Please refer to last year's Kurs-PM for further information.

Course literature

(Optional) Norman L. Biggs, Discrete Mathematics, Oxford Science Publications.

OBS! There are several editions of this book. In the most recent edition, seven chapters of background material have been added at the beginning of the book. However, the rest of the book is exactly the same as previous editions, so I would recommend that you try to get your hands on an earlier edition as it's probably considerably cheaper.

(Recommended) Handwritten lecture notes from last year's course are available for 30 SEK in DC.

OBS! I recommend you buy these as the content of the course will not differ substantially from last year. If and when I do something not covered last year, I will write up supplementary lecture notes on the home page.

Course content

The term 'Discrete Mathematics' covers a broad spectrum of mathematics. In this course I will give an introduction to several topics which I hope represent a good cross-section of this spectrum. Topics to be covered include :

1. Counting techniques (enumerative combinatorics) - chapters 10,11,19,25 in Biggs.
2. Graph theory - chapters 15,16,17,18.
3. Relations, modular arithmetic, RSA encryption - mostly not covered in Biggs.
4. Error correcting codes - chapter 24.

Note that the chapter numbers refer to the latest edition of the book. To convert to the previous edition subtract 7 from each chapter number.

Examination

The examination will consist of a number of homework exercises, handed out at regular intervals during the course, and a final written exam. Approximately 50 percent of the course grade will be given for the homework,

however IN ORDER TO PASS THE COURSE, YOU MUST PASS THE FINAL EXAM !!

The exam will consist of a number of problems to solve - you will not be asked to recite proofs of theorems in the lecture notes or the text book. These problems will be of a similar nature to 'practice problems' which will be handed out together with the homework exercises, and some of these will be solved by the övningsledarna in class. Some of the homework exercises will be somewhat more challenging.

The main advantage of buying the text book, if you choose to do so, would be to use it as a source of extra problems. However, several of the problems I hand out will be taken from the book anyway. Note that at the end of each chapter there is a collection of 'Miscellaneous Exercises'. These are generally more difficult than the problems following each section, and correspond to the kind of standard you can expect on the homework, whereas the problems in each section correspond more closely to the level you can expect on the final exam.