



Discrete Mathematics II (3 credits)
Fall Semester 2007

Professors:

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Aim and Objectives: A systematic study of the mathematics that forms the basis of theoretical work in computer science. This semester course focuses on graph theory. It is developed beginning with graphs and extending through probability and statistics. Also included are problems in Boolean algebras and applications to logic networks and Karnaugh maps.

Prerequisites: Discrete Mathematics I.

Teaching Methods: 3 hours per week in the form of lectures.

Assessment :

Active participation and Home works, one Midterm Exam and one Final Exam will form the final assessment. The weights are 10%, 45%, 45%, respectively. **Exams are closed books.** Also, you may use your own calculator and nothing else will be allowed. **Mobile phones are strictly not tolerated in the class for any use (including computations).** Active participation is meant as the effort and the interest that a student shows in the class, including homework. **After each session students are expected to study all the relevant material, read all the associated exercises, identify the difficult points and pose their questions in the next session either directly to me or in the class. Cheating and plagiarism in any form will**

result immediately in the grade F. Students who are absent more than 20% of the total hours of the semester (i.e. 9 hours) may be required to withdraw from the course.

Main Textbook: *Discrete mathematics*, Kenneth A. Ross and Charles R. B. Wright, Prentice-Hall International Editions.

Reference Book: *Discrete mathematics for Computer Science*, Haggard G., Schlipf J., Whitesides S., Thompson Brooks/Cole.

Syllabus:

Introduction to graphs and trees.

1. Graphs.
2. Edge traversal problems.
3. Trees.
4. Rooted trees.
5. Vertex traversal problems.
6. Minimum spanning.

Probability.

1. Independence.
2. Random variables.
3. Expectation and standard deviation.
4. Binomial and related distributions.

Boolean Algebra.

1. Boolean algebras.
2. Boolean expressions.
3. Logic networks.
4. Karnaugh maps.

Class Conduct: You are responsible for everything that is announced, presented or discussed in class. The way to avoid any misunderstanding associated with this course is to attend class. You are expected to attend class and I do keep attendance records. Please, be courteous during class; both to me and your colleagues. I find late arrivals distracting, which cause a decline in the quality of my lecture. Importantly, it is also disruptive to your colleagues. Please, refrain from talking during class; it is disruptive to your colleagues and the lecture. I expect the best behavior

from all of you. This is what education is all about. Please, consider that **the language of instruction is English, so all our conversation into the class must be in this language.**

If you feel that you have special learning difficulties, please, make an appointment with Ms. Anxhela Gramo. Ms. Anxhela Gramo is trained to help students with learning difficulties. She has offered to provide this service to our students, just as it is offered in all American universities.

Grading Scale and Quality Points:

<u>Grade</u>	<u>Percentage</u>	<u>Quality points</u>
A	96-100	4.00
A-	90-95	3.67
B+	87-89	3.33
B	83-86	3.00
B-	80-82	2.67
C+	77-79	2.33
C	73-76	2.00
C-	70-72	1.67
D+	67-69	1.33
D	63-66	1.00
D-	60-62	0.67
F	0-59	0.00