MANTECH 4PM3 Course Outline

COURSE INFORMATION		
Session Offered	FALL 2021	
Course Name	Production Management	
Course Code	MANTECH 4PM3	
Date and Time of Lectures	Lecture: Monday, 6:30 PM to 9:30 PM ***Zoom ID*** *to be Posted on Avenue*	
Program Name	Manufacturing Engineering Technology	
Course Calendar Description	Identification of technical, economic, social, characteristics in the production system; forecasting techniques; inventory models; aggregate planning of production; materials requirements planning; scheduling; sequencing; production control.	
Course Instructor	Misara Elgammal	Email: elgammm@mcmaster.ca
Reference Textbooks	S. Nahmias, T. Olsen, Production and Operations Analysis, W. Stevenson, Operations Management Cachon, Terwiesch, Matching Supply With Demand P. Ostwald, Engineering Cost Estimation	
Prerequisite(s)	MANTECH 3LS3 OR 4LS3 and registration in Manufacturing Engineering Technology	

COURSE EVALUATION - OVERVIEW	WEIGHT
Test 1 *(Material from Week 1 to Week 3)*	25%
Test 2 *(Material from Week 5 to Week 7)*	25%
Final Exam *(Material from Week 9 to Week 12)*	25%
Assignments & Presentations *(Total 5 Assignments, Individual or Group)*	20%
In – Class Assignments *(Randomly Assigned In – Class followed by Immediate Submission)*	5%
TOTAL	**100%**

TOPICS	
Week 1 Sept. 13th	**Course Introduction** • Review Course Outline **Introduction to Productions Management** • Process Management and Process Mapping • Key Issues for Today's Business Operations • Operations Management Decision Making **Strategy and Competition** • Framework of Operations Strategy • Competitiveness • Strategic Initiatives
	Labour Analysis (Not Testable Material, for Assignment Purposes Only)

Week 2 Sept. 20th	**Forecasting** • Characteristics of Forecasts • Forecasting Methods • Forecasting and the Supply Chain
	Labor Analysis Assignment and Presentations Due before Class Start
Week 3 Sept. 27th	**Sales and Operations Planning** • The S&OP Process • Aggregate Planning of Capacity • Disaggregating Plans • Master Scheduling Process
	Material Analysis (Not Testable Material, for Assignment Purposes Only)
Week 4 Oct. 4th	***Test 1 during Lecture Hours on Week 1 to Week 3 Material***
Midterm Recess Oct. 11th to Oct. 17th	
Week 5 Oct. 18th	**Inventory Management I** • Holding Inventories • Inventory Costs • EOQ Model
	Material Analysis Assignment and Presentations Due before Class Start
Week 6 Oct. 25th	**Inventory Management I** • Newsvendor Model • Lot - Size Reorder Point Systems • Multiproduct Systems
	Classical Operations Analysis (Not Testable Material, for Assignment Purposes Only)
Week 7 Nov. 1st	**Supply Chain Management** • Determining Delivery Routes in Supply Chain Chains • Risk Pooling • Multilevel Distribution Systems • Supply Chain Efficiency
	Classical Operations Analysis Assignment and Presentations Due before Class Start
Week 8 Nov. 8th	***Test 2 during Lecture Hours on Week 5 to Week 7 Material***
Week 9 Nov. 15th	**Push / Pull Production Control Systems** • MRP and ERP • JIT • Lean Operations
	Contemporary Operations Analysis (Not Testable Material, for Assignment Purposes Only)
Week 10 Nov. 22nd	**Process Selection and Facilities Layout** • Process Selection • Types of Layouts • Flexible Manufacturing Systems
	Contemporary Operations Analysis Assignment and Presentations Due before Class Start

Week 11 Nov. 29th	**Operations Scheduling** • Job Shop Scheduling • Stochastic Scheduling • Assembly Line Balancing
	Overhead and PHC Analysis ***(Not Testable Material, for Assignment Purposes Only)***
Week 12 Dec. 6th	**Project Scheduling** • Critical Path Analysis • Time Costing Methods • Resource Considerations
	Overhead and PHC Analysis ***Assignment and Presentations Due before Class Start***

