GAU, Faculty of Engineering

Course Unit Title	Introduction to Information Retrieval
Course Unit Code	CEN446
Type of Course Unit	Technical Elective for Computer Engineering
Level of Course Unit	4th year
National Credits	3
Number of ECTS Credits Allocated	6 ECTS
Theoretical (hour/week)	3
Practice (hour/week)	-
Laboratory (hour/week)	-
Year of Study	4
Semester when the course unit is delivered	7-8
Course Coordinator	Assist. Prof. Dr. Kamil Dimililer
Name of Lecturers	Assist. Prof. Dr. Kamil Dimililer
Name of Assistant	-
Mode of Delivery	Face to Face,
Language of Instruction	English
Prerequisities and co-requisities	-
Recommended Optional Programme Components	Mathematics

Objectives of the Course:

➢ Teaching fundamentals methods of Information Retrieval
➢ Teaching performance criteria of IR systems
➢ Teaching advanced techniques such as clustering and classification
➢ Discussing problems and future of IR.

Learning Outcomes

When this course has been completed the student should be able to		Assesment.
1	Solve basic problems by applying Vector Space Method	1
2	Evaluate the performance of a given IR system	1
3	Apply indexing methods for IR systems	1
4	Apply clustering techniques in IR systems	1
5	Read and explain an new article in this field	3,4
	Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work	

Course's Contribution to Program

		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	1
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	5
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	4
7	Ability to express their ideas and findings, in written and oral form	5
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	3
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.	5
11	Ability to analyse and design hardware systems by applying the principles of embedded systems, microprocessors, computer networks, distributed systems and data communication.	1
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)		

Course Contents

Week			Exams
1		Introduction	
2		Overview of IR systems	
3		Boolean Method	
4		Vector Space Method	
5		Precision and Recall	
6		Precision-Iecall Curves	
7		Index Files	
8			Midterm
9		Indexing	
10		Classification and Clustering	
11			
12		Dimension Reduction	Quiz
13		Web Retrieval	
14			
15			Final

Recommended Sources

Textbook: Ricardo Baeza-Yates and Berthier Ribeiro-Neto, Modern Information Retrieval, Addison Wesley, 1999.
Supplementary Material (s): 1. Christopher D. Manning, Prabhakar Raghavan and Hinrich Schütze, Introduction to Information Retrieval, Cambridge University Press. 2009.
(http://www-csli.stanford.edu/~schuetze/information-retrieval-book.html)
2. C. J. van Rijsbergen, Information Retrieval.. Butterworths, 1979.
(http://www.dcs.gla.ac.uk/Keith/Preface.html)

Assessment

Attendance	5%	
Midterm Exam	25%	Written Exam
Quiz	20%	Written Exam
Presentation	10%	
Final Exam	40%	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	3	45
Labs and Tutorials	-	-	-
Assignments	-	-	-
Project/Presentation/Report Writing	1	30	30
E-learning Activities	4	2	8
Quizzes	1	12	12
Midterm Examination	1	12	12
Final Examination	1	15	15
Self Study	14	3	42
Total Workload			164
Total Workload/30 (h)			5.47
ECTS Credit of the Course			6