



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Simulation in Supply Chain and Logistics							
Course Code		LYM514		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	5	Workload	127 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Teach fundamentals of modeling and simulation for static and dynamic systems, Teach a simulation software (ARENA), Familiarize with applications in logistics management and logistics operations, Provide handson experience of both analytical and modeling aspects of simulation, Provide tools for analyzing input distributions and processes, methods for generating random numbers and processes, statistical analysis of output, experimental design and optimizing simulation models.							
Course Content		This course aims to teach fundamentals of modeling and simulation with applications in logistics management and logistics operations. Emphasis is placed on handson experience of both analytical and modeling aspects of simulation. Analysis topics include input distributions and processes, methods for generating random numbers and processes, statistical analysis of output, experimental design and optimizing simulation models. Modeling topics include model construction for static or dynamic systems, issues about level of detail, the simplifying assumptions, model validation and verification using a highlevel modeling package.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Additional Reference Books DiscreteEvent System Simulation, 4/E, J Banks, J Carson, B L. Nelson, D Nicol, Prentice Hall, 2005. Web Sites İnternet Sitesi Academic Journals Akademik dergiler
---	--

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to simulation
2	Theoretical	Simulation examples and general principles
3	Theoretical	Simulation software Introduction to Arena
4	Theoretical	Arena ile ilgili Ana Bilgiler
5	Theoretical	Ana olasılık ve istatistik tekrarı / Rastgele sayılar ve rastgele değişkenler
6	Theoretical	Queuing Models / Input Data Analysis
7	Theoretical	Modeling basic operations and inputs with Arena
8	Theoretical	Modeling basic operations and inputs with Arena (continued)
9	Intermediate Exam	Midterms
10	Intermediate Exam	Midterms
11	Theoretical	Modeling basic operations and inputs with Arena (continued)
12	Theoretical	Modeling detailed operations with Arena
13	Theoretical	Modeling detailed operations with Arena
14	Theoretical	Verification and Validation of Simulation Models
15	Theoretical	Output Analysis with Arena
16	Final Exam	Finals

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	0	3	39
Reading	13	0	2	26
Midterm Examination	1	25	1	26



Final Examination	1	35	1	36
Total Workload (Hours)				127
[Total Workload (Hours) / 25*] = ECTS				5
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Student will be able to analyze real life logistics systems.
2	Student will be able to guide business decisions using simulation.
3	Student will be able to evaluate possible outcomes in the business environment using simulation.
4	Student will be able to model real life logistics system.
5	Student will be able to optimize real life logistics systems.

Programme Outcomes (Logistics Management Interdisciplinary Master)

1	Being able to contribute to the institution the participant works for and the logistics sector by the use of the knowledge and abilities gained during the education period; and manage change in the institution and the sector;
2	Reaching a competency about contemporary business and technology applications in the area of logistics and supply chain management and analysis and strategy development methods;
3	Being able to create opportunities by combining supply chain management with information technologies and innovative processes by the use of the interdisciplinary courses the participants take;
4	Having the ability to develop creative solutions by working on global logistics and supply chain subjects and realizing these by the use of their project management knowledge;
5	Having the knowledge, abilities and capabilities required for effective logistics and supply chain management by the use of a problem and case analysis based learning;
6	Being able to examine logistics and supply chain processes with the management science viewpoint, analyze related concepts and ideas by scientific methods;
7	If continuing to work in the academia, having the necessary information on logistics applications; if continuing to work in the sector, having the necessary knowledge on conceptual subjects;
8	Being able to specify appropriate research questions about his/her research area, conduct an effective research with the use of necessary methods and apply the research outcomes in the sector or the academia;
9	Being able to follow the changes and developments in the sector the participant works in, in order to keep his/her personal and professional competence updated and develop himself/herself when necessary;
10	Have the necessary capabilities to pursue doctoral studies in national and foreign institutions

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	4		2	3	3
P2	5	3	3	3	3
P3		3	3		4
P4	2	4	5	5	5
P5	1	4	5	4	5
P6	2	5	4	5	5
P7	2	5	5	3	5
P8	3	3	2	3	3
P9	3	3	2	2	2
P10	3	3	3	2	5

