هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Discrete Structures**
Course Code:	**CS1003**
Program:	**Bachelor of Computer Science Program**
Department:	**Computer Science**
College:	**Computer Science and Information Technology**
Institution:	**Al Baha University**
Version:	**V1.0**
Last Revision Date:	**3/4/2023**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3 Hours				
2. Course type					
a.	University ☐	College ☒	Department☐	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered:	2nd Level (1st Year)				
4. Course general Description This course provides an overview of Discrete Structure for Computing. Topics to be covered include Explain the Basic Logic, the Sequences, Mathematical Induction, Recursion and Recurrence Relations, Sets, Relations, and Functions, Elementary Number Theory and methods of Proof, and the Basics of Counting. And Graphs and Tree.					
5. Pre-requirements for this course (if any): None					
6. Co- requirements for this course (if any): None					
7. Course Main Objective(s) The main purpose for this course is to teach students how to: • Recognize Basic Logic. • Define the different strategies of Mathematical Proof • Describe the mathematical concepts Sets, Relations, Functions, Graphs and Trees. • Justify the Truth of a certain proposition. In addition, prepare a Mathematical Proof of a given problem. • Differentiate between sets, relations, and functions. • Calculate matrix addition and multiplication. Evaluate basic counting problems. • Work both independently and collaboratively					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	3 hours / week	100 %
2.	E-learning	0	0 %
3.	Hybrid • Traditional classroom • E-learning	0	0 %
4.	Distance learning	0	0 %

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	(3 hours) x (11 weeks)
2.	Laboratory/Studio	0
3.	Field	0
4.	Tutorial	0
5.	Others (specify)	0
	Total	33 hours

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	Recognize Basic Logic	K1	Lectures Assignments	Homework Midterm Exam Quiz
1.2	Define the different strategies of Mathematical Proof	K2	Lectures Assignments	Homework Midterm Quiz Final Exam
1.3	Describe the mathematical concepts Sets, Relations, Functions, Graphs and Trees.	K3	Lectures Assignments	Homework Midterm Quiz Final Exam
2.0	Skills			
2.1	Justify the Truth of a certain proposition. In addition, prepare a Mathematical Proof of a given problem.	S1	Lectures Assignments	Homework Midterm Quiz Final Exam
2.2	Differentiate between sets, relations, and functions.	S2	Lectures Assignments	Homework Midterm Quiz Final Exam
2.3	Calculate matrix addition and multiplication. Evaluate basic counting problems.	S3	Lectures Assignments	Homework Quiz Final Exam
3.0	Values, autonomy, and responsibility			
3.1	Work both independently and collaboratively	V1	Assignments	Class Discussion

C. Course Content

No	List of Topics	Contact Hours
1.	Logic	4
2.	Sets	3
4.	Mathematical Proof	4
5.	Relations	3
6.	Functions	3
7.	Matrix Algebra	4
8.	Basic Counting	3
9.	Graph	3
10.	Tree	3
Total		33

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	Bi-Weekly	10%
2.	Midterm	6	20 %
3.	Quiz	8	10 %
4.	Class Discussion	Every week	10 %
5.	Final Exam	12	50 %

*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	• Rosen K., Discrete Mathematics and its applications, seventh edition, McGraw Hill, 2012. • Discrete Mathematics with Applications" by Susanna S. Epp, 4th ed., 2011, Thomson Brooks/Cole. • Discrete Mathematics for new Technology" by R GARNIER AND J TAYLOR
Supportive References	• Discrete Mathematics, 7th Edition 7th Edition: ISBN-13: 978- 0131593183 by Richard Johnsonbaugh. Publisher: Pearson; 7th edition (December 29, 2007) • A Discrete Introduction 3rd Edition: ISBN: 9780840065285 Author: Edward R. Scheinerman. • Using the learning management system of the university - Rafid System
Electronic Materials	• The Math Forum at Drexel - http:l lmathforum.org lllbraryltopics/discretei • MathWorld of Wolfram Research - http:I I mathworld.wolfram.com/

Other Learning Materials	None

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.
Technology equipment (projector, smart board, software)	• Data Show • Updated version of subject syllabus is uploaded for student reference. • High-speed Internet connection. • An instructor computer station.
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	• Course Coordinator	• Survey (indirect) • Exam Review (direct)
Effectiveness of students' assessment	• Students • Exam Evaluation Committee • Course Coordinator	• Survey (indirect) • Exam Review (direct) • Review of course file (direct)
Quality of learning resources	• Faculty • Students	• Survey (indicator)
The extent to which CLOs have been achieved	• Faculty • Program Leaders or Course Coordinator	• Exam • Exit Exam (direct)
Other		

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

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	