RESEARCH USING HUMAN SUBJECTS

ONLY IF APPLICABLE

Research involving human participants is premised on a fundamental moral commitment to advancing human welfare, knowledge, and understanding. As a research-intensive institution, McMaster University shares this commitment in its promotion of responsible research. The fundamental imperative of research involving human participation is respect for human dignity and well-being. To this end, the University endorses the ethical principles cited in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans:

http://www.pre.ethics.gc.ca

McMaster University has mandated its Research Ethics Boards to ensure that all research investigations involving human participants are in compliance with the Tri-Council Policy Statement. The University is committed, through its Research Ethics Boards, to assisting the research community in identifying and addressing ethical issues inherent in research, recognizing that all members of the University share a commitment to maintaining the highest possible standards in research involving humans.

If you are conducting original research, it is vital that you behave in an ethical manner. For example, everyone you speak to must be made aware of your reasons for eliciting their responses and consent to providing information. Furthermore, you must ensure everyone understands that participation is entirely voluntary. Please refer to the following website for more information about McMaster University's research ethics guidelines:

http://reo.mcmaster.ca/

Organizations that you are working with are likely to prefer that some information be treated as confidential. Ensure that you clarify the status of all information that you receive from your client. You **MUST** respect this request and cannot present this information in class or communicate it in any form, nor can you discuss it outside your group. Furthermore, you must continue to respect this confidentiality even after the course is over.

ACKNOWLEDGEMENT OF COURSE POLICIES

Your registration and continuous participation (e.g. on A2L, in the classroom, etc.) to the various learning activities of PhD BUS Q784 will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during lecture and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

ARTIFICIAL INTELLIGENCE

This is where you include your statement on artificial intelligence and its use in your class. Can refer to this page for additional information and guidelines: Generative Artificial Intelligence - Academic Excellence - Office of the Provost (mcmaster.ca)

COURSE SCHEDULE

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Supply Chain Design and Coordination
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Week	Date	Topic	Key Events
1	Jan. 10	Introduction	
2	Jan. 17	Theoretical Background	Assignment 1
3	Jan. 24	Supply Chain Design and Planning	
4	Jan. 31	Sourcing Management	
5	Feb. 7	Individual meeting for course project	One-page outline
6	Feb. 14	Electric Vehicle Supply Chain	
7		**MID-TERM RECESS** (February 17 – February 23)	
8	Feb. 28	Contracts and Coordination	
9	Mar. 7		Assignment 2
10	Mar. 14	Socially and Environmentally Responsible Supply Chain	
11	Mar. 21		
12	Mar. 28	Global Supply Chain	

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13	Apr. 4	Course Project Presentation	April 11: Final Paper submission