

**Commerce 4OB3  
Analysis of Production/Operations Problems  
Fall 2024 Outline  
Operations Management Area  
DeGroote School of Business  
McMaster University**

***INSTRUCTOR AND CONTACT INFORMATION***

**Dr. Prakash Abad**

Instructor  
abad@mcmaster.ca  
Office: DSB 416  
Tel: (905) 525-9140  
Ext. 23945

TBA

Teaching Assistant

***COURSE ELEMENTS***

Credit Value:	3	Leadership:	No	IT skills:	Yes	Global view:	Yes
A2L:	Yes	Ethics:	No	Numeracy:	Yes	Written skills:	Yes
Participation:	Yes	Innovation:	No	Group work:	No	Oral skills:	No
Evidence-based:	Yes	Experiential:	Yes	Final Exam:	Yes	Guest speaker(s):	No

***COURSE INFORMATION***

Lectures: 2 hr 40 min x 1/wk

Tutorials: N/A

Course delivery mode: In-person

Course Description: An examination of analytical approaches to problems in the field of production/operations. The course will provide in-depth coverage of a limited number of topics. Enterprise resource planning system SAP S/4 Hana is an integral part of the course and is used to highlight some of the concepts covered in this course. This course is used towards SAP Certification in Business Integration.

---

### ***IMPORTANT LINKS***

---

- [Mosaic](#)
- [Avenue to Learn](#)
- [Student Accessibility Services - Accommodations](#)
- [McMaster University Library](#)

---

### ***COURSE LEARNING OUTCOMES***

---

- To learn the quantitative techniques of matching supply with demand in a retail outlet, retail chain, or a (manufacturing) supply chain.
- To study the mathematical modelling tools useful in developing and executing tactical and short-term plans in inventory, distribution, and production planning.
- To learn how to navigate in SAP S/4 Hana and to become familiar with the materials management (MM) and production planning (PP) modules within SAP S/4 Hana.

---

### ***COURSE LEARNING GOALS***

---

- Study the challenges of matching supply with demand in retail and manufacturing sectors.
- Understand how to program the materials management (MM) and production planning (PP) modules in SAP S/4 Hana.
- Examine the importance of balancing inventory in retail and managing inventory and capacity in manufacturing.

---

### ***REQUIRED MATERIALS AND TEXTS***

---

Avenue registration for course content, readings, and case materials

- <http://avenue.mcmaster.ca>

\$  
FREE

Inventory and Production Management in Supply Chains, Fourth Edition, CRC Press, 2016. The eBook version of the textbook is available online at McMaster Library:

<http://ebookcentral.proquest.com/lib/MCMU/detail.action?docID=4771754>

*The focus will be on the sections corresponding to the material discussed in class.*

---

## ***COURSE EVALUATION***

---

### ***Components and Weights***

Assignments: 6 in total	18
Midterm	31
Final	31
SAP drills/case study (3)	20
Total	100

---

## ***COURSE DELIVERABLES***

---

**Assignment #1** – Time series forecasting

**Assignment #2** – Lot sizing for individual items when demand is steady or time-varying.

**Assignment #3** – Safety stock when demand is stationary, i.e., when statistical properties of demand (e.g., mean, standard deviation) do not change over time.

**Midterm** –Includes material covered in Assignments 1, 2 and 3.

Detailed sheets containing formulas and procedure templates will be provided along with the examination.

**Assignment #4** – Safety stock when demand is non-stationary.

**Assignment #5** – Distribution requirement planning, aggregate production planning and material requirement planning in manufacturing.

**Assignment #6** – Capacity requirement planning and scheduling.

**SAP S/4 Hana drills 1 and 2** – An exposure to the Materials Management (MM) module in SAP S/4 Hana.

**SAP S/4 Hana Case** – A detailed drill on forecasting aggregate demand and creating aggregate production plan using the Production Planning (PP) module within SAP S/4 Hana.

**Final examination** – Includes material covered in Assignments 4, 5 and 6. Detailed sheets containing formulas and procedure templates will be provided along with the examination.

---

### ***COMMUNICATION AND FEEDBACK***

---

Students who wish to correspond with instructors or 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 Area Administrative Assistants. All students must receive feedback regarding their progress prior to the final date by which a student may cancel the course without failure by default.

