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

The webpage contains:
detailed lectures slides;
very detailed solutions to homework problems;
some of previous tests;
all to be used for study
Concrete Mathematics
A Foundations for Computer Science
R. Graham, D. Knuth, O. Patachnik
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 "Mathematical Preliminaries" of Knuth’s book of ART OF COMPUTER PROGRAMMING

Concrete Mathematics is supposed (and hopefully will) to help you in the art of writing programs and thinking about them
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 often contain some additional material extending very concise book presentations. The course webpage also includes detailed solutions of majority Homework Problems from the chapters we plan to cover. Students need to solve them, compare with presented solutions for the precision and correctness. The precision of their work will be tested on tests.
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.
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 problems are posted on the course webpage.

The book also contains majority of solutions but they often are just answers, or are not complete so I provide you with well written, complete solutions to study from.
Grading Components

Homework Problems
There are 6 sets of 6 Homework problems. **Not all of them might be covered.**

None will be collected or graded

Solutions to homework problems are on our webpage for you to check correctness your own solutions! and to help you study

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

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

Practice Midterm (25pts)

Midterm (100pts)
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)
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.

If a student is found using notes or a book during a test, he/she will receive AUTOMATICALLY 0 pts for a given test.
NONE of GRADES will be CURVED
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

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

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

Q1 Monday, February 13

Practice Midterm  Wednesday, March 8, in class.
Use it as your own PRACTICE - write carefully all solutions
Only one Problem will be corrected

Spring Break  MARCH 13 - 19

Midterm  Monday, March 20, 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 10

**Q3**  Monday, April 24

Last Day of Classes  May 3

**FINAL** will be given during the Finals week, May 9 - 17, exact time and place t.b.a.

Final covers homework problems from all chapters that were covered in class