

cse547
DISCRETE MATHEMATICS

Professor Anita Wasilewska

Fall 2023

COURSE SYLLABUS

Course Web Page
www3.cs.stonybrook.edu/~cse547

The course webpage contains
detailed **Lectures** slides
very detailed **solutions** to homework problems
some of the previous **quizzes** and **tests**
all materials are designed to help you to **study**

Course Text Book

Concrete Mathematics

A Foundations for Computer Science

R. Graham, D. Knuth, O. Patashnik

Addison-Wesley Publishing Company, Third edition

Concrete Mathematics is defined in the book as

"a controlled manipulation of (some) mathematical formulas using a collection of techniques for solving problems"

Original textbook was an extension of the chapter

"Mathematical Preliminaries" of Knuth's classical book
[Art Of Computer Programming](#)

Concrete Mathematics hopefully will help you in the art of
writing programs and in better thinking about them

Course Description

We will cover the **course textbook** closely

We plan to cover all or some of material from **Chapters 1-5**

The textbook is supplemented by very detailed **Lecture Notes**

Lecture Notes contain a lot of **additional material extending** the very concise book presentations

Course Description

The **course webpage** includes well written and detailed **solutions** of majority of **Homework Problems** from the chapters we plan to cover

Students are advised to **work to solve** the assigned Homework Problems, write their own **solutions**

Then they can use the **published solutions** to **compare** them with their own solutions for **precision** and **correctness**

Course Description

If time allows we will also cover some chosen topics in classical **Discrete Mathematics**

In this case I will provide **Lecture Notes** and **sets of Problems**

You can also use any Discrete Mathematics book as an extra reading, if needed

Grading

There will be **three tests**:

Midterm 1, Midterm 2, and Final

All tests are **CLOSED NOTES** and **CLOSED BOOK**

If a student is **found using** notes or a book during a test, he/she will receive **AUTOMATICALLY 0pts** for a given test

Grading

Homework Problems

There are 6 sets of **homework problems**

Not all of them might be covered

None will be collected or graded

Solutions to homework problems are **published**
on the course webpage

Students can use them to **verify correctness** their their own
solutions and to better **learn** the material

Tests Grading

On **all Tests** students are expected to write **solutions** explaining **all steps** and **methods** used as presented in the **Lecture Notes** and in posted **Homeworks Solutions**

TESTS Grades will depend on the **form, attention to details, carefulness** and **style** of your **solutions writing**

Grading Components

Midterm 1 - 60pts

Midterm 2 - 60pts

Final - 80pts

Final Grade Computation

Attention

NONE of GRADES will be CURVED

During the semester you can earn **200pts**

The **% grade** will be determine in the following way:

of earned points divided by 2 = % grade

Final Grade Computation

The % grade is translated into a letter grade in a standard way i.e.

100 – 95 % is **A**

94 – 90 is **A–**

89 – 86% is **B+**, 85 – 83 % is **B**, 82 – 80 % is **B–**

79 – 76 % is **C+**, 75 – 73 % is **C**, 72 – 70 % is **C–**

69 – 60 % is **D range** and

F is below 60%

Course Contents and Schedule

Part One: Concrete Mathematics

The course will follow the book very closely and in particular we will cover some, or all of the following chapters and subjects.

Chapter 1 Recurrent Problems, pp 1-21

Chapter 2 Sums, pp 21-67

Chapter 3 Integer functions, pp 67 -102

Chapter 4 Number Theory, pp 102- 123

Chapter 5 Binomial Coefficients pp 153- 204

Chapter 6 Special numbers pp 243- 264 (reading)

Discrete Mathematics - if time allows

Some Lecture Notes and Problems (Hmk 6) are posted on the course webpage

We will cover them if time allows

PRELIMINARY TESTS SCHEDULE

This is a **preliminary schedule**

Changes and updates, if any, will be advertised in the **NEWS** section on the course webpage

MIDTERM 1 Tuesday, **October 3**

Fall Break October 9 - October 10

MIDTERM 2 Tuesday, **November 14**

Thanksgiving Break November 22 - November 26

Last Day of classes December 11

FINAL during Final Period -**December 12 -21**