

Who am I: **Robert von Fáy-Siebenbürgen**

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SYLLABUS (MAS315)

- **Waves on strings. D'Alembert solution. Standing and propagating waves. Normal modes**
- **Use of Fourier series for solving one-dimensional wave problems.**
- **Sound waves. Plane, cylindrical and spherical sound waves.**
- **Water waves. Wave dispersion. Group velocity.**
- **Traffic waves.**
- **2-hour exam in January**

Reference Literature

R. Knobel: An Introduction to the Mathematical Theory of Waves

American Mathematical Society, 2000

ISBN: 0-8218-2039-7 pbk

Covers almost all course material. Excellent book.

J. Billingham & A.C. King: Wave Motion

Cambridge Texts in Applied Mathematics, CUP, 2001

ISBN: 0-521-634504 pbk

Covers all the course. Many parts of the book may be hard for UK maths UGs.

G.B. Whitham: Linear and Nonlinear Waves

Pure and Applied Mathematics, Wiley, 1999

ISBN: 0-471-35942 pbk

Covers all the course. Really a text for graduate and research students. Authoritative reference.

Sir J. Lighthill: Waves in Fluids

Cambridge Mathematical Library, CUP, 2003

ISBN: 0-521-01045

Covers part of the course on fluid waves. Excellent insight.

+ HELP each other!

Comments

Skills from 1st year (or elsewhere): **MAS122**

- Differentiation & integration (i.e., calculus)

Lecturing style

- **No handouts!** You must take notes + o/hs

Course and HW Plan MAS315 (AY 2016-17)

Week	Lectures	HW	Other Qs that can be tackled
W02 L01 W02 L02	14:00 03/10/16 (F20) 17:00 03/10/16 (F41)		
W03 L03 W03 L04	14:00 10/10/16 (F20) 17:00 10/10/16 (F41)	HW1 S1: Q2, 4	S1: Q1, 3
W04 L05 W04 L06	14:00 17/10/16 (F20) 17:00 17/10/16 (F41)	Hand in HW1 by 18:00 on 17/10/16	Rest of S1
W05 L07 W05 L08	14:00 24/10/16 (F20) 17:00 24/10/16 (F41)	HW2 S2: Q2, 4, 5	S2: Q3, 6
W06 L09 W06 L10	14:00 31/10/16 (F20) 17:00 31/10/16 (F41)	Hand in HW2 by 18:00 on 31/10/16	S3: Q1-3
W07 L11 W07 L12	14:00 07/11/16 (F20) 17:00 07/11/16 (F41)	HW3 S3: Q4, 5	S4: Q2, 3
W08 L13 W08 L14	14:00 14/11/16 (F20) 17:00 14/11/16 (F41)	Hand in HW3 by 18:00 on 14/11/16	Rest of S4
W09 L15 W09 L16	14:00 21/11/16 (F20) 17:00 21/11/16 (F41)	HW4 S4: Q1, 4	S5: Q1, 2
W10 L17 W10 L18	14:00 28/11/16 (F20) 17:00 28/11/16 (F41)	Hand in HW4 by 18:00 on 28/11/16	S5: Q3, 4
W11 L19 W11 L20	14:00 05/12/16 (F20) 17:00 05/12/16 (F41)		Rest of S5

I hope, I'll be able to stick to this plan, but if there are any snags I will advise you as soon as possible