Discrete Mathematics

Introduction

School of Computer Science

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Instructor

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– QQ Group: 981534489

2020 Discrete mathematics

– WeChat:

2020_Discrete Mathematics

– Office Hours :

14:00~16:00 ~~y @room 324 , or after~~ class

该二维码7天内(9月22日前)有效，重新进入将更新

– Assistant instructor: 肖淞 Xiao Song

– Wechat: xs1102713922

– QQ:

NWPU

Goals

- Learn a particular set of mathematical facts
- Apply these mathematic to solve problem
- Think logically and mathematically
- Five parts:
  - Mathematical reasoning
  - Combinatorial analysis
  - Discrete structures
  - Algorithmic thinking
  - Application and Modeling

What is it?

- Discrete mathematics is the part of mathematics devoted to the study of discrete objects.

- *Can solve problems such as*:
  - How many ways are there to choose a valid password on a computer system?
  - How can I identify spam e-mail messages?
  - What is the shortest path between cities?
  - How many steps are needed to do s sorting.

Why we need it?

- You can develop mathematical maturity(ability to understand and create mathematical arguments). This is important for further studies.

- It is a gateway to more advanced courses including data structures, algorithms, database, automata theory compiler and operating systems.

- It is the fundament of other mathematics, such as logic, set theory, number theory linear algebra, abstract algebra, combinatorics and graph theory.

How to learn it?

- The best way to learn a mathematics is understand it and do **a lot of exercises.**
  - Knowledge—learn the concepts, rules and how to proof them.
  - Skill—learn how to abstract the real world problem into mathematic model, how to apply the knowledge solve problems.
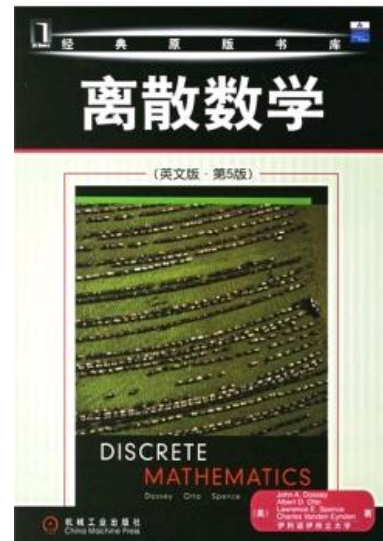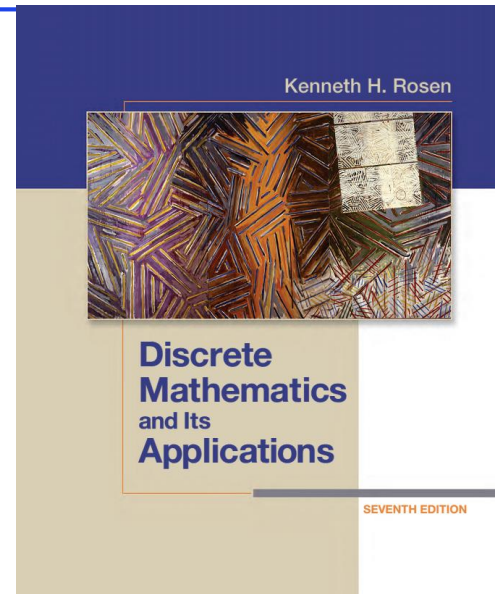
Key to the Exercises

|	
no marking	A routine exercise
*	A difficult exercise
**	An extremely challenging exercise
☞	An exercise containing a result used in the book (Table 1 on the following page shows where these exercises are used.)
(*Requires calculus*)	An exercise whose solution requires the use of limits or concepts from differential or integral calculus

Reference

- Text：
  - Discrete Mathematics and its Application, Kenneth H.Rosen（7th version），2012
  - *www.mhhe.com/rosen*
- Other reference Text
  - Discrete Mathematics for Computer Sciences, Clifford stein,2010
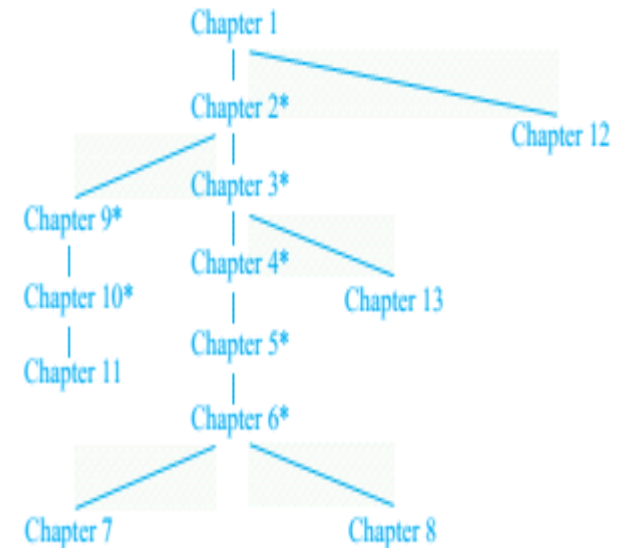 - Discrete mathematics, John, A.Dassey , 2007

