UPPSALA UNIVERSITY
DEPARTMENT OF MATHEMATICS
Jörgen Östensson

Applied Mathematics, 10 credits
Fall 2012

Applied Mathematics

Course literature

J. David Logan, *Applied Mathematics*, Third Edition, Wiley.

Course web page: http://www2.math.uu.se/∼ostensson/

Here you can find information about the course, e.g. materials handed out in class.

Teaching

The course Applied Mathematics, 1MA060, consists of 20 lectures. Although much of the lecture time will be devoted to concrete problem solving, you are strongly advised to solve additional problems on your own.

A preliminary lecture plan, which can also seen as an outline of the course itself, can be found below. I will certainly not have time to cover everything in class, during which I can only hope to explain the basic ideas. You are expected to study the rest on your own.

Preliminary lecture plan

Lecture	Contents	Sections in book
1–2	Introduction. Dimensional analysis and scaling.	1.1–1.2
3–5	Perturbation methods.	2.1–2.6
6–8	Calculus of variations.	3.1–3.6
9–11	Dynamical systems.	1.3–1.4, 5.1–5.2
12–14	Introduction to partial differential equations.	6.1–6.3, 7.1–7.4
15	Sturm-Liouville problems and eigenfunction expansions.	4.1–4.2, 6.4
16–17	Theory of transforms.	6.5
18-19	Integral equations, Green's functions and distributions.	4.3–4.5
20	Reserve.	

Examination

The course finishes on the 26th of October with a written exam. Maximum score: 40 points. A total score of 18 is needed for the grade 3, 25 for the grade 4, and 32 for the grade 5.

Uppsala, 28th of August 2012.

Jörgen Östensson