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
Concrete Mathematics
A Foundations for Computer Science
R. Graham, D. Knuth, O. Patachtenik
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
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

Grading Components
During the semester there will be a Practice Midterm, a Midterm, three One Question Quizzes and a Final examination.
There also will be assigned sets of homework problems students must work out and learn for the tests.
The complete set of solutions to all homework problems are posted on the course webpage.
Grading Components

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 on the course webpage for students to be able to check correctness their own solutions! and to help them study the material
Grading Components

On **Quizzes** and **Tests** students are expected to write **detailed solutions** explaining all steps and methods used, as it is done in our **Lecture Notes** and in posted **Homeworks Solutions**

We will **cover** some of such detailed solutions **in class**

**Grades** for **Quizzes and Tests** will depend on the form, details, and carefulness of your written solutions
Grading Components

There will be the following Tests and Quizzes

3 Quizzes (25pts each)
These are one question, 10 -15 minutes Quizzes covering Homework and Lectures problems

Practice Midterm (25pts) - in class

Midterm (100pts) - in class

Both tests cover material from chapters 1, 2 covered in class before the test and corresponding Homework problems solutions examples as posted on the course web page.

Final (100pts) - in class

It will cover all book material covered in class, as reflected in Tests and Quizzes.
Grading Components

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

A student found using **notes in any form** (especially electronic) during a **test** will receive **0 pts** for the test.
NONE of GRADES will be CURVED

Records of students grades are being kept by the course TA
During the semester you can earn 300pts or more (in the case of extra points)
The % grade will be determine in the following way:
# of earned points divided by 3 = % grade
The % grade is translated into a letter grade in a standard way as follows

100 - 90% is A range
A (100 - 96%), A- (95 - 90%)

89 - 80% is B range
B- (80 - 82%), B (83 - 85%), B+ (86 - 89%)

79 - 70% is C range:
C- (70 - 72%), C (73-75%), C+ (76-79%)

69 - 60% is D range
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
TESTS SCHEDULE

This is a preliminary schedule
Changes and updates, if any, will be advertised in the NEWS section on the course webpage

Q1 Monday, February 12
Practice Midterm  Monday, March 5, in class.
Use it as your own PRACTICE - write carefully all solutions
Only one Problem will be corrected

Spring Break  MARCH 12 - 18

Midterm  FRIDAY, March 23, in class
It covers homework problems from chapters 1, 2 (all solutions posted on the course web page), plus problems in the Lecture Notes that were covered in class before the Practice Midterm
TESTS SCHEDULE

Q2  Monday, April 9
Q3  Monday, April 23
May 4

FINAL  FRIDAY, May 4 in class

Final covers homework problems from all Quizzes, hmks and Tests