

School of Engineering and Natural Sciences / Industrial Engineering (English)

2023 - 2024 Academic Year

PRODUCTION PLANNING and CONTROL

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
PRODUCTION PLANNING and CONTROL	IND3149120	Fall Semester	3+0	3	6
Prerequisites Courses	MODELLEME VE OPTİMİZASYONA GİRİŞ				
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assoc.Prof. Melis Almula KARADAYI				
Name of Lecturer(s)	Assoc.Prof. Melis Almula KARADAYI				
Assistant(s)					
Aim	The objective of this course is to teach basic concepts of production planning and inventory control systems; obtaining a fair understanding of capacity planning, aggregate production planning, and inventory analysis; recognizing the relationships among the strategic, tactical and operational levels of planning in production systems by understanding the mathematical foundation behind these tools.				
Course Content	This course contains; Introduction to Production Systems and Facility Layout Types,Demand Forecasting I,Demand Forecasting II,Demand Forecasting III,Aggregate Production Planning I,Aggregate Production Planning II,Inventory Control Subject to Known Demand I,Inventory Control Subject to Known Demand II,Inventory Control Subject to Unknown Demand I,Inventory Control Subject to Unknown Demand II,Master Production Schedule (MPS),Material Requirements Planning (MRP) I,Material Requirements Planning (MRP) II,Term Project Presentations.				
Course Learning Outcomes		Teaching Methods		Assessment Methods	
Differentiate production layouts		16, 9		A, F, G	
Explain basic concepts of production, production planning and inventory control systems		12, 16, 9		A, F	
Use forecasting techniques to forecast demand		12, 16, 9		A, F, G	
Construct aggregate production plans		12, 16, 9		A, G	
Manage inventory control subject to known and uncertain demand		12, 16, 9		A, G	
Construct Master Production Schedule (MPS)		12, 16, 9		A	
Construct Materials Requirement Planning (MRP) and solve lot sizing techniques		12, 16, 9		A, G	
Teaching Methods	12: Problem Solving Method, 16: Question - Answer Technique, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, F: Project Task, G: Quiz				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Introduction to Production Systems and Facility Layout Types	Lecture Notes			
2	Demand Forecasting I	Lecture Notes			
3	Demand Forecasting II	Lecture Notes			
4	Demand Forecasting III	Lecture Notes			
5	Aggregate Production Planning I	Lecture Notes			
6	Aggregate Production Planning II	Lecture Notes			
7	Inventory Control Subject to Known Demand I	Lecture Notes			
8	Inventory Control Subject to Known Demand II	Lecture Notes			
9	Inventory Control Subject to Unknown Demand I	Lecture Notes			
10	Inventory Control Subject to Unknown Demand II	Lecture Notes			
11	Master Production Schedule (MPS)	Lecture Notes			
12	Material Requirements Planning (MRP) I	Lecture Notes			
13	Material Requirements Planning (MRP) II	Lecture Notes			
14	Term Project Presentations	Term Project Report			
Evaluation Methods		Weight(%)			
Midterm Exam		30			
General Exam		70			

Resources
Steven Nahmias, Tava Lennon Olsen Production and Operations Analysis, 7th Edition, McGraw-Hill. ISBN-10: 1478623063 Sipper D., R.L. Bulfin, Production: Planning, Control, and Integration, McGraw-Hill, 1997 Zipkin, Paul H. Foundations of Inventory Management. Boston: McGraw-Hill, 2000, ISBN-10: 0256113793