TELFER

VOTRE LIEN AVEC CE QUI COMPTE — CONNECTS YOU TO WHAT MATTERS

ADM 3301 - OPERATIONS MANAGEMENT
Summer 2018

Professor	Davood Astaraky
Office	DMS 6136
Telephone	613-562-5800, ext. 8842
E-Mail	Astaraky@telfer.uottawa.ca
Office Hours	Tuesdays (17:30 – 19:30) only by appointment
Classes	**Section X**: Tuesday 14:30 - 17:20, SMD 224 **Section Y**: Thursday 19:00 - 21:50, FTX 351
Prerequisite(s)	ADM 2302; ADM 2304
Program of study	B.Com. mandatory course

Course Deliverable	Due Date	Weight on Final Grade
Assignments (2)	Due at 23:59 of the following days on Brightspace (1) Sunday May 27 (2) Sunday July 15	10%
In class exercises	Random	5%
Team project proposal	Sunday June 3rd on Brightspace by 23:59	5%
Midterm exam	Saturday June 23rd, 2018 from 9:00 to 11:00AM at DMS1160	20%
Course project: Application of OM	Sunday July 22nd on Brightspace by 23:59	20%
Final exam	Final exam date, time and location to be determined as per the published University schedule	40%

Course Description

This course provides students with an overview of productions and operations management. The production/operations function, found in every organization, is defined, and its interaction with other areas such as finance, marketing, accounting, personnel and research and development is studied. At the end of the course, the student will learn the fundamental concepts and methodologies applied to operations management. The course emphasizes the use of quantitative techniques and computers to help plan and control production systems. Topics discussed are: planning, managing and controlling operations: forecasting, aggregate planning, inventory control, Material Requirements Planning and introduction to Enterprise Requirement Planning. Introduction to supply chain management: supply chain strategy and design, Lean Operations/Just-In-Time systems. Introduction to quality management and control. Students will be asked to formulate "real-world" problems, to solve them, and to analyse the results, as would do the operations managers in a firm.

Course Contribution to Program Learning Goals

This course contributes to the achievement of the Bachelor of Commerce (B. Com.) program learning goals (LG):

Understand, Apply and Integrate Core Management Disciplines (LG1): the operations manager role is to plan, organize, staff, lead and control all the set of activities needed to create the goods or services provided by the organization. Operations managers play an important role in achieving the strategic objective of the organization. Therefore, they need to have an understanding of the internal and external environmental factors in which the organization is evolving, and respect the objectives and constraints imposed by other functions of the organization (i.e. marketing, finance/accounting etc…).
The group project aims at measuring the achievement of this learning goal.
Demonstrate Critical Thinking and Decision Making Skills (LG2): Operations managers can improve their decisions by applying quantitative and qualitative decision models which are based on solid theories, and which have been applied to real life problems.
The group project, the exams and assignments aim at measuring the achievement of this learning goal.
Demonstrate Leadership, Interpersonal and Communication Skills (LG3): In most scenarios, the analysis and resolution of a problem is more effective when it is supported by a team with different perspectives/background that complements each other (e.g. marketing, finance/ accounting, management etc.).
The group project aims at measuring the achievement of this learning goal.
Apply High Standards of Integrity, Ethics and Social Responsibility (LG4): Operations managers face many challenges in constantly changing environment. They are required to meet stakeholders' (customers, distributors, suppliers, owners, lenders, and employees) and government demands while taking ethical and socially responsible actions. Accomplishing such a task is not clear-cut due to seemingly conflicting demands. However, managers with "high moral awareness and focus on increasing productivity in a system where all the stakeholders have voice"[1] can successfully address these challenges.

[1] **J. Heizer and B. Render;** ***Operations Management,*** *10th* edition, Prentice Hall, 2010

Provide Value to the Business Community in a Chosen Area of Specialization (LG7): Although many of the students will not pursue a career in operations management, many of the concepts and quantitative method discussed in the course can be applied to other domains of specialization. For example, forecasting can be applied to a wide range of specializations (e.g. marketing, finance, etc….), and the same holds for quality management.

The project with the industry and some assignments will measure the above learning goal.

