



### Discrete Mathematics

## Description

**Dr. Ahmed Hagag** 

Faculty of Computers and Artificial Intelligence
Benha University

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## **Introduce Myself**

## Dr. Ahmed Hagag

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### **Basic Course Information**

- Course code: FBS102-NBS102
- Course name: Discrete Mathematics
- Level: 1st Year / B.Sc.
- Course Credit: 3 credits
- Instructor: Dr. Ahmed Hagag



#### **Assessment**

**Final Exam** 

**50** 

الامتحان النهائي

**Midterm** 

15

منتصف الفصل

**Section** 

**20** 

حضور و واجبات ومشاركة في السكاشن

Quizzes

**10** 

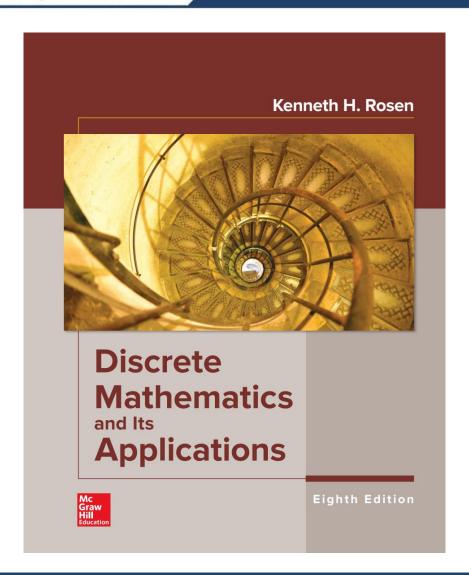
الاختبارات الفصلية Attend

5

حضور



### **Lectures Reference**



# **Textbook** 2019

https://drive.google.com/drive/folders/1
a2rpYLZtEzuTyRZVqkN1mAnvlATd1dq6?u
sp=sharing



### **Course Objectives**

- Learn how to think mathematically.
- Grasp the basic logical and reasoning mechanisms of mathematical thought.
- Acquire logic and proof as the basics for abstract thinking.
- Improve problem-solving skills.
- Grasp the basic elements of induction, recursion, combination and discrete structures.



### **DM** is a Gateway Course

Topics in discrete mathematics will be important in many courses that you will take in the future:

- Computer Science: Computer Architecture, Data Structures, Algorithms, Programming Languages, Compilers, Computer Security, Databases, Artificial Intelligence, Networking, Graphics, Game Design, Theory of Computation, .....
- Mathematics: Logic, Set Theory, Probability, Number Theory, Abstract Algebra, Combinatorics, Graph Theory, Game Theory, Network Optimization, ...
- Other Disciplines: You may find concepts learned here useful in courses in philosophy, economics, linguistics, and other departments.



### **Course Syllabus**

### Some topics from the following chapters:

- The Foundations: Logic and Proofs.
- Basic Structures: Sets, Functions, Sequences, and Sums.
- Algorithms.
- Number Theory and Cryptography.
- Induction and Recursion.
- Relations.
- Graphs.
- Trees.

## Thank You

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