

Applied Mathematics

Course literature

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

Course web page: <http://www2.math.uu.se/staff/pages/?uname=ostensson>

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

Teaching

The two courses Applied Mathematics 1MA148 and 1MA060 consist of 15 resp. 20 lectures. The first 15 lectures will be common to both courses, after which the smaller course ends.

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 be 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	Reserve.	
16	Sturm-Liouville problems and eigenfunction expansions.	4.1–4.2, 6.4
17–18	Theory of transforms.	6.5
19–20	Integral equations, Green's functions and distributions.	4.3–4.5

Examination

Both courses finish on the 24th 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, 29th of August 2011.

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