



**DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDUSTRIAL ENGINEERING PROGRAM, BSC.**

Course Syllabus

1. Course number and name

IE 471 Production planning and control

2. Credits and contact hours

(3+0) 3 credit hours, 3 contact hours

3. Course type

Blended Learning Course (2+1)

4. Instructor's or course coordinator's name

Dr. Nader Santarisi

5. Textbook information

Lee J. Krajewski, Manoj K. Malhotra, Larry P. Ritzman, Operations Management: Processes and Supply Chains, 12th Edition, Pearson, 2019, 9781292259932.

a. Other supplemental materials

1. Instructor's notes.
2. Jonah C. Pardillo, Service Operations Management, Ashland, 2019, 9781774075777.
3. David B. Grant, Alexander Trautrim and Chee Yew Wong, Sustainable Logistics and Chain Management: Principles and Practices for Sustainable Operations Management, 2nd Edition, Kogan Page, London, 2017, 9780749478278.
4. Steffen Wütz, Joerg S. Hofstetter, and Wolfgang Stölzle, Corporate Supply Chain Management Organization and Governance: A Guidebook with Benchmarks of the Actual Status Quo and Best Practices, Cuvillier Verlag, 2016, 9783736992375.
5. S. K. Mukhopadhyay, production planning and control: text and cases, 3rd Edition, PHI Learning, 2015, 9788120350847.
6. Ravi Behara, Operations Management, BarCharts, 2014, 9781423220183.

6. Specific course information

a. Catalog description

Introduction to supply chain management, forecasting techniques, capacity and aggregate planning, inventory management, economic order quantity,



**DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDUSTRIAL ENGINEERING PROGRAM, BSC.**

safety stock, bill of material, material requirement planning, master production scheduling, special production management systems.

b. Prerequisites or co-requisites

Prerequisite: IE 330 operations Research

c. The course is:

Required in the Industrial Engineering program.

7. Specific goals for the course

a. Course outcomes:

After completion of the course, students are expected to be able to:

1. Apply time series forecasting technique for certain problem, and solve EOQ, p-system and Q-system in inventory control problems.
2. Develop Sales & Operations Plans and Master Production Schedules, and develop job/workforce schedules.
3. Develop Material Requirement Planning systems while considering BOM, and solve capacity planning problems.

b. The following student outcomes are addressed by the course:

SO-(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

SO-(e) an ability to identify, formulate, and solve engineering problems.

SO-(i) a recognition of the need for, and an ability to engage in life-long learning.

8. Learning Outcomes and their Alignment with Program Educational Objective (PEO's), Methods of Delivery, and Assessment Methods:

Learning Outcomes	Program PEOs	Method of Delivery	Assessment Method
Course Outcomes			
CO-(1): Apply time series forecasting technique for certain problem, and solve EOQ, p-system and Q-system in inventory control problems.	-	Lectures (Example and Problems)	Assignment/ Quiz/Project
CO-(2): Develop Sales & Operations Plans and Master Production Schedules, and develop job/workforce schedules.	-	Lectures (Example and Problems)	Assignment/ Quiz/Project



**DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
 INDUSTRIAL ENGINEERING PROGRAM, BSC.**

CO-(3): Develop Material Requirement Planning systems while considering BOM, and solve capacity planning problems.	-	Lectures (Example and Problems)	Assignment/ Quiz/Project
Student Outcomes			
SO-(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	1-3	Term Project	Term Project
SO-(e) an ability to identify, formulate, and solve engineering problems	1-3	Lectures (Example and Problems)	Midterm Exam
SO-(i) a recognition of the need for, and an ability to engage in life-long learning	1-3	Term Project	Term Project

9. Weekly Teaching Plan

Lecture(s)	Topic	Method of Delivery
1-7	Chapter 8: FORECASTING	Lecture/ Online Lecture
8-15	Chapter 9: INVENTORY MANAGEMENT	Lecture/ Online Lecture
16-17	Supplement C: SPECIAL INVENTORY MODELS	Lecture/ Online Lecture
18-26	Chapter 10: OPERATIONS PLANNING AND SCHEDULING	Lecture/ Online Lecture
27-28	Supplement D: LINEAR PROGRAMMING	Lecture/ Online Lecture
30-38	Chapter 11: RESOURCE PLANNING	Lecture/ Online Lecture
39-41	Chapter 12: SUPPLY CHAIN DESIGN	Lecture/ Online Lecture
42-45	Chapter 4: CAPACITY PLANNING	Lecture/ Online Lecture



FET
كلية الهندسة والتكنولوجيا
FACULTY OF ENGINEERING & TECHNOLOGY



Engineering
Accreditation
Commission

**DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDUSTRIAL ENGINEERING PROGRAM, BSC.**

10. Grade Distribution:

Assessment	Grade	Week No.
- Midterm Exam	30%	7 th Week
-Assignments (Reports /Project/Quizzes/ Home works)	20%	1-16 th Week
- Final Examination	50%	16 th Week

Note: Make-up exams will be offered for valid reasons. It may be different from regular exams in content and format.