Course Specifications

Course Title:	Information Retrieval and Web Search
Course Code:	**AI325**
Program:	**Information and Computer Science**
Department:	**Computer Science and Information**
College:	College of Science
Institution:	Majmaah University

Table of Contents

A. Course Identification

1. Credit hours:	
2. Course type **a.** University ☐ College ☐ Department ■ Others ☐ **b.** Required ☐ Elective ☐	
3. Level/year at which this course is offered:	
4. Pre-requisites for this course (if any)**:** ICS 322 & ICS 315	
5. Co-requisites for this course (if any)**:** 	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	48	80 %
2	Blended	6	10 %
3	E-learning	6	10 %
4	Correspondence		
5	Other		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	30
2	Laboratory/Studio	20
3	Tutorial	10
4	Others (specify)	
	Total	60
Other Learning Hours*		
1	Study	15
2	Assignments	15
3	Library	5
4	Projects/Research Essays/Theses	15
5	Others (specify)	
	Total	50

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

The course discusses the theory, design, and implementation of Information Retrieval (IR) techniques in text-based information systems. The theoretical component of the course focuses on IR methods for the processing, indexing, querying, ranking, organization, and classification of textual documents, including Web documents. Given the vastness and richness of the Web, users need high-performing, scalable and efficient methods to access its wealth of information and satisfy their information needs. As such, being able to search and effectively retrieve relevant pieces of information from large text collections.

2. Course Main Objective

This course aims to introduce theory and method of information retrieval, and practical issues regarding search engines.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	Recognize current technologies skills and tools necessary for the practices discipline.	**K3-AI**
1.2	Acquire knowledge of computing and mathematics appropriate to the discipline.	
1.3		
1...		
2	**Skills :**	
2.1	Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.	**S3- AI**
2.2	Identify and analyze user needs and consider them during the selection, integration, and administration of computer-based systems.	
2.3		
2...		
3	**Competence:**	
3.1	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	**C3-AI**
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Information Retrieval (IR) and Web Search	10
2	Basic IR Models	8
3	Experimental Evaluation of IR	8
4	Web Search and its characteristics	10
5	Text Representation	12
6	Question and answering, Deep Learning for IR	12
Total		60

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge**		
1.1	Recognize current technologies skills and tools necessary for the practices discipline.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
1.2	Acquire knowledge of computing and mathematics appropriate to the discipline.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
…			
2.0	**Skills**		
2.1	Design, implement and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
2.2	Identify and analyze user needs and consider them during the selection, integration, and administration of computer-based systems.	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
…			
3.0	**Competence**		
3.1	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles	Lectures, Individual presentations & Brainstorming exercises	Quiz , Mid Exam , Assignment, Final Exam, Individual demonstrations.
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes		10 %
2	Mid Exams		30 %
3	Assignments		10 %
4	Group Discussion, Presentation		10 %
5	Final Exam		40 %

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Information Retrieval A Complete Guide (5STARCooks, 2020) by Gerardus Blokdyk.
Essential References Materials	Query Understanding for Search Engines-The Information Retrieval Series (Springer, 2020) by Yi Chang , Hongbo Deng
Electronic Materials	Determines as the course is going on.
Other Learning Materials	Videos and presentations are available with instructor

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and Labs as those that are available at college of science, Az Zulfi
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart Board and required software
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N.A.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Student-faculty management meetings.	Program Leaders	Direct
Discussion within the staff members teaching the course	Peer Reviewer	Direct
Departmental internal review of the course.	Peer Reviewer	Direct
Reviewing the final exam questions and a sample of the answers of the students by others.	Peer Reviewer	Direct
Visiting the other institutions that introduce the same course one time per semester.	Faculty	Indirect

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	