

Course Profile

Course Name:-	Discrete Mathematics
Course Code:-	MATH 111
Academic Year:-	1434-1435
Semester:-	First

Course Overview

For most students, the first and often only area of mathematics in college is calculus. And it is true that calculus is the single most important field of mathematics, whose emergence in the 17th century signalled the birth of modern mathematics and was the key to the successful applications of mathematics in the sciences. But calculus (or analysis) is also very technical. It takes a lot of work even to introduce its fundamental notions like continuity or derivatives. To get a feeling for the power of its methods, say by describing one of its important applications in detail, takes years of study. If you want to become a mathematician, computer scientist, or engineer, this investment is necessary. But if your goal is to develop a feeling for what mathematics is all about, where is it that mathematical methods can be helpful, and what kind of questions do mathematicians work on, you may want to look for the answer in some other fields of mathematics.

Course Details

Level:-	3
Credit:-	(3,0,1)
Pre-Requisites:-	None
Co- Requisites:-	None

Learning Outcomes of Course

After successful completion of this course, student will be able to-

1. Understand The basic and fundamentals tools of Discrete Mathematics.
2. to apply differential in various applications in real-time.
3. Improve his thinking for solving problems.

Course Assessment

Name of Assessment Task	Weight of Assessment	Week Due
1. Midterm Exam-1	20%	6
2. Midterm Exam-2	20%	10
3. Quizzes	10%	
4. Assignments/Report/Seminar	10%	
5. Final Exam	40%	

Assessment Task and Learning Outcomes Alignment

Assessment Task Name	Course Learning Outcomes					
	1	2	3	4	5	6
1. Midterm Exam-1	√	√				
2. Midterm Exam-2	√	√	√			
3. Quizzes	√	√	√			
4. Assignments/Report/Seminar	√	√	√			
5. Final Exam	√	√	√			

Teaching Contact Details

Name of Course Coordinator:-	Dr. Mohamed Anadani
Email of Course Coordinator:-	m.anadani@mu.edu.sa
Lab/Tutorial Instructor:-	Mr. Mohamed Rafiq
Email of Lab/Tutorial Instructor:-	m.rafiq@mu.edu.sa
Office Hours:-	Wed. 12.00-12.50
Office Number:-	
Office Phone Number:-	2533

Details of Required Text Book

Book Name	Authors Name	Publisher	Year	Edition
1.	Kenneth H. Rosen	McGraw- Hill	2007	6 th

Details of Required Reference Books

Book Name	Authors Name	Publisher	Year	Edition
1.	John A. Dossey, Albert D. Otto, Lawrence, E. Spence, and Charles Vanden Eynden	Addison, Wesley	2005	5 th

IT Resources

The following IT Resources will require to access-

- Faculty Website (Dr Mohamed Anadani)
- <http://mathvids.com/topic/mathhelp/20-discrete-math>

Course Schedule

Course Topics	Book's Chapter	Event Name	Week Due
Simple and compound statements.	1		Week-1
Logical connectives.	1		Week-2
Truth tables, Basic logic laws	1		Week-3
Operations on sets.	2		Week-4
Basic laws of set theory.	2		Week-5
Cartesian product of sets.	2		Week-6
Proof Strategy, Direct Method, the Contrapositive Method, the Contradiction Method	1		Week-7
Mathematical Induction	4		Week-8
Structural Induction	4		Week-9
Algorithms, Examples of Algorithms	3		Week-10
Recursive Definitions, Recursive Algorithms	3		Week-11
Integers and Division	3		Week-12
The Pigeonhole Principle	5		Week-13

Permutations and Combinations, Binomial Coefficients	5		Week-14
Graphs	6		Week-15
			Exam Week

Referencing Style

The **American Psychological Association (APA)** referencing style must be used for all submissions of this course.

Course Assessment Task

Assessment Name:-	Midterm Exam-1
Description of Task Assessment:-	This assessment is aligned to learning outcomes 1 and 2. In that regard, the assignment contains questions that assess: 1) students' thorough understanding of Simple and compound statements, truth tables, Basic logic laws; 2) students should apply operations on sets, and proof Strategy.
Task Assessment Due Week/Date:-	Week 6
Return Week/Date to Students:-	Week 8
Weight of Task Assessment:-	20%
List of Learning Outcomes Assessed:-	<ol style="list-style-type: none"> 1. Understand The basic and fundamentals tools of Discrete Mathematics. 2. You will be able to apply differential in various applications in real-time.

Assessment Name:-	Final Exam
Weight of Task Assessment:-	40%
Duration:-	120min
Warning:-	Calculator Permitted Closed Books
List of Learning Outcomes Assessed:-	<ol style="list-style-type: none"> 1. Understand The basic and fundamentals tools of Discrete Mathematics. 2. You will be able to apply differential in various applications in real-time. 3. Improve your thinking to solve problems.