Schedule

Lecture

16th week

Exercise

Final Exam

Exam

18th week

Time

2020.9.16

2020.12.18   2020.12.?
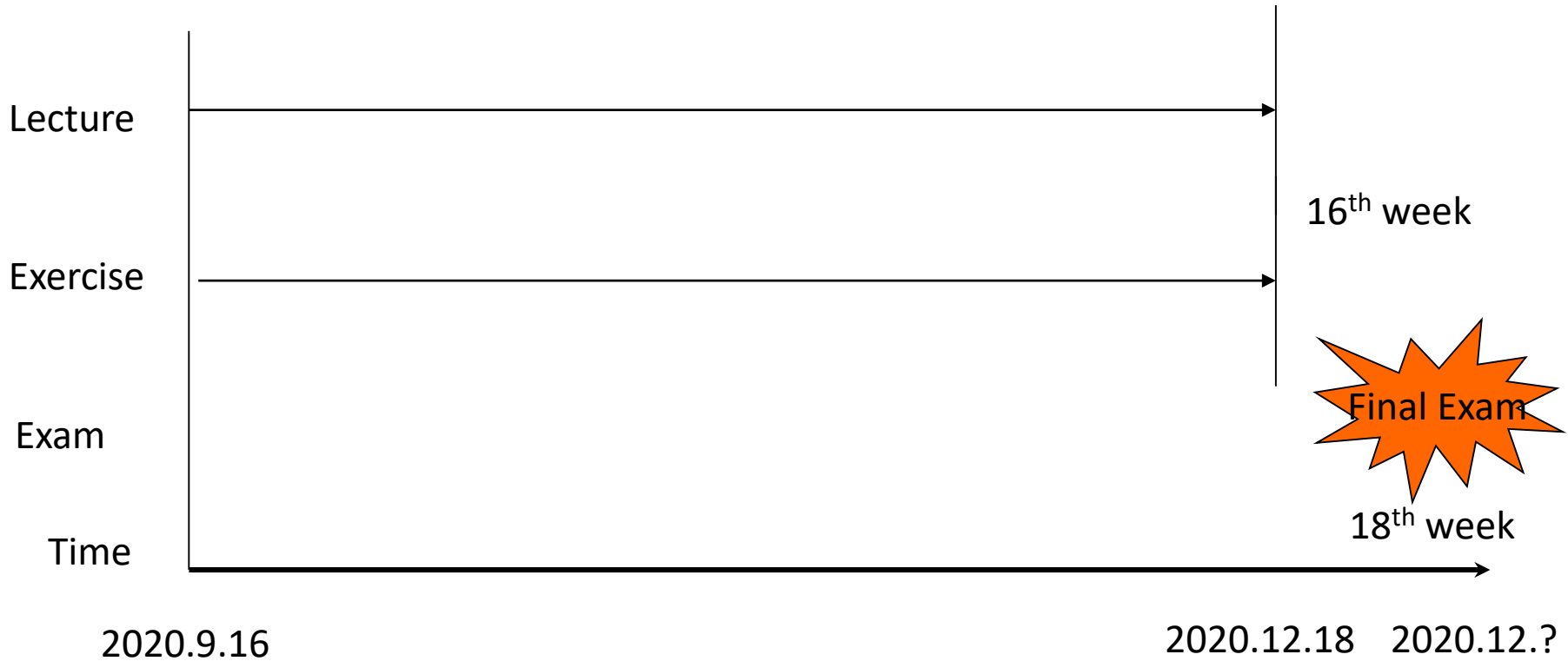
Schedule

1. Introduction and chapter 1   8 hours
2. Chapter 2   6 hours
3. Chapter 3   6 hours
4. Chapter 4   6 hours
5. Chapter 5   6 hours
6. Chapter 6   6 hours
7. Chapter 8   6 hours
8. Chapter 9   6 hours
8. Chapter 12   2 hours

   Total   52 hours   +4 exercise hours

Credit

- ## Lecture: 3.5
  - Daily practice group online) 20%(submit by QQ
  - Final examination 80%
    - Completion
    - Choice question

Level	Percent
No Marking	70%
*	20%
**	10%

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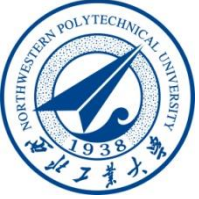
Other

- If you have any question, you can email me
  （zhangxiao@nwpu.edu.cn）

- Anyone who absent three times will be disqualified

- ~~Please set your phone to silent mode in the class.~~

At last

- The best way to learn a mathematics is to do more and more exercises. Our textbook provides many exercises, and you can do extra exercises besides the homework.

- The homework and examine will arrange 70% routine exercise, 20% different exercises and 10% challenging exercises. The good news is that examine will pick from textbook(not limit to homework).

- Discrete Mathematics is difficult, you must reserve 4 hours every week at least to finish the homework.