COURSE SYLLABUS
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. 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
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 a 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 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
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