Course Learning Objectives

At the end of the course, the student will be able to:

1. Identify and define the function of "production/operations" in an organization;
2. understand its interdependency with the other functional areas of an organization (e.g. marketing, finance/accounting…);
3. recognize that the success of an organization depends not only on how well each area performs, but also how well the different areas interface with each other;
4. know how to use quantitative techniques and models to solve problems in this area;
5. recognize the usefulness and limitations of quantitative methods;
6. recognize that decision making is a mix of arts and sciences, and thus the need for analytical skills in the interpretation of the output and critical thinking in providing recommendations;
7. predict the demand for products/services;
8. explain and prepare aggregate operations plans and compute their costs;
9. perform capacity planning using queuing theory methods
10. understand and use process analysis and improvement
11. describe the nature of supply chains and the strategic options for supply chain design.
12. describe and use of inventory management techniques;
13. list the building blocks of Just-In-Time (JIT) and lean operations;
14. describe and use of various quality control tools for products/services;
15. develop his/her communication (written and oral), interpersonal and leadership skills through the interaction with their teammates and with representative(s) from their respective firm;
16. describe challenges facing operations managers.

Performance Evaluation

Deliverable	***Value***
Assignments (2 x 5%)	10 %
In class exercises	5%
Group Project	25 %
Midterm Exam	20 %
Final Exam	40 %
Total	100%

Please note that it is not possible to submit extra course work in order to improve your mark.

Exams

To pass this course, it is necessary to have an overall average of 50% (32.5/65) from both exams.

A calculator and ONE cheat-sheet (8.5x11, double sided) will be allowed for both exams. All topics covered in class, in tutorials, and assignments may be tested on exams. The **midterm exam** is scheduled to take place on **Saturday June 23rd** from **9:00** to **11:00 a.m** in the following locations and will cover the material presented up to and including week 7. The final exam is cumulative and will cover all topics covered in the course. To prevent academic fraud, all documents used during the exams, including the questionnaire, the exam booklets, the cheat-sheet, and the statistical tables will be picked up at the end of the exam period. Students failing to submit these documents to the professor will receive zero (0) on the exam.

Section	Midterm classroom
X	DMS 1160
Y	DMS 1160

Student who misses a mid-term examination for reasons approved by the Appeal Committee would have the weight of the mid-term examination added to the weight of the final.

Assignments

A group of minimum of two (2) and maximum of three (3) students must submit their assignments at the time and the date indicated on page 1. Individual assignment is allowed if approved by the professor. Students are **NOT allowed** to join a group in other sections.

All assignments are to be submitted electronically as **a single Word/Pdf document file** via Brightspace course website by the due date. Front page of the Word document has to include title of the assignment and names and student numbers of all members of a group. Second page is the Statement of Integrity signed by all members of a group. Electronic submission must be made prior to 23:59 of each due date. **Only one submission per group is sufficient.**

Submitted assignments must be typed (i.e. **cannot be hand written**) neat, readable, and well-organized. Assignment marks will be adjusted for sloppiness, poor grammar, spelling, for technical errors.

E-mail questions related to the assignment should be sent to the Teaching Assistant.

The best way to go about Brightspace submissions is to use MS Word for your assignment, insert all tables in the document, then save it and submit **ONE** Word document **PER GROUP**.

All assignments, project proposal, final project, and other work submitted in partial fulfillment of the requirements for this course must include on its front page the statement of integrity signed by all students working in the group. The corresponding document is available on page 12.
Students are asked to read the statement: "Beware of Academic Fraud" on page 11 and to consult and familiarize themselves with the University of Ottawa Academic Integrity website: http://web5.uottawa.ca/mcs-smc/academicintegrity/home.php.

Team Project: Application of Operations Management to Industry

The project must be prepared in groups of at least five (5) and at most six (6) students. You **are allowed** to join a group of students registered in other sections.

The goal of the project is to allow students the opportunities to apply the theories and models studied in the *Operations Management* course on larger problems and to study their usefulness and limitations. The project will provide students with the opportunity to explore a real case problem related to the field of *Operations Management*, to describe the methodologies and processes applied by the firm to resolve it, and to better understand the necessity and usefulness of quantitative methods in supporting the decision making process.

Teams are requested to identify, within a business or an industry of their choice, one current issue or problem specific to the field of production and operations management. **Teams are not limited to topics learned in this course**, for example, you could study an issue or problem discussed in the textbook, but not covered in this course. Students are encouraged to consult reference books and use whichever software package or spreadsheet tool that would help them in their analysis.

The Team Project will be worth 25% of the final grade. Each team must submit two typed-written reports. The first report is worth 5% of the final grade, while the second report is worth 20%.

The first report is the project proposal. This report must contain a summary of the firm history, the industry field and assessment of the initial situation; pointing out the issue or the problem you intend to **analyse and/or solve**. This report must not exceed 2 pages (single-spaced, 12 pt, 1-inch margin).

