

## GAU, Faculty of Engineering

<b>Course Unit Title</b>	File Organization and Access Methods	
<b>Course Unit Code</b>	CEN304	
<b>Type of Course Unit</b>	Compulsory, computer engineering students	
<b>Level of Course Unit</b>	BSc	
<b>National Credits</b>	3	
<b>Number of ECTS Credits Allocated</b>	6 ECTS	
<b>Theoretical (hour/week)</b>	2	
<b>Practice (hour/week)</b>	-	
<b>Laboratory (hour/week)</b>	2	
<b>Year of Study</b>	3	
<b>Semester when the course unit is delivered</b>	6	
<b>Mode of Delivery</b>	Face to Face, Laboratory Experiments, Web	
<b>Language of Instruction</b>	English	
<b>Prerequisites and co-requisites</b>	-	
<b>Recommended Optional Programme Components</b>	Computer programming skills	
<b>Objectives of the Course</b>		
<ul style="list-style-type: none"> <li>➤ Conceptual overview of sequential, indexed and indexed-sequential file access</li> <li>➤ Teaching search methods in sorted sequential files</li> <li>➤ Teaching methods of index table creation</li> <li>➤ Teaching sort methods</li> </ul>		
<b>Learning Outcomes</b>		
When this course has been completed the student should be able to		Assesment
1	Have a clear understanding about file accessing techniques	1
2	Know and apply basic search techniques on sorted sequential files	1,5
3	Know and apply basic sort techniques on files	1,5
4	Create and manage a structured file system for an application	1,5
5	Know and apply indexing methods to a structured file	1,5
<i>Assesment Methods:</i> 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work		
<b>Course's Contribution to Program</b>		
		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	3
2	Ability to design and conduct experiments as well as to analyze and interpret data	3
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	1
4	Ability to apply systems thinking in problem solving and system design	5
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	1
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	1
7	Ability to express their ideas and findings, in written and oral form	2
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	1
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	3
10	To apply fundamental concepts of software design, database design, data processing and artificial intelligence in the modeling, designing, implementing, testing and deploying software solutions.	4
11	Ability to analyse and design hardware systems by applying the principles of embedded systems, microprocessors, computer networks, distributed systems and data communication.	4
<i>CL (Contribution Level):</i> 1.Very Low, 2.Low, 3.Moderate, 4.High, 5.Very High		

Course Contents			
Week			Exams
1		Introduction to file systems and usage of files	
2		Sequential File Organization	
3		Sequential Search Methods in Sorted Files	
4		Direct File Organization.	Extra Quiz
5		Static Tree Structures (EISCH, LICH etc.).	
6		Static & Dynamic Tree Structures (Prg. Overflow & Comp. Chng).	
7		Dynamic Tree Structures (Brent's & Binary Insertion).	Quiz
8			Midterm
9		Filter Application (Bloom) and Text Search (Boyer & Moore)	
10		Sorting Techniques	
11		Secondary Key Retrieval (Inverted Files)	
12		Bits of Information	
13		B-Tree and Derivatives	Quiz
14			Lab. Exam
15			Final
Recommended Sources			
<b>Textbook:</b> File Organization and Processing, A.L.Tharp, John Wiley & Sons, 1998, ISBN: 0-471-60521-2			
<b>Supplementary Material (s):</b> File Structures: An Object-Oriented Approach with C++, M.J.Folk, B.Zoellick, G.Riccardi, Addison Wesley, 1997			
Assessment			
Attendance & E-learning	10%		
Homeworks	5%		
Laboratory	15%	Lab Grade= ((Lab Exam + Lab Performance) × Lab Attendance)	
Midterm Exam	30%	Written Exam	
Quiz	5%	Written Exam	
Final Exam	35%	Written Exam	
Total	100%		
ECTS Allocated Based on the Student Workload			
Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	2	30
Labs and Tutorials	12	2	24
Assignments	10	3	30
E-Learning Activities	-	-	-
Project/Presentation/Report Writing	-	-	-
Quizzes	2	12	12
Lab Exams	1	12	12
Midterm Examination	1	15	15
Final Examination	1	15	15
Self Study	14	2	28
Total Workload			166
Total Workload/30 (h)			5.53
ECTS Credit of the Course			6