Math 112 – Discrete Mathematics
2007–2008 Spring semestr

Textbook:

R.P. Grimaldi, Discrete and Combinatorial Mathematics (Addison -Wesley, fourth edition)

Reference books:

I. Anderson, A First Course in Discrete Mathematics (Springer SUMS, 2001)

K.H. Rosen, Discrete Mathematics and its Applications (McGraw-Hill, fourth edition)

Tentative Course Outline:

1. Counting principles.
   The rules of sum and product. Permutations, Combinations, The Binomial Theorem. Combinations with repetions. (Sec. 1.1-1.4). Discrete Probability. (Sec. 4.4[1])

2. Pigeonhole principle. (Sec. 5.5)

3. The principle of Inclusion and Exclusion
   The Principle of Inclusion and Exclusion. Generalization of the Principle. Derangements. (Sec. 8.1-8.3)

4. Recurrence relation.
   The First and Second Order Linear Recurrence Relation. The Nonhomogeneous Recurrence Relation. (Sec. 10.1-10.3)

5. Introduction to Graph Theory.
   Definitions. Subgraphs, Complements, Graph Isomorphism. Euler Trials and Circuits. Planar Graphs. Hamiltonian Paths and Cycles, (Sec.11.1-11.5)

6. Trees.
   Definitions, Properties. Rooted Trees. (Sec.12.1-12.2)

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[1]K.H. Rosen book

Grading:

Dates of Exams:
Midterm 1 : 30%
Midterm 2 : 30%
Final : 40%

Dates of Exams:
Midterm 1 : March 28
Midterm 2 : May 2
Final : To be announced later by the registar.

Instructors:
Section 1: ZHELTUKHIN KOSTYANTYN
Section 2: FINASHIN SERGEY
Section 3: ÖNAL SÜLEYMAN

Schedule:
Section 1: Monday 10:40 11:30 (M103), Wednesday 08:40 10:30 (M103).
Section 2: Monday 10:40 11:30 (M104), Wednesday 08:40 10:30 (M104).
Section 3: Tuesday 08:40 10:30 (M102), Thursday 10:40 11:30 (M102).