

**DEPARTMENT of INDUSTRIAL ENGINEERING
COURSE CATALOGUE FORM**



Course Code: INDE4313				Course Title: Supply Chain Management			
Semester	L + R + L	Credits	AKTS	Language	Category	Instructional Methods	Prerequisites
6	3+0+0	3	6	English	Elective	Lecture	INDE2001
Course Objectives			To introduce supply chain management and its relation to other production and operations functions such as ERP, aggregate planning and MRP.				
Course Content			Fundamentals of supply chain management and enterprise resources planning (ERP). Static, dynamic, nonlinear lot sizing models. Materials management. Capacity resources planning (CRP) and distribution system management. Implementation of manufacturing management strategies.				
Course Learning Outcomes			<p>Students, who pass the course satisfactorily:</p> <ol style="list-style-type: none"> 1. Classify the motivations and the relationship between suppliers and distributors to ensure supplies of raw materials and markets for finished goods. [2] 2. Use supply chain approaches to decrease the production, inventory, transportation costs and to increase the service level and profitability. [2] 3. Execute the minimization of the risk factors and distributions of them to whole chain. [2] 4. Use methods to measure supply chain performance and identify how to improve its shortcomings. [2] <p>[Note: Numbers in brackets are indicating the related program outcomes]</p>				
ISCED Category of the course			52 Engineering				
Textbook			Designing and Managing the Supply Chain (3rd edition); Simchi-Levi, Kaminsky, and Simchi-Levi; McGraw Hill, 2007				
Supplementary Material			Supply Chain Management: Strategy, Planning and Operations (4th edition); Chopra and Meindl, Pearson Prentice Hall, 2009				

COURSE PLAN

Week	Topics	Laboratory / Tutorial Work
1	Fundamental knowledge on supply chains and samples of supply chains in different sectors of the economy	
2	Production, planning, sharing of stock level information, new product development, producer-distributor relationship, a case study on stock and stock out.	
3	Contracts on procurement.	
4	Sequential Procurement Chain, Profit sharing, Risk sharing	
5	Production Planning under uncertainty	
6	News vendor Problem – single product	
7	News vendor Problem – multi product	
8	Risk management, Decision making under uncertainty, procurement lead times, a case study on management of seasonal demand.	
9	Inventory management, ordering lead time, risk pooling	
10	Uncertainty of demand, stock management, a case study on common stocks	
11	Logistic network configuration	
12	Procurement network, distribution management.	
13	Bullwhip effect, decreasing procurement times.	
14	Case studies	

COURSE ASSESSMENT SYSTEM

	Activities	Contribution (%)
Semester Activities	Semester Written Exams	25
	Homework	25
	Reports	
	Labs	
	Seminars	
	Presentations	
	Term Project	15

	Other (attendance, field trip etc.)	
FINAL EXAM		35
Total		100

CONTRIBUTION of the COURSE on INDUSTRIAL ENGINEERING PROGRAM OUTCOMES

	Program Outcomes	Low	High
1	Adequate knowledge in mathematics, science and subjects pertaining to Industrial Engineering; ability to use theoretical and applied knowledge in these areas in complex engineering problems.		
2	Ability to identify, formulate, and solve complex Industrial Engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.		X
3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.		
4	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving problems encountered in engineering practice; ability to employ information technologies effectively.		
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.		
6	Ability to work efficiently individually and in intra-disciplinary / multi-disciplinary teams.		
7	Knowledge of Turkish and English languages; ability to communicate effectively orally, inscriptive and visually by using these languages (via business methods such as reports, presentations and instructions).		
8	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.		
9	Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.		
10	Knowledge about business life practices (management activities such as project, risk, change and quality etc.); awareness in entrepreneurship, innovation; knowledge about sustainable development.		
11	Knowledge about the global and social effects of engineering practices on health, environment, economics and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.		

ECTS - WORK LOAD TABLE

COURSE ACTIVITIES	Quantity	Time (hr)	Work Load (hr)
Lectures	14	3	42
Final Exam (Preparation included)	1	30	30
Semester Written Exams (Preparation included)	1	20	20
Out of class study time			
Homework	5	6	30
Reports			
Labs			
Seminar			
Presentations			
Term Project	1	28	28
Total Load (hr)			150
ECTS Credits of the course (Total Work Load / 25)			6

Revision / Date 5/02/2020	Coordinator / Prepared By Seyhun Altunbay	Approved By Çağlar Aksezer
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