



T.C.

ESKİŞEHİR OSMANGAZI ÜNİVERSİTESİ

FACULTY OF SCIENCES

MATHEMATICS AND COMPUTER SCIENCES DEPARTMENT



**COURSE INFORMATION FORM**

Course Name	Course Code
Decision Support Systems	

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
8	3	0	-	5

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

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

<b>Prerequisite(s) if any</b>	
<b>Objectives of the Course</b>	Providing the fundamental concepts and techniques in the course content, and enhancing students' abilities to develop algorithms and write programs by applying these concepts and techniques.
<b>Short Course Content</b>	Introduction to Decision Support Systems, Components and Architecture of Decision Support Systems, Decision-Making Process and Models, Data Management in Decision Support Systems, Knowledge Management in Decision Support Systems, Multicriteria Decision Analysis (MCDA), Business Intelligence and Decision Support Systems, Artificial Intelligence in Decision Support Systems, Expert Systems and Their Role in Decision Support Systems, Simulation and Modeling Techniques, Optimization Techniques for Decision Support Systems, User Interface Design for Decision Support Systems, Case Studies of Decision Support Systems Applications

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Acquire sufficient knowledge in decision support systems 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.	3,4,5,9	2,10	J
4 Analytical thinking skills develop and the ability to make individual and independent decisions develops.	3,4,5,9	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			

<b>Main Textbook</b>	Turban, E., Sharda, R., & Delen, D. (2017). Decision support and business intelligence systems (10th ed.). Pearson.
<b>Supporting References</b>	<ol style="list-style-type: none"> <li>1. Cormen, T. H., Leiserson, C. E., Rivest, R. L., &amp; Stein, C. (2022). Introduction to algorithms (4th ed.). MIT Press.</li> <li>2. Elmasri, R., &amp; Navathe, S. B. (2015). Fundamentals of database systems (7th ed.). Addison-Wesley.</li> <li>3. Pahlavan, K., &amp; Krishnamurthy, P. (2020). Web services: Concepts, technologies, and applications. CRC Press.</li> </ol>
<b>Necessary Course Material</b>	Computer

<b>Course Schedule</b>	
<b>1</b>	Introduction to Decision Support Systems
<b>2</b>	Components and Architecture of Decision Support Systems
<b>3</b>	Types of Decision Support Systems
<b>4</b>	Decision-Making Process and Models
<b>5</b>	Data Management in Decision Support Systems
<b>6</b>	Knowledge Management in Decision Support Systems
<b>7</b>	Multicriteria Decision Analysis (MCDA)
<b>8</b>	Mid-Term Exam
<b>9</b>	Business Intelligence and Decision Support Systems
<b>10</b>	Artificial Intelligence in Decision Support Systems
<b>11</b>	Expert Systems and Their Role in Decision Support Systems
<b>12</b>	Simulation and Modeling Techniques
<b>13</b>	Optimization Techniques for Decision Support Systems
<b>14</b>	User Interface Design for Decision Support Systems
<b>15</b>	Case Studies of Decision Support Systems Applications
<b>16,17</b>	Final Exam

<b>Calculation of Course Workload</b>			
<b>Activities</b>	<b>Number</b>	<b>Time (Hour)</b>	<b>Total Workload (Hour)</b>
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)	3	10	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
		<b>Total workload</b>	<b>150</b>
		<b>Total workload / 30</b>	<b>5</b>
		<b>Course ECTS Credit</b>	<b>5</b>

Evaluation	
<b>Activity Type</b>	<b>%</b>
Mid-term	30
Quiz	
Homework	
Bir öge seçin.	
Bir öge seçin.	
<b>Final Exam</b>	<b>70</b>
<b>Total</b>	<b>100</b>

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)				
<b>Prepared by</b>	Prof. Dr. Alper ODABAŞ			
<b>Signature(s)</b>				

Date:06.06.2024