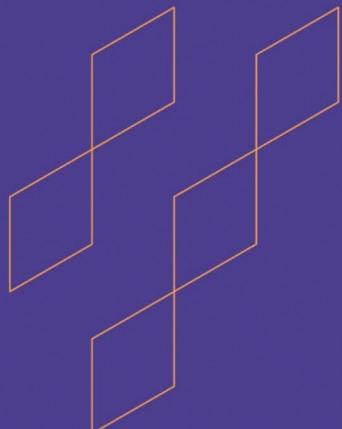




2024

TPG-153



Course Specification

— (Postgraduate Programs)

Course Title: Information Retrieval & Extraction

Course Code: IS627

Program: Master in Computer Information Systems

Department: Information Systems

College: Computer Sciences and Information Technology

Institution: King Faisal University

Version: 1.0

Last Revision Date: 23 October 2023



Table of Contents

A. General information about the course:	3
B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:	4
C. Course Content:	5
D. Students Assessment Activities:	5
E. Learning Resources and Facilities:	5
F. Assessment of Course Quality:	6
G. Specification Approval Data:	6





A. General information about the course:

1. Course Identification:

1. Credit hours: (3)				

2. Course type				

A.	<input type="checkbox"/> University	<input type="checkbox"/> College	<input checked="" type="checkbox"/> Department	<input type="checkbox"/> Track
B.	<input type="checkbox"/> Required		<input checked="" type="checkbox"/> Elective	

3. Level/year at which this course is offered: (2nd Level / First Year)				

4. Course general Description:				

This course covers concepts in Information Retrieval and Extraction (IR). The focus of this course is to discuss IR techniques for text-based information systems. The course will discuss a variety of both classical and modern IR models, Text classification, Indexing and Search, Web retrieval, structured text retrieval. This course will also address more advanced topics in "intelligent" IR, including Natural Language Processing techniques, and "smart" Web agents.

5. Pre-requirements for this course (if any):				

None

6. Pre-requirements for this course (if any):				

None

7. Course Main Objective(s):				

The objective of this course is to introduce students to the different classic and modern Information Retrieval models. It also gives the students the skills to be aware of the importance of Information Retrieval in smart web agents and how to implement Information Retrieval systems using advanced machine learning algorithms.

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom		
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 	42	100%
4	Distance learning		





3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	42
2.	Laboratory/Studio	
3.	Assignments	6
4.	Project/Research essays	56
5.	Study	84
6.	Library	14
7.	Others (specify).....	
	Total	160

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods:

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Explain different classic and advanced IR models	K1	Lecture Discussion of Literature	Assignments Exams
1.2	Provide term weighting and document ranking	S4	Lecture In-class Activities	Assignments Exams
1.3	Elaborate indexing, processing, and querying textual data	S4	Lecture In-class Activities	Assignments Exams Project
2.0	Skills			
2.1	Apply document processing operations and compression methods	S2, S4	Lecture Case studies	Assignments Quizzes
2.2	Apply machine learning algorithms for text classification	S6	Lecture Case studies	Assignments Exams
2.3	Use basic retrieval models, algorithms, and IR system implementations	S4, S6	Lecture Research Articles Case studies	Exams Project Presentation





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.0	Values, autonomy, and responsibility			
3.1	Explore the application of IR in smart web agents	S6	Research Articles Group Discussion Case studies	Exams Group Project Presentation

C. Course Content:

No	List of Topics	Contact Hours
1.	Introduction to IR & basic IR models	9
2.	Evaluation of IR	3
3.	Text representation	3
4.	Document Pre-processing	3
5.	Indexing	3
6.	Tolerant Retrieval	3
7.	Machine Learning in IR	6
8.	Performance Evaluation in IR	3
9.	Web Search: Introduction, Spidering, and Interfaces	6
10.	Structural Text Retrieval	3
Total		42

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework Assignments	6,13	10%
2.	quizzes	4,12	10%
3.	Project	15	15%
4.	Mid Term Exam	9	25%
5.	Final Exam	End of Semester	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities:

1. References and Learning Resources:





Essential References	Ricardo Baeza-Yates, Berthier Ribeiro-Neto “ Modern Information Retrieval: The Concepts and Technology behind Search ”, 2 nd Edition (2010) Addison-Wesley.
Supportive References	<ol style="list-style-type: none"> Christopher D. Manning, Prabhakar Raghavan and Hinrich Schütze, Introduction to Information Retrieval, (2008) Cambridge University Press. Soumen Chakrabarti, Mining the Web: Discovering Knowledge from Hypertext Data, (2002), Morgan-Kauffman.
Electronic Materials	Lecture Notes, ACM Digital Library, IEEE Computer Society, Web of Science
Other Learning Materials	

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Suitable Classroom with Audiovisual equipment and whiteboard
Technology equipment (Projector, smart board, software)	Data show, Internet connection
Other equipment (Depending on the nature of the specialty)	Access to digital libraries such as: IEEE, ACM, Saudi Digital Library

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Course evaluation survey conducted at the end of semester
Effectiveness of students assessment	Faculty, Peer reviewer	Teaching observation proforma (QMS annex O and annex P)
Quality of learning resources	Program Leaders	
The extent to which CLOs have been achieved	Head of department	QMS annex N form
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL / COMMITTEE	
REFERENCE NO.	





DATE

