

ESE 554 Computational Models for Computer Engineers Spring 16

Dept. of Electrical and Computer Engineering
SUNY Stony Brook

Course Description

This course covers mathematical techniques and models used in the solution of computer engineering problems. The course emphasizes computer engineering applications. Topics include set theory, combinations, relations, functions, graphs and trees, computational complexity, non-linear equations and differential equations.

Instructor : Dr. Chi Chen

Light Engineering Building, Room 208, email: ccharles888@yahoo.com

Office Hours: Thursdays 8:30-10:00pm

Class Meetings: Tuesdays 7:00-10:00 pm, HARRIMAN HLL 112

Objective

This course is preparatory for engineering practice and advanced study in computer engineering. It is intended to provide the students with analytical and computational background for solving engineering problems. Issues on discrete mathematics, numerical analysis, and their applications to computer engineering will be discussed. The presentation is intended to motivate and encourage applications of the course material to solving practical engineering problems. Problem solving and analysis will be emphasized throughout.

Reference Books. (Recommended but not required)

C.L. Liu, Elements of Discrete Mathematics, Second Edition, McGraw Hill, 1985

Gary Haggard, John Schlipf, Sue Whitesides, Discrete Mathematics for Computer Science, Cengage Learning, 2005

Winfried K Grassmann & Jean-Paul Tremblay, Logic And Discrete Mathematics-A Computer Science Perspective, Prentice Hall, 1996

Course Outline

- Sets
- Permutations and Combinations
- Relations and Functions
- Graphs and Trees
- Time Complexity of Algorithms
- Recurrence Relations and Recursive Algorithms
- Iterative Solution of Non-Linear Equations
- Numerical Solution of Differential Equations

Grading System

There is one mid-term exam and a final exam. The final grade will be computed as follows:

Mid Term Exam : 40%

Final: 60 %

Grades are assigned based on absolute percentage of total marks as below
(This policy is subject to change).

A : 91—100 , A- : 86—90 , B+ : 81—85, B : 76—80, B- : 71--75

C+ : 68—70, C : 64—67, C- : 61—63, D+ : 56—60, D : 51—55, F : 0--50

Note

If you have a physical, psychological, medical or learning disability that may impact on your ability to carry out assigned course work, I would urge that you contact the staff in the Disabled Student Services office (DSS), Room 133 Humanities, 632-6748/TDD. DSS will review your concerns and determine, with you, what accommodations are necessary and appropriate. All information and documentation of disability is confidential.