- For Level 1 and Level 2 courses, this feedback must equal a minimum of 20% of the final grade.*
- For Level 3 courses and above, this feedback must equal a minimum of 10% of the final grade.*

---

### ***REQUESTING RELIEF FOR MISSED ACADEMIC WORK***

---

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “[Requests for Relief for Missed Academic Term Work](#)” and the link below;

<http://ug.degroote.mcmaster.ca/forms-and-resources/missed-course-work-policy/>

---

### ***COURSE MODIFICATION***

---

From time to time, there may be a need to remove/add topics or to change the schedule or the delivery format. If these are necessary, you will be given as much advance notice as possible.

---

## **GENERATIVE AI**

---

*There are three approved statements on the use of AI in the classroom. Please choose the one that best fits your policy.*

### USE PROHIBITED

Students are not permitted to use generative AI in this course. In alignment with [McMaster's academic integrity policy](#), it “shall be an offence knowingly to ... submit academic work for assessment that was purchased or acquired from another source”. This includes work created by generative AI tools. Also stated in the policy is the following, “Contract Cheating is the act of outsourcing of student work to third parties” (Lancaster & Clarke, 2016, p. 639) with or without payment.” Using Generative AI tools is a form of contract cheating. Charges of academic dishonesty will be brought forward to the Office of Academic Integrity.

---

## **ACADEMIC INTEGRITY**

---

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. The academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

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. a 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. For information on the various types of academic dishonesty, please refer to the [Academic Integrity Policy](#).

The following illustrates only three forms of academic dishonesty:

- Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
- Improper collaboration in group work.
- Copying or using unauthorized aids in tests and examinations.

---

## ***AUTHENTICITY/PLAGIARISM DETECTION***

---

**Some courses may** use a web-based service (Turnitin.com) to reveal the 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. Avenue to Learn, 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., online search, other software, etc.). For more details about McMaster’s use of Turnitin.com, please go to [www.mcmaster.ca/academicintegrity](http://www.mcmaster.ca/academicintegrity).

---

## ***COURSES WITH AN ON-LINE ELEMENT***

---

**Some courses may** use online elements (e.g. e-mail, Avenue to Learn, 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, usernames for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. 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.

---

## ***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 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.

---

## ***ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES***

---

Students with disabilities who require academic accommodation must contact [Student Accessibility Services](#) (SAS) at 905-525-9140 ext. 28652 or [sas@mcmaster.ca](mailto:sas@mcmaster.ca) to make arrangements with a Program Coordinator. For further information, consult McMaster University's [Academic Accommodation of Students with Disabilities](#) policy.

---

## ***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 their Faculty Office *normally within 10 working days* of the beginning of the term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. 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.

---

## ***EXTREME CIRCUMSTANCES***

---

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, Avenue to Learn and/or McMaster email.

---

### ***ACKNOWLEDGEMENT OF COURSE POLICIES***

---

Your enrolment in Commerce 4OB3 will be considered to be an implicit acknowledgement of the course policies outlined above or of any other that may be announced during the 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.



---

**SCHEDULE**

<b>Week</b>	<b>Topic</b>	<b>Study</b>	<b>Event</b>
09/06	Introduction, Time series forecasting	SPT- Ch. 1-3	
09/13	Time series forecasting	SPT- Ch. 3	
09/20	Time series forecasting. Order quantities when demand is approximately level	SPT- Ch. 4	SAP S/4 Hana (Navigation)
09/27	Special one-time discount: A cost approach, Lot sizing for individual items with time-varying demand	SPT-Ch. 5	
10/04	Lot sizing for individual items with time-varying demand	SPT-Ch. 5	SAP S/4 Hana MM exercise
10/11	Safety stock for individual items when demand is stationary	SPT-Ch. 6	
10/18	<b>Mid-term recess</b>		
10/25	<b>Midterm exam (in class: Burke Science Bldg., B103)</b>		
11/01	Forecast-based replenishment when demand is non-stationary, Distribution requirement Planning	SPT-Ch. 6,13	
11/08	An overall framework for production planning and scheduling, Sales and operations planning	Handouts SPT-Ch.13	SAP S/4 Hana PP Case
11/15	Master Production Schedule, Material requirement planning	Handouts	
11/22	Detailed capacity planning, Job shop scheduling	Handouts	SAP S/4 Hana PP Case upload
11/29	Finite scheduling, Just in time system	Handouts	