DATA STRUCTURES AND ALGORITHMS

1	Course Title:	DATA STRUCTURES AND ALGORITHMS
2	Course Code:	EEM4109
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	7
7	ECTS Credits Allocated:	5.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. FAHRİ VATANSEVER
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	E-posta:fahriv@uludag.edu.tr Tel: (224) 294 09 05 Adres: Elektrik-Elektronik Mühendisliği bölümü, No:304
17	Website:	
18	Objective of the Course:	To gain ability to analyze and synthesis of data structures, coding and understanding different algorithms
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	To gain ability developing advanced software in data analysis area
	2	To gain ability to develop select and use modern techniques and equipment necessary for engineering applications
	3	To gain ability to use information technology in efficient way
	4	To gain ability to simulate with developing advanced software for investigating engineering problems
	5	To gain ability to collect data, analysis result and interpret results with developing advanced software for investigating engineering problems
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21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Data, data structures, data processing algorithms	
2	Arrays	

3	Lists	
4	Queues	
5	Stacks	
6	Trees	
7	Sorting algorithms	
8	Midterm Exam + General review	
9	Sorting algorithms	
10	Searching algorithms	
11	Searching algorithms	
12	Graphs	
13	Graphs algorithms	
14	Hash tables	
22	Textbooks, References and/or Other Materials:	1. Goodrich, M.T., Tamassia, R., Mount, D., Data Structures & Algorithms in C++, Second Edition, John Wiley & Sons Inc., 2011. 2. Lafore, R., Sams Teach Yourself Data Structires and Algorithms in 24 Hours, Sams Publishing, 1999. 3. Vatansever, F., İleri Programlama Uygulamaları, Seçkin Yayıncılık, 2006. 4. Lafore, R., Data Structures & Algorithms in Java, Second Edition, SAMS, 2003. 5. Kruse, R.L., Ryba, A.J., Data Structures and Program Design in C++, Prentice Hall, 2000.
23	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		

24	**ECTS / WORK LOAD TABLE**

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	16.00	16.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			5.00

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	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

Contribution Level:	1 very low	2 low	3 Medium	4 High	5 Very High