The second and final report must not exceed 15 pages (Appendices can be beyond the 15 pages), double-spaced, 12 pt, 1-inch margin, plus some tables and graphs, if needed. You are free to organize the sections of your report as you wish, provided it constitutes a logical, well structured and clear document. Your report must contain the following elements:

a) A concise summary of the firm pointing out the issue or the problem that you intend to analyse and/or solve and the importance of such an issue or problem to the firm. What were the strengths and weaknesses of the firm at the beginning? You may present this as a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats).

b) Provide a detailed description of the approach taken by the firm to address the issue and/or a detail of the analysis driving your decisions, enumerating the models, relevant data, books and software used and a justification for these choices. Make sure the reader can understand the reasoning behind your decisions.

c) A conclusion, including an auto-evaluation of your performance. State what went well, where the problems occurred, what you would do differently.

d) A set of recommendations to the firm for the longer term (if applicable).

Students are strongly encouraged not to leave the writing of this report to the last minute. Many sections of this report may be written as decisions are taken and results are made available. Do not exceed fifteen (15) pages (Does not include Appendices).

Your reports will be evaluated according to the following criteria (the weighting may vary depending on the nature of the report):

- problem analysis, choice of decision models (if applicable), consistency between decisions and results,...
- quality of the conclusions, arguments and logic.
- quality of the report, of presentation, of style and language, of supporting materials (i.e. graphs, data...) if applicable and of organization.

Team Work

The team work associated with this project will allow you to live an enriching and unique experience. However, this group work will require sustained efforts from all team members. It is difficult for the instructor to evaluate the individual contribution of all team members: hence, students will be asked to individually submit an evaluation sheet assessing the contribution of each team member (including an auto-evaluation). This evaluation sheet can be found on Brightspace course website. Based on these evaluation sheets, and on the feed-back received throughout the semester, the instructor will determine the "individual performance factor" of each team member: this factor is a number from 0 to 1 which will be multiplied to the grade obtained for the two reports in order to determine the student's individual grade for the project. Hence, the members of a given team could end up with different grades for the project. Students who do not contribute their fair share to their team throughout the semester could end up being severely penalized: at the limit, students who did not contribute at all would receive a grade of 0/25.

Students that show poor performance and do not contribute meaningfully to the project must be warned early in the semester to let them know that their contribution are unsatisfactory and will have the opportunity to redeem themselves. The instructor's assistance to solve the situation shall be kept to a minimum and only if the poor performance continues after significant effort by the team members (documented in writing) to resolve the problem. The instructor reserves the right to make her own inquiry and to ask to meet the accused student in private. The student will have the responsibility to demonstrate what his/her contribution to the team was.

The individual performance factor will be 1 for the vast majority of students (roughly 85%-95%).

Evaluating the Contribution of Teammates

All students will be asked to individually fill in an evaluation sheet indicating the respective contributions of all the members of their team, including an auto-evaluation. The evaluation sheet will be available on Brightspace course website. The following information will be required:

- the name of the evaluator
- the names of the members of the team

- an answer to the following questions for **each** team member:

1. The team member was present during team meetings: always, often, sometimes, rarely, never.

2. Compared to the other team members, the time and energy put into the project by the team member was: clearly above average, above average, average, below average, clearly below average.

3. Compared to the other team members, the contribution of the team member with respect to his/her technical competence, his/her knowledge of the course material, his/her understanding of the case was: clearly above average, above average, average, below average, clearly below average.

4. In my opinion, the individual performance factor for this team member should be: (give a number from 0 to 1: a value below 0.9 must be strongly justified).

5. Does the contribution of the team member stand-out in any way compared to that of the other team members? Justify by providing comments which will allow the instructor to better evaluate the performance of the team member.

Course Attendance

As indicated in the academic regulations of the Telfer School of Management, attendance at courses of instruction is mandatory. Students who are absent for more than 9 hours of class time will be excluded from the final examination.

Textbook/Course Package

J. Heizer, B. Render and P. Griffin; *Operations Management: Sustainability and Supply Chain Management*, Second Canadian Edition, Loose Leaf Version Plus NEW MyOMLab, 2/e.
ISBN: 9780134636412

The publisher's website www.prenhall.com/heizer contains supplementary material for each chapter of the textbook (Online Quizzes, Virtual Tours, In the News and Internet Resources). For the edition that is equivalent to our textbook Canadian edition, please go to http://wps.pearsoned.com/bp_heizer_opsmgmt_11/

My OM Lab (MOL), an online resource that is free with the purchase of a new textbook. Otherwise, students can purchase access to MOL along with the e-book or stand-alone access code at www.myomlab.com. To access MOL online use courseID**: jaber24217**
MOL is not compulsory.

