

Preliminary plan, January 16

Examiner: Jeffrey Steif, room 2324 (in Math. Center), phone : 3513, steif@math.chalmers.se

Course book: N. Biggs: *Discrete Mathematics, Oxford University Press*.
(The books might come to the bookstore Cremona a little late; hopefully during the second week).

This course is about enumerative combinatorics, graph theory, elementary number theory with applications to RSA encryption, and error correcting codes. Although, sometimes, the boundaries between the different areas might be a little unclear. Some of the relevant parts of the course book are *approximately* the following.

Combinatorics: 3.1–3.6, 4.1–4.4, 5.1–5.3.

Graph theory: 8.1–8.7, 11.3–11.4,

Elementary number theory: (1.1–1.8), 6.1–6.3, 6.5

Error correction codes: 17.1–17.6

Other material we will cover, time permitting, are recurrence relations, generating functions, and applications of algebra to combinatorics.

The material within parentheses covers material that you should have already seen in earlier math courses and therefore we will be doing much faster, if at all.

Some material covered in the lectures will not be in the book (e.g. RSA encryption). In addition, the exercise sessions will also sometimes be used for presenting some background material.

Each week, except the first, you will hand in homework exercises. For these, you may (and are encouraged to) work in cooperation with others. However, everyone *must* formulate and write up their own solutions. The solutions should be well formulated and (of course) legible.

At the end, there will be a final exam; either written or oral. Your grade will be based on the homework and the final exam, weighting about equally.

An email list will be created for this course. Every participant is responsible for making sure he/she is on it, and it will be assumed that you read my messages sent to this list.

All the material for this course can be found on the following homepage.

<http://www.math.chalmers.se/Math/Grundutb/CTH/tma965/0203>