2023
TP-153

Course Specification

(Bachelor)

Course Title:	Recommender Systems
Course Code:	CS1768
Program:	Computer Science
Department:	Computer Science and Engineering
College:	Computer Science and information technology
Institution:	Al Baha University
Version:	V1
Last Revision Date:	8/10/2023

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☐Required		☒ Elective		
3. Level/year at which this course is offered: (11/ 4)					
4. Course general Description:					
Recommender System (RS) class is designed to provide students with fundamentals of recommender system, the (CR) Collaborative Recommendation, and the (CB) Content-based recommendation. Students will also learn how to develop recommender system applications and how they fit into website. Knowledge-based recommendation and Hybrid recommendation approaches are also covered.					
5. Pre-requirements for this course (if any)**:**					
Programming 2 (CS1251)					
6. Pre-requirements for this course (if any)**:**					
Programming 2 (CS1251)					
7. Course Main Objective(s):					

The main purpose for this course is to teach students how to:

- **Describe principles of recommender systems.**
- **Memorize various recommender algorithms and approaches.**
- **Explain how to develop recommender systems.**
- **Demonstrate when and how to apply recommender systems techniques.**
- **Work both independently and collaboratively.**
- **Communicate concepts and techniques in oral presentations.**

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	22	50%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning	22	50%

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	22
2.	**Laboratory/Studio**	22
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		44

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	Describe principles of recommender systems.	K1	● Lecture/Slide Presentations ● Multimedia Presentations Assignments	● Midterm exam ● Final Exam Rubric
1.2	Memorize various recommender algorithms and approaches.	K2	● Lecture/ Slide Presentations ● Exercises ● Assignments Lab Exercises	● Midterm exam ● Final Exam ● Rubric Lab Exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.0	**Skills**			
2.1	Explain how to develop recommender systems.	S1	● Lecture/ Slide Presentations ● Exercises ● Assignments ● Lab Exercises ● Oral presentation	● Midterm exam ● Quiz ● Final Exam ● Rubric Lab Exam
2.2	Demonstrate when and how to apply recommender systems techniques.	S2	Group presentation	● Midterm exam ● Quiz ● Final Exam Rubric
2.3	Communicate concepts and techniques in oral presentations	S3	● Exercises ● Assignments ● Lab Exercises Oral presentation	● Midterm exam ● Quiz ● Final Exam ● Rubric Lab Exam
...				
3.0	**Values, autonomy, and responsibility**			
3.1	Work both independently and collaboratively	V1	● Oral presentation Lab Exercises	● Rubric Lab Exam

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction to recommender systems	3
2.	Collaborative recommendation	3
3.	Content-based recommendation	3
4.	Knowledge-based recommendation	3
5.	Hybrid recommendation approaches	4
6.	Explanations in recommender systems	3
7.	Attacks on collaborative recommender systems	3
Total		**22**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm	6 **or 7**	20%
2.	Homework	10	10%
3.	Course Project	12	10%
4.	Lab Activities and Exam	12	20%
5	Final Exam	13	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	DietmarJannach et. al,, Recommender Systems: An Introduction, by Cambridge University Press, 2022.
Supportive References	● Computer Science Curriculum 2013 – http://cs2013.org ACM (Association for Computer Machinery) Curricula http://www.acm.org/education/curricula-recommendations
Electronic Materials	● Access to the Saudi Digital Library (SDL). Using the learning management system of the university – Rafid System (https://lms.bu.edu.sa/).
Other Learning Materials	**Youtube and other site**

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	● A classroom or lecture hall with whiteboard for 25 students. Computer laboratory
Technology equipment (projector, smart board, software)	● A digital image projection system with connection to desktop computer and laptop computer. ● High speed Internet connection. Instructor computer station.
Other equipment (depending on the nature of the specialty)	code.google.com/apis/console

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	● Peer Reviewers ● Course Coordinator	● Surveys (indirect).
Effectiveness of Students assessment	● Faculty ● Course Coordinator	● Assessment results (direct)
Quality of learning resources	● Faculty ● Course Coordinator	Course report.
The extent to which CLOs have been achieved	● Faculty	● Student Results (direct)
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**DEPARTMENT COUNCIL MEETING**
REFERENCE NO.	**8TH**
DATE	