

# ALGORITHM AND PROGRAMMING

<b>1</b>	Course Title:	ALGORITHM AND PROGRAMMING
<b>2</b>	Course Code:	İMÖ2006
<b>3</b>	Type of Course:	Compulsory
<b>4</b>	Level of Course:	First Cycle
<b>5</b>	Year of Study:	2
<b>6</b>	Semester:	4
<b>7</b>	ECTS Credits Allocated:	2.00
<b>8</b>	Theoretical (hour/week):	2.00
<b>9</b>	Practice (hour/week):	0.00
<b>10</b>	Laboratory (hour/week):	0
<b>11</b>	Prerequisites:	
<b>12</b>	Language:	Turkish
<b>13</b>	Mode of Delivery:	Face to face
<b>14</b>	Course Coordinator:	Dr. Öğr. Üyesi BAHTİYAR BAYRAKTAR
<b>15</b>	Course Lecturers:	
<b>16</b>	Contact information of the Course Coordinator:	E-mail: bbayraktar@uludag.edu.tr, İş Tel: +90(224) 294 22 98. Adres: UÜ, Eğitim Fakültesi, İlköğretim Bölümü, Matematik Eğitimi Anabilim Dalı, 16059 Görükle / BURSA
<b>17</b>	Website:	
<b>18</b>	Objective of the Course:	The purpose of the course is to understand the basics of mathematical modeling in comprehensive manner. Also the goal is to learn the basics of algorithm and to be able to use them on computer. To gain skills in producing of practice tasks in Maths lessons. To understand the basics of software languages.
<b>19</b>	Contribution of the Course to Professional Development:	Creates and develops the knowledge base of the prospective teacher. Comprehends the concepts related to the field and the relations between concepts based on the competencies gained in secondary education. Have defines and analyzes problems related to his field, and develops solutions based on evidence and research.
<b>20</b>	Learning Outcomes:	
		<b>1</b> Terms of building mathematical models to analyze the problem;
		<b>2</b> Creation mathematical models and solution methods implementation of some of the problems from our daily lives,;
		<b>3</b> Creation a simple linear mathematical model.;
		<b>4</b> Definition of algorithm and concept of the algorithm. Learning of the must-have features of algorithms.;
		<b>5</b> Drawing flow diagram and testing algorithm.;
		<b>6</b> Software development of algorithms for arrays and matrices.;
		<b>7</b> Development of numerical methods and software algorithms that were seen in mathematics course.;
		<b>8</b>
		<b>9</b>
		<b>10</b>
<b>21</b>	Course Content:	

<b>Course Content:</b>			
Week	Theoretical	Practice	
<b>1</b>	Algorithm concept, introduction and properties. Examples of algorithms. Basic structures of algorithms.		
<b>2</b>	Designing ways of algorithms. Algae Flow charts.		
<b>3</b>	Basic structures of algorithms. Examples.		
<b>4</b>	Basic structures of algorithms. Examples.		
<b>5</b>	Flowchart symbols and basic structures of algorithms (linear, branching and loop algorithms). Complex algorithms and functions. Algorithm applications.		
<b>6</b>	Software language. Structure of a computer language (its alphabet, special words, expressions, rules, appearance).		
<b>7</b>	Application of linear algorithms. Software Applications		
<b>8</b>	Application of branching algorithms. Software Applications		
<b>9</b>	Application of branching algorithms. Software Applications		
<b>10</b>	Application of algorithms in loop form. Software Applications		
<b>11</b>	Application of algorithms in loop form. Software Applications		
<b>12</b>	Application of algorithms in loop form. Software Applications		
<b>13</b>	Algorithms and software on arrays and matrices. Software Applications		
<b>14</b>	Algorithms and software on arrays and matrices. Software Applications		
<b>22</b>	Textbooks, References and/or Other Materials:	1. <a href="http://web.firat.edu.tr/kimmuh/eskiweb/kimya/model.htm">http://web.firat.edu.tr/kimmuh/eskiweb/kimya/model.htm</a> 2. <a href="http://www.hakankor.com.tr/Algoritma.pdf">http://www.hakankor.com.tr/Algoritma.pdf</a> 3. Ders notları.	
<b>23</b>	Assesment		
TERM LEARNING ACTIVITIES		NUMBER	WEIGHT
Midterm Exam		1	40.00
Quiz		0	0.00
Home work-project		0	0.00
Final Exam		1	60.00
Total		2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00	
Contribution of Final Exam to Success Grade		60.00	
Total		100.00	
Measurement and Evaluation Techniques Used in the Course		Techniques such as lecture, discussion, question-answer, 3E are used in the teaching of the course. Midterm and final exams are taken into consideration in the measurement and evaluation of the course.	
<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>		

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	0	0.00	0.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	15.00	15.00
Others	0	0.00	0.00
Final Exams	1	15.00	15.00
Total Work Load			73.00
Total work load/ 30 hr			1.93
ECTS Credit of the Course			2.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	4	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	4	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>LO: Learning Objectives PQ: Program Qualifications</b>																
<b>Contribution Level:</b>	<b>1 very low</b>			<b>2 low</b>			<b>3 Medium</b>			<b>4 High</b>			<b>5 Very High</b>			