T.C.

ESKİŞEHİR OSMANGAZİ UNİVERSİTY

FACULTY OF SCIENCES

MATHEMATİCS AND COMPUTER SCIENCES DEPARTMENT

COURSE INFORMATION FORM

Course Name	Course Code
Simulation Techniques	821615009

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
5	3	0	-	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
x				

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

Prerequisite(s) if any	
Objectives of the Course	Preparing students for more advanced works in Computer Science.
Short Course Content	Basic aspects of simulation, Simulation process, Models and systems, Discrete and continuous simulation modelling, Applications of simulation, SLAM, Basic network elements, Queuing systems, Control statement, Resource modelling, GATES.

	Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	Acquire sufficient knowledge in simulation topics.	1,2	1,2	J
2	Develop the ability to create algorithms and write programs to solve problems by using theoretical and practical knowledge.	1,2	1,2	J
3	Develops ability to analyze and solve problems encountered.	3,4,5	2,10	J
4	Analytical thinking skills develop and the ability to make individual and independent decisions develops.	3,4,5	10,11	A
5	The ability to analyze and interpret data, apply interpretation to other data, and apply this information in a computer environment develops.	13	10,11	A
6				
7				
8				

***Teaching Methods** **1:**Expression, **2:**Discussion, **3:**Experiment, **4:**Simulation, **5:**Question-Answer, **6:**Tutorial, **7:**Observation, **8**:Case Study, **9:**Technical Visit, **10:**Trouble/Problem Solving, **11:**Induvidual Work, **12**:Team/Group Work, **13**:Brain Storm, **14:**Project Design / Management, **15:**Report Preparation and/or Presentation

****Measuring Methods** **A:**Exam, **B:**Quiz, **C:**Oral Exam, **D:**Homework, **E:**Report, **F:**Article Examination, **G:**Presentation, **I:**Experimental Skill, **J:**Project Observation, **K**:Class Attendance; **L**:Jury Exam

Main Textbook	Law, A. M., & Kelton, W. D. (2000). Simulation Modeling and Analysis (3rd ed.). McGraw-Hill.
Supporting References	1. Banks, J., Carson, J. S., Nelson, B. L., & Nicol, D. M. (2005). Discrete-Event System Simulation (4th ed.). Prentice Hall.
Necessary Course Material	Computer

Course Schedule	
1	Basic aspects of simulation
2	Simulation process
3	Models and systems
4	Discrete and continuous simulation modelling
5	Applications of simulation
6	Applications of simulation
7	Problem Solving
8	Mid-Term Exam
9	SLAM
10	Basic network elements
11	Queuing systems
12	Control statement
13	Resource modelling
14	GATES
15	Problem Solving
16,17	Final Exam

Calculation of Course Workload			
Activities	**Number**	**Time (Hour)**	**Total Workload (Hour)**
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,….)	14	3	42
Homework	2	1	2
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)	1	30	30
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	10	10
Final Exam	1	2	2
Studying for Final Exam	1	20	20
		Total workload	**150**
		Total workload / 30	**5**
		Course ECTS Credit	**5**

Evaluation	
Activity Type	**%**
Mid-term	30
Quiz	
Homework	
Bir öğe seçin.	
Bir öğe seçin.	
Final Exam	70
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)

NO	PROGRAM OUTCOME	Contribution
1	The ability to apply knowledges of Mathematics and Computer Sciences,	5
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,	4
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,	5
4	The skill to solve and design a problem process in accordance with a defined target,	5
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,	4
6	The skill to use the modern techniques and computational tools needed for mathematical applications,	3
7	The skill to make team work within the discipline and interdisciplinary,	2
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,	2
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,	4
10	The skill to have professional and ethical responsibility,	2
11	The skill to have consciousness for quality issues and scientific research,	2
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,	1
13	Ability to solve problems in the working life faced to find an appropriate algoritms via mathematical modeling and to write computer programs,	4
14	The skill to developed design of software systems at different complex levels,	1
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.	1

LECTUTER(S)				
Prepared by	Prof. Dr. Alper ODABAŞ			
Signature(s)				

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