

**OSTİM TECHNICAL UNIVERSITY
ENGINEERING FACULTY**

**IENG 307 – PRODUCTION PLANNING AND CONTROL I
COURSE CURRICULUM FORM
2022-2023**

IENG 307 – PRODUCTION PLANNING AND CONTROL I							
Ders Adı	Ders Kodu	Dönemi	Saati	Uygulama Saati	Laboratuvar Saati	Kredi	AKTS
Production Planning and Control I	IENG 307	5	4	0	0	4	5

Precondition	No
Language of the Course	English
Type of the Course	Compulsory
Course Level	Bachelor Degree
Method of Teaching	Face to face, Online
Course Learning and Teaching Techniques	Lecture, Question and Answer, Application

The Aim of Course
Production and production management, classification of production systems, planning activities. Demand forecasting, forecasting methods; where it is used, moving average methods, exponential smoothing methods. Project planning, PERT and CPM methods. Inventory systems; inventory cost, inventory policies, economic order quantity determination, variable and deterministic inventory systems, abc analysis. Master production planning; purposes, linear production planning models.

Course Content
Understanding of production, production types and characteristics, the concept and importance of planning, demand forecasting and methods, project planning and methods, inventory management concepts and methods, master production planning and methods.

Weekly Topics and Related Preparation Studies		
Week	Topics	Preliminary
1	What is production? The concept of production management, classification and characteristics of production systems, Production planning, the place of production planning unit in the enterprise and its relations with other units.	
2	Forecasting and importance of demand, places of use, time series, factors affecting time series; Expression of trend, conjuncture, seasonal fluctuations and incidental factors.	
3	Demand forecasting methods; moving average methods, exponential smoothing methods to explain with examples.	
4	Project planning, network analysis, network drawing, CPM and critical path finding with examples	
5	Calculating the slack in the network, drawing the timeline, explaining the resource use and balancing in the project with examples	

6	Explaining the time / cost analysis in the project, shortening the project duration, PERT method and finding the critical path with examples	
7	Inventory management and its concepts, inventory charts, inventory management system, inventory costs, explaining inventory control systems.	
8	Midterm Exam	
9	Continuous stock control systems; simple stock control system and its features, dedicated stock control system.	
10	Explaining stock supply system, periodic stock control systems, ABC analysis (Pareto)	
11	Calculation of the economic order quantity;	
12	Explaining the effect of price reduction and gradual price offer on the economic order point with examples	
13	What is the main production planning, what are the demand meeting approaches of the enterprises?	
14	Making the master production plan with the table-based heuristic method, explaining the linear cost models with examples	
15	Explaining the establishment of models with only production and inventory costs, workforce level and overtime decisions with examples, explaining the application of the transportation model in the creation of the master production plan with examples	
16	Final Exam	

Resources (Textbook and Supplementary Books)

1. HEIZER, J., RENDER, B., ? Principles of Operations Management?, Prentice Hall., 2000.
2. NAHMIA, S., ? Production and Operations Analysis?, Irwin Inc., 1993.
3. JOHNSON AND MONTGOMERY, ?Operations Research in Production Planning, Scheduling and Inventory Control?, John Wiley, 1974.

Evaluation System		
Studies	Number	Contribution Margin
Continue		
Laboratory		
Application		
Field Study		
Course Specific Internship (if applicable)		
Quizzes/Studio/Critical		
Homework		
Presentation		
Projects		
Report		
Seminar		
Midterm Exams/Midterm Jury	1	% 40
General Exam/Final Jury	1	% 60
Total		% 100
Contribution to the Success Grade of Mid-Semester Studies		% 40
Contribution of End of Semester Studies to Success Grade		% 60
Total		% 100

Course Category	
Basic Vocational Courses	X
Specialization/Field Courses	
Support Lessons	
Communication and Management Skills Lessons	
Transferable Skills Lessons	

Relation of Course Learning Outcomes and Program Qualification						
No	Program Qualifications / Outcomes	Contribution Level				
		1	2	3	4	5
1	Ability to design, conduct experiments, collect data, evaluate and interpret results for the analysis and solution of Industrial Engineering problems.					x
2	To be able to use course information in solving industrial engineering problems.					x
3	Acquisition of analytical thinking skills				x	
4	Ability to use information technologies required for Industrial Engineering applications.			x		
5	Having an up-to-date and sufficient background in engineering, mathematics, science and social sciences related to industrial engineering; To be able to use the theoretical and applied knowledge in these fields together in solving industrial engineering problems.					x

ECTS/Workload Table			
Activities	Number	Duration (Hours)	Total Workload
Lesson hours (Including the exam week: 16 x total lesson hours)	16	4	64
Laboratory			
Application			
Course Specific Internship			
Field Study			
Out of Class Study Time	16	4	64
Presentation/Seminar Preparation			
Projects			
Reports			
Homeworks			
Quizzes/Studio Critic			
Preparation Time for Midterm Exams/Midterm Jury	1	16	16
Preparation Time for the General Exam/General Jury	1	16	16
Total Workload	(160/30 = 5)		160