BMS Basic Course Combinatorics Summer Semester 2010

February 8, 2010

- Lecturer: Tibor Szabo, FU, http://page.mi.fu-berlin.de/szabo/
- lecture times:
  - TUE 8-10, Arnimallee 6, room: SR 032
  - TUE 12-14, Arnimallee 6, room: SR 032
  - exercises:WED 8-10, Arnimallee 6, room: SR 007/008
- Short Abstract:
  Combinatorics is the study of discrete sets (in our course this mostly means "finite"), endowed with various structures. Typical questions are: Does a set with certain properties exist? If yes, how many are there? How do I find them? Combinatorics abounds with beautiful problems that are easy to understand, but very often a real challenge to solve. After reviewing basic enumeration techniques, we will concentrate on the following topics: extremal and structural graph theory, extremal set theory, Ramsey-theory. Combinatorics is also known for the use of various simple tools from other mathematical disciplines. In the second half of the course we sample applications of Linear Algebra, Probability, and Topology.