هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Mathematics**
Course Code:	180 حال-2
Program:	**Programming and Database**
Department:	**computer department**
College:	**Applied College**
Institution:	Najran University
Version:	**T -104 2022**
Last Revision Date:	**19 Aug 2023**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	2(2,0)				
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered: Level: : 2nd Level					
4. Course general Description This course Introduces the main concepts of number systems, Binary, Decimal, Octal and Hexadecimal, Number System and their Conversion. Decimal to binary, decimal to octal, decimal to hexadecimal., Binary to decimal, binary to octal, binary to hexadecimal. Octal to binary, octal to decimal and octal to hexadecimal. ,Hexadecimal to decimal, hexadecimal to binary and hexadecimal to octal , Logical gates: Truth table, AND, OR, NOT, BUFFER, NAND, NOR XOR, XNOR GATES. , Introduction to Boolean Algebra: Logical diagram, Basic identities of Boolean algebra, functions and differentiation rules. , Introduction to sets, K-Maps and graphs.					
5. Pre-requirements for this course (if any): Not Exist					
6. Co- requirements for this course (if any): Not Exist					
7. Course Main Objective(s) 1.Understand the basic concepts of computer mathematic 2. Build a strong mathematical background for future study in computer science. 3. Understand the concept of mathematical skills by using the proper logical thinking. 4. Train students to know methods and solution strategies. 5. Use a basic background in analysis					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	2 hours per week	95%
2.	E-learning		5%
3.	Hybrid • Traditional classroom • E-learning		
4.	Distance learning		
TOTAL			100%

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	0
3.	Field	
4.	Tutorial	
5.	Others (specify)	
	Total	30

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	Define the main concepts of sets and their operations	K1	1.Interactive lectures 2. Self-studying 3. Lecture 4. Problem solving	1. Homework 2. Quizzes 3. Exams
1.2	Mentioning related mathematical definitions and theorems	K2		
1.3	recognize of logic gates, Boolean algebra and thier functions	K3		
2.0	Skills			
2.1	Solve the problems of the number system and inter conversion.	S1	1.Interactive Lectures 2. Self-studying 3. Lecture 4. Problem solving	1. Homework 2. Quizzes 3. Exams
2.2	Differentiate between various definitions and theorems of logic gates	S2		

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.3	Build truth tables for Boolean expressions.	S3		
3.0	Values, autonomy, and responsibility			
3.1	Respects others in various work environments and takes responsibility for decision-making	V1	1.Interactive Lectures 2. Self-studying 3. Lecture 4. Problem solving	1. Homework 2. Quizzes 3. Exams
3.2	Practice and Innovation in work professionally in mathematics	V2		

C. Course Content

No	List of Topics	Contact Hours
1.	The number systems, Binary, Decimal, Octal and Hexadecimal	2
2.	number System and their Conversion. Decimal to binary, decimal to octal, decimal to hexadecimal.	4
3	Binary to decimal, binary to octal, binary to hexadecimal. Octal to binary, octal to decimal and octal to hexadecimal.	4
4	Hexadecimal to decimal, hexadecimal to binary and hexadecimal to octal	4
5	Foundation of Logic , Proposition , The Propositions Not , Or , And , Exclusive-or , Bi-conditional and Implication , Logic in Binary system , Bit strings	5
6	Logical gates: Truth table, AND, OR, NOT, BUFFER, NAND, NOR XOR, XNOR GATES.	4
7	Boolean Algebra , Variables , Operations , Boolean Expressions of degree n , Boolean Functions of degree n , Complement of Boolean Functions , Sum of Boolean Functions , Product of Boolean Functions.	5
8	Introduction to sets, K-Maps and graphs	2
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz 1	3	10%
2.	Quiz 2	5	10%
3.	Assignments	10	10%
4	Midterm 1 Exam	8	20%
5	Final Examination	17	50%
6	Total		100%

*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	•Kenneth H. Rosen , DISCRETE MATHEMATICS AND ITS APPLICATIONS, SEVENTH EDITION, McGraw-Hill, 2012, ISBN 978-0-07-338309-5
Supportive References	
Electronic Materials	http://lib.nu.edu.sa/DigitalLibbrary.aspx
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	1.Lecture Room with enough capacity Chairs Projector/Screen 2. Laboratories with Computers
Technology equipment (projector, smart board, software)	1.Laboratories computer and library for math books 2. Projectors, Computer for Theory Classes and Presentation Sessions.
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Course Teacher	Direct
Effectiveness of students assessment	Students	Indirect
Quality of learning resources	Course Teacher	Direct
The extent to which CLOs have been achieved		
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	