# Discrete Structures 2

Dr. Hatim Alsuwat

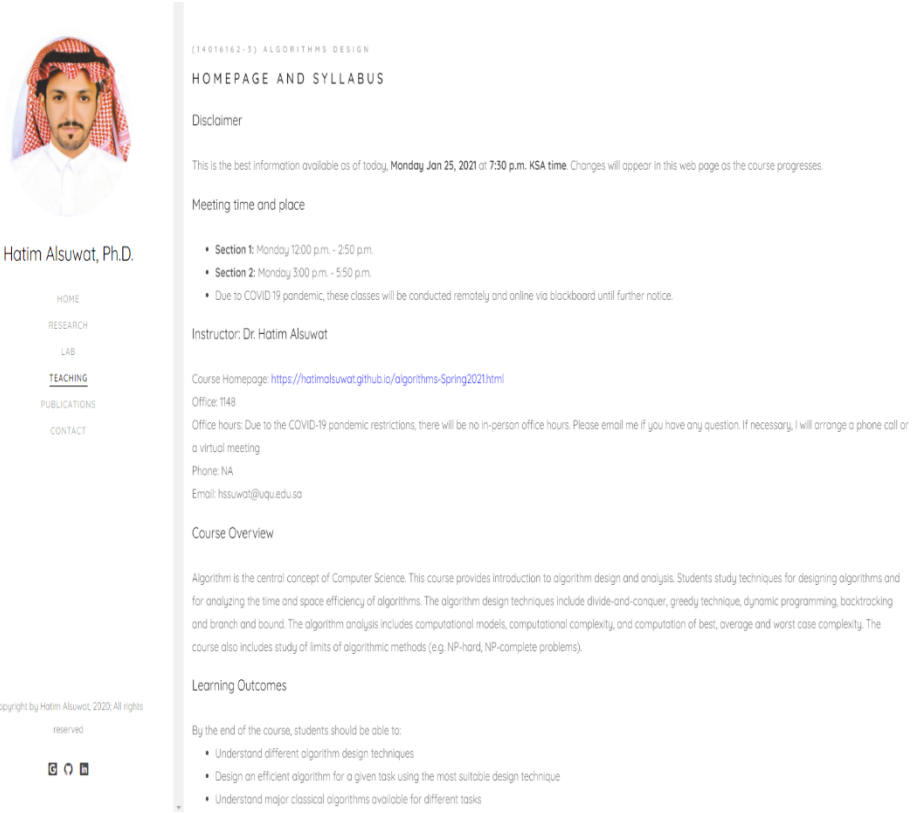
Faculty of Computers and Information Systems

UMM ALQURA UNIVERSITY

2023 1st TRIMESTER

# Course Information

https://hatimalsuwat.github.io/DM2-1sttrimester.html



Hatim Alsuwat, Ph.D.

HOME
RESEARCH
LAB
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PUBLICATIONS
CONTACT

(14016162-3) ALGORITHMS DESIGN

HOMEPAGE AND SYLLABUS

Disclaimer

This is the best information available as of today, **Monday Jan 25, 2021** at **7:30 p.m. KSA time**. Changes will appear in this web page as the course progresses.

Meeting time and place

- **Section 1:** Monday 12:00 p.m. - 2:50 p.m.
- **Section 2:** Monday 3:00 p.m. - 5:50 p.m.
- Due to COVID 19 pandemic, these classes will be conducted remotely and online via blackboard until further notice.

Instructor: Dr. Hatim Alsuwat

Course Homepage: https://hatimalsuwat.github.io/algorithms-Spring2021.html
Office: 1148
Office hours: Due to the COVID-19 pandemic restrictions, there will be no in-person office hours. Please email me if you have any question. If necessary, I will arrange a phone call or a virtual meeting
Phone: NA
Email: hssuwat@uqu.edu.sa

Course Overview

Algorithm is the central concept of Computer Science. This course provides introduction to algorithm design and analysis. Students study techniques for designing algorithms and for analyzing the time and space efficiency of algorithms. The algorithm design techniques include divide-and-conquer, greedy technique, dynamic programming, backtracking and branch and bound. The algorithm analysis includes computational models, computational complexity, and computation of best, average and worst case complexity. The course also includes study of limits of algorithmic methods (e.g. NP-hard, NP-complete problems).