Operations Management class notes
Class notes are in the form of PowerPoint presentations (.ppt) files, Excel spreadsheets (.xls) files and Adobe Acrobat (.pdf) files. They will be available for downloading from Brightspace course website .You will want to print out most of these files in time for class. Some of the materials are computer files which you will need but may not want to print.

Additional References (On Reserve at Morisset Library**:** www.biblio.uottawa.ca/mrt/**)**

[1] R.D. Reid and N.R. Sanders; *Operations Management – an Integrated Approach,* 4th edition, John Wiley and Sons, Inc., 2010.
[2] J. Heizer and B. Render; *Operations Management,* 10th edition, Prentice Hall, 2010
[3] R.J. Schroeder; *Operations Management – Contemporary Concepts and Cases*, 4th Edition, McGraw-Hill, 2008.
[4] R.B. Chase, F.R. Jacobs and J. Balkrishna, *Operations and Supply Management – the Core*, Canadian Edition, McGraw-Hill/Irwin , 2008.
[5] W.J. Stevenson and M. Hojati; *Operations Management*, 3rd Canadian Edition., McGraw-Hill, 2007.
[6] D. A. Collier and J. R. Evans, *Operations Management – Goods, Services and Value Chains***,** 2nd edition, South-Western/Cengage learning, 2007.
[7] R.S. Russell and B.W. Taylor III; *Operations Management – Quality and Competitiveness in a Global Environment*, 5th edition, Prentice Hall, 2006.
[8] L.J. Krajewski and L.P. Ritzman; *Operations Management – Processes and Value Chains*, 7th edition, Pearson Prentice Hall, 2005.

Discussion Groups (DGD)

Every week or so, DGDs will be offered, during which a Teaching Assistant (TA) will be available to answer questions related to the assignments, and to solve the suggested problems listed on page 10. Students are advised to review questions and present them to the TA in the DGD for consideration during the 80 minutes period. *Attendance at the weekly Discussion Group (DGD) sessions is not compulsory.* Students are however strongly encouraged to attend the DGD.

The TAs assigned to the DGDs along with his/her e-mail; schedule and location of the DGDs will be announced on Brightspace course website.

E-mail questions related to the DGDs and the two Assignments should be sent to the Teaching Assistant e-mail address.

Important Dates to Remember

Any work submitted late will be penalized by as much as 20% per day: excuses such as over-crowded computer rooms, problems saving documents, problems printing documents or any other technical problem will not be accepted to justify lateness. **If you cannot write the midterm exam,** you need to fill up the exam deferral form that can be found at http://www.telfer.uottawa.ca/bcom/en/current-students/55-exams and submit it to the Student Services Centre (DMS 1100) that manages all requests for deferral of exams, be the midterm or final. Also you must advise your professor by E-MAIL.

Student who misses a mid-term examination for reasons approved by the Appeal Committee would have the weight of the mid-term examination added to the weight of the final.

Team Members of the Project	Before or by Sunday May 20 via Brightsapce
First Report: Project Proposal	Sunday June 3 on Brightspace by 23:59
First Assignment	Sunday May 27 by 23:59 on Brightspace
Midterm Exam	Saturday June 23, 2018 from 9:00 to 11:00 am
Second Assignment	Sunday July 15 on Brightspace
Second Report: Final Project	Sunday July 22 on Brightspace by 23:59

Week	Topics to cover	Chapters in the textbook[2]	Suggested problems[3]
1 May 1- 3	Introduction to Operations Management **Operations Strategy** **Forecasting:** Introduction	1, 2 4	
2 May 8 - 10	**Forecasting:** Time Series Models: Stationary Demand **Forecasting:** Trend Projection and Causality Models	4	4.10, 4.11, 4.13, 4.19, 4.31
3 May 15 - 17	**Forecasting:** Time Series Decomposition Models **Forecasting:** Quality of Forecasts and Validation	4	4.27, 4.28, 4.33, 4.42
4 May 22 – 24	**Process Analysis and Improvement**	7, Supp. 7	Refer to the course website for suggested problems
5 May 29–May 31	**Capacity Management and Queuing Models**	Module D	Refer to the course website for suggested problems
6 June 5 –7	**Capacity Management and Queuing Models**	Module D	Refer to the course website for suggested problems
7 June 12 –14	**Application of Capacity management:** Appointment Scheduling Game **Aggregate Planning for Production and Services**	13	
8 June 19 - 21	**Aggregate Planning for Production and Services**	13	13.3, 13.4, 13.5, 13.6, 13.9, 13.10
Saturday June 23	MIDTERM EXAM *from 9:00 - 11:00 AM*		
9 June 26- 28	**Inventory Management:** Introduction and Deterministic Demand Models	12	12.7, 12.13, 12.14, 12.16 12.18, 12.24
10 July 3 - 5	**Inventory Management:** Deterministic Demand Models (Continued) Safety Stocks and Probabilistic Demand Models	12	Refer to the course website for suggested problems
11 July 10 -12	**Quality Management** **JIT , Lean and Six sigma Continuous Improvement systems** **Total Quality Management (TQM)**	6 16	
12 July 17 - 19	**Statistical Process Control (SPC)** **Process Capability** **Final Review**	Supp. 6	S6.20, S6.23, S6.24, S6.25 S6.8, S6.12, S6.26, S6.27