Final Exam as Scheduled by Registrar's Office on Week 9 to Week 12 Material

Percentage grades will be converted to letter grades and grade points per the University calendar

LEARNING OUTCOMES

1. Discuss the fundamental concepts of operations management including core operations business processes, controls and metrics. Understand the roles of operations within an organization
2. Select appropriate models and methods and demonstrate the ability to calculate, analyze, compare and optimize demand forecasts, inventory order parameters, aggregate production plans, material requirement plans, productions schedules
3. Select appropriate models and methods and demonstrate the ability to design, analyze, compare and optimize production processes and plant layout options

POLICIES

Anti-Discrimination

The Faculty of Engineering is concerned with ensuring an environment that is free of all discrimination. If there is a problem, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or the Human Rights Consultant, as soon as possible. https://equity.mcmaster.ca/documents/anti-discrimination-policy.pdf

Academic Integrity

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

Academic dishonesty is to knowingly act of 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 kinds of academic dishonesty please refer to the Academic Integrity Policy, located at: http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf .

The following illustrates only three forms of academic dishonesty:

1. Plagiarism. e.g. the submission of work that is not own or for which other credit has been obtained
2. Improper collaboration in group work
3. Copying or using unauthorized aids in tests and examinations.

Requests for Relief for Missed Academic Term Work (Assignments, Mid-Terms, etc.)

The McMaster Student Absence Form is a self reporting tool for **Undergraduate Students** to report absences that last up to 5 days and provides the ability to request accommodation for any missed academic work. Please note, this tool cannot be used during any final examination period.

You may submit a maximum of 1 Academic Work Missed requests per term. It is YOUR responsibility to follow up with your Instructor immediately regarding the nature of the accommodation.

If you are absent more than 5 days or exceed 1 request per term you MUST visit your Associate Dean's Office (Faculty Office). You may be required to provide supporting documentation.

This form should be filled out immediately when you are about to return to class after your absence. http://www.mcmaster.ca/msaf/

Communications

It is the student's responsibility to:

- Maintain current contact information with the University, including address, phone numbers, and emergency contact information.
- Use the University provided e-mail address or maintain a valid forwarding e-mail address.
- Regularly check the official University communications channels. Official University communications are considered received if sent by postal mail, by fax, or by e-mail to the student's designated primary e-mail account via their @mcmaster.ca alias.
- Accept that forwarded e-mails may be lost and that e-mail is considered received if sent via the student's @mcmaster.ca alias.
- Check the McMaster/Avenue email and course websites on a regular basis during the term.

Protection of Privacy Act (FIPPA)

The Freedom of Information and Protection of Privacy Act (FIPPA) applies to universities. Instructors should take care to protect student names, student numbers, grades and all other personal information at all times. For example, the submission and return of assignments and posting of grades must be done in a manner that ensures confidentiality.
http://www.mcmaster.ca/univsec/fippa/fippa.cfm

Academic Accommodation of Students with Disabilities Policy

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information consult McMaster's policy for Academic Accommodation of Students with Disabilities http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf

Students must forward a copy of the SAS accommodation to the instructor of each course. If a student with a disability chooses NOT to take advantage of a SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. http://sas.mcmaster.ca

Student Code of Conduct

The Student Code of Conduct (SCC) exists to promote the safety and security of all the students in the McMaster community and to encourage respect for others, their property and the laws of the land. McMaster University is a community which values mutual respect for the rights, responsibilities, dignity and well-being of others. The purpose of the Student Code of Conduct is to outline accepted standards of behavior that are harmonious with the goals and the well-being of the University community, and to define the procedures to be followed when students fail to meet the accepted standards of behavior. All students have the responsibility to familiarize themselves with the University regulations and the conduct expected of them while studying at McMaster University.
http://judicialaffairs.mcmaster.ca/pdf/SCC.pdf