Learning Outcomes

By the end of the course, students should be able to:

- Understand different algorithm design techniques
- Design an efficient algorithm for a given task using the most suitable design technique
- Understand major classical algorithms available for different tasks



## Communication:

- Announcements on webpage/ emails/ blackboard
- Questions? Email me.
- Staff email: hssuwat@uqu.edu.sa

## Course technology:

- Website
- UQU Blackboard
- Regular homework
- Help us make it awesome!

# Course Information

- Course Website https://hatimalsuwat.github.io/DM2-1sttrimester.html
- Discussion:
  - Please ask any question during the lecture (don't be shy)
  - There is no such thing as a stupid question.
  - Answer others' questions - if you know the answer ;-)
  - Learn from others' questions and answers

# Course Information

- **Grading:**
  - **Midterm Exam: 20%**
  - **Quizzes: 20%**
  - **Practical: 20%**
  - **Final Exam: 40%**

- **Total score that can be achieved: 100**

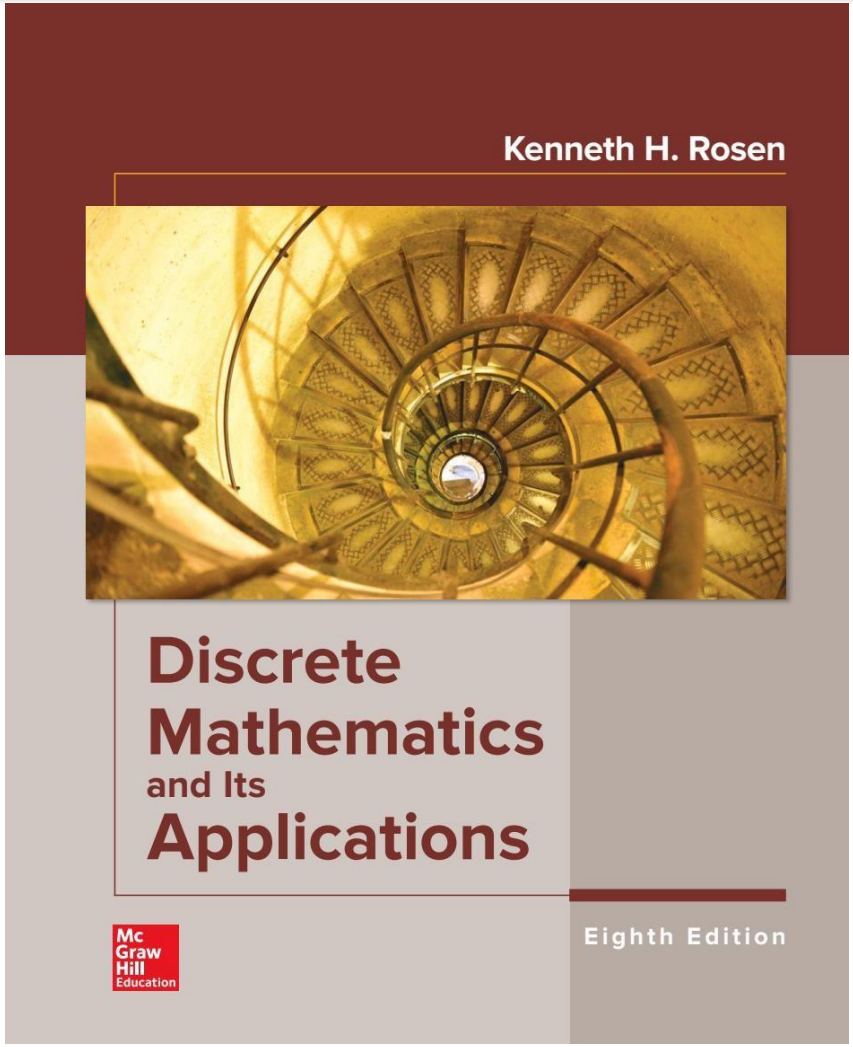
# Course Information

- **Meeting time and place:**
  - **Office:** Department of Computer Science (office #1148)
  - **Office hours:** Please email me if you have any question. If necessary, I will arrange a phone call or in-person meeting
  - **Email:** Hssuwat@uqu.edu.sa

# Course Information: Feedback

- Please give feedback positive or negative as early as you can via email.

# Lectures Reference




**Textbook 2018**

# Topics covered in Discrete Structures ( I )

- ✓ Propositional Logic
- ✓ Predicate Logic
- ✓ **Sets**
- ✓ **Functions**
- ✓ Proofs
- ✓ Sequences
- ✓ Sums
- ✓ Induction

In this course we will need every concept we have introduced in Discrete Structures ( I ) .