[2]Please note that some topics discussed in class are not covered in the textbook.
[3]Other problems may be added to the list during the semester.

Beware of Academic Fraud

Academic Regulation 14 defines academic fraud as "*any act by a student that may result in a distorted academic evaluation for that student or another student. Academic fraud includes but is not limited to activities such as:*

a) *Plagiarism or cheating in any way;*
b) *Submitting work not partially or fully the student's own, excluding properly cited quotations and references. Such work includes assignments, essays, tests, exams, research reports and theses, regardless of whether the work is written, oral or another form;*
c) *Presenting research data that are forged, falsified or fabricated;*
d) *Attributing a statement of fact or reference to a fabricated source;*
e) *Submitting the same work or a large part of the same piece of work in more than one course, or a thesis or any other piece of work submitted elsewhere without the prior approval of the appropriate professors or academic units;*
f) *Falsifying or misrepresenting an academic evaluation, using a forged or altered supporting document or facilitating the use of such a document;*
g) *Taking any action aimed at falsifying an academic evaluation.*"

The Telfer School of Management does not tolerate academic fraud. Please familiarize yourself with the guidance provided at: http://web5.uottawa.ca/mcs-smc/academicintegrity/home.php

The Telfer School of Management asks that students sign and submit with their deliverables the Personal Ethics Agreement form. Two versions of this form exist: one for individual assignments, and one for group submissions. **Assignments will not be accepted or marked if this form is not submitted and signed by all authors of the work.** We hope that by making this personal commitment, all students will understand the importance the School places on maintaining the highest standards of academic integrity.

Personal Ethics Agreement Concerning Telfer School Assignments

Group Assignment

By signing this Statement, I am attesting to the fact that I have reviewed not only my own work, but the work of my colleagues, in its entirety.

I attest to the fact that my own work in this project meets all of the rules of quotation and referencing in use at the Telfer School of Management at the University of Ottawa, as well as adheres to the fraud policies as outlined in the Academic Regulations in the University's Undergraduate Studies Calendar. [Academic Fraud Webpage]

To the best of my knowledge, I also believe that each of my group colleagues has also met the rules of quotation and referencing aforementioned in this Statement.

I understand that if my group assignment is submitted without a signed copy of this Personal Ethics Statement from each group member, it will be interpreted by the Telfer School that the missing student(s) signature is confirmation of non-participation of the aforementioned student(s) in the required work.

Signature	Date
Last Name (print), First Name (print)	Student Number
Signature	Date
Last Name (print), First Name (print)	Student Number
Signature	Date
Last Name (print), First Name (print)	Student Number
Signature	Date
Last Name (print), First Name (print)	Student Number
Signature	Date
Last Name (print), First Name (print)	Student Number
Signature	Date
Last Name (print), First Name (print)	Student Number

Personal Ethics Agreement Concerning Telfer School Assignments

Individual Assignment:

By signing this Statement, I am attesting to the fact that I have reviewed the entirety of my attached work and that I have applied all the appropriate rules of quotation and referencing in use at the Telfer School of Management at the University of Ottawa, as well as adhered to the fraud policies outlined in the Academic Regulations in the University's Undergraduate Studies Calendar. Academic Fraud Webpage

_____	_____
Signature	Date
_____	_____
Last Name (print), First Name (print)	Student Number

Access Service for students who need adaptive measures

Students who have a disability or functional limitation and who need adaptive measures (changes to the physical setting, arrangements for exams, learning strategies, etc.) to progress or participate fully in university life should contact Access Service right away:

- By visiting our office on the third floor of the Desmarais Building, Room 3172
- By filling out the online registration form
- By calling us phone at 613-562-5976

Access Service designs services and implements measures to break down barriers to learning for students with physical or mental health problems, visual impairments or blindness, hearing impairments or deafness, permanent or temporary disabilities, or learning disabilities.