DATA MANAGEMENT AND FILE STRUCTURES

1	Course Title:	DATA MANAGEMENT AND FILE STRUCTURES
2	Course Code:	BMB2002
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	4
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	4.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Dr. Ögr. Üyesi CEYDA NUR ÖZTÜRK
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	ceydanur@uludag.edu.tr
17	Website:	
18	Objective of the Course:	To teach different file organization approaches using data structures that are appropriate to the purpose of applications for storing and managing dynamic and big data in secondary storage devices, and thus to have the fundamentals of current database systems comprehended
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Being able to explain physical structure of secondary storage devices
	2	Being able to program main file operations in sequential-access and direct-access files with C++ language
	3	Being able to organize files depending on various hashing and indexing methods
	4	Being able to select the appropriate data structure for a given application
	5	Being able to manage and maintain dynamic and big data effectively
	6	Being informed about some searching, sorting, and compression algorithms
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21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Introduction to data management, Basics of C++ programming	

2	Main file operations, File organization with fixed or variable length records	
3	Secondary storage devices (Hard disks)	
4	Secondary storage devices (Optical disks and tapes)	
5	Sequential-access files, Buffer management	
6	Direct-access files, Hashing approaches	
7	Static collision resolution methods	
8	Dynamic collision resolution methods	
9	Indexed file organization	
10	Binary search trees and AVL trees	
11	B trees and B+ trees	
12	Indexed sequential access files, Bit level file operations	
13	Searching and sorting algorithms, External sorting	
14	Data compression algorithms	
22	Textbooks, References and/or Other Materials:	File Organization and Processing, A. L. Tharp, John Wiley & Sons, 1988. Veri Seti Düzenleme, M. Ö. Ergen, Ege Üniversitesi, 1990.
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical Home-work-project	3 20/40	14	4.00	56.00
Practicals/Labs	0	0.00	0.00
Self study and preperation Total	5 100/100	14	2.00	28.00
Homeworks	3	24.00	72.00
Success Grade Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Total Midterm exams	100.00	11.00	11.00
Others	0	0.00	0.00
Course Final Exams	1	15.00	15.00

24 ECTS / WORK LOAD TABLE

Total Work Load			182.00
Total work load/ 30 hr			6.07
ECTS Credit of the Course			6.00

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	1	3	0	0	0	0	2	0	0	0	0	0	0	0
ÖK2	5	3	2	4	1	4	3	1	4	3	0	0	0	0	0	0
ÖK3	5	5	5	5	2	5	3	1	5	3	1	0	0	0	0	0
ÖK4	5	4	4	4	1	0	0	0	2	0	0	0	0	0	0	0

| ÖK5 | 3 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| ÖK6 | 4 | 3 | 2 | 4 | 0 | 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