26/2/13

Basic Combinatorics - Spring '13

Instructor: Dr. Asaf Shapira

Course number: 0366-3036

Homepage: www.math.tau.ac.il/~asafico/comb-12/comb.html

Email: asafico@tau.ac.il

Time: Tuesday, 15:00-18:00

Prerequisites: Discrete Mathematics (0368.1118) or Introduction to Combinatorics and Graph Theory (0366.1123) or consent of instructor.

Course Overview: The course is intended for second and third year undergraduate students in Mathematics or Computer Science. We will cover more advanced topics compared to the course Introduction to Combinatorics and Graph Theory (0366.1123). The level of difficulty will be comparable to that of Introduction to Graph Theory (0366.3267).

We will cover and touch upon a variety of topics in Combinatorics, like Ramsey Theory, Extremal Graph Theory, Extremal Set Theory, the Partition Function and Enumerative Problems. We will also encounter a variety of tools and techniques, like Generating Functions, the Probabilistic Method and tools from Linear Algebra.

You can check the course's website for more information at www.math.tau.ac.il/~asafico/comb-12/comb.html

Suggested Reading:

- *Combinatorics: Topics, Techniques, Algorithms*, by P. Cameron, 1994.

- *Invitation to Discrete Mathematics*, by J. Matoušek and J. Nešetřil (Second Edition), 2008.

- *A Course in Combinatorics*, by J.H. van Lint and R.M. Wilson (2nd edition), 2001.