

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

Contact me: • personally
• email: **Robertus@sheffield.ac.uk**
• tel.: 2223832

Office: **H16, Hicks Building**

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 2017-18)

Week	Lectures	HW	Other Qs that can be tackled
W02 L01	14:00 02/10/16 (F20)		
W02 L02	17:00 02/10/16 (F20)		
W03 L03	14:00 09/10/16 (F20)	HW1	S1: Q1, 3
W03 L04	17:00 09/10/16 (F20)	S1: Q2, 4	
W04 L05	14:00 16/10/16 (F20)	Hand in HW1 by	Rest of S1
W04 L06	17:00 16/10/16 (F20)	18:00 on 16/10/17	
W05 L07	14:00 23/10/16 (F20)	HW2	S2: Q3, 6
W05 L08	17:00 23/10/16 (F20)	S2: Q2, 4, 5	
W06 L09	14:00 30/10/16 (F20)	Hand in HW2 by	S3: Q1-3
W06 L10	17:00 30/10/16 (F20)	18:00 on 30/10/17	
W07 L11	14:00 06/11/16 (F20)	HW3	S4: Q2, 3
W07 L12	17:00 06/11/16 (F28)	S3: Q4, 5	
W08 L13	14:00 13/11/16 (F20)	Hand in HW3 by	Rest of S4
W08 L14	17:00 13/11/16 (F20)	18:00 on 13/11/17	
W09 L15	14:00 20/11/16 (F20)	HW4	S5: Q1, 2
W09 L16	17:00 20/11/16 (F20)	S4: Q1, 4	
W10 L17	14:00 27/11/16 (F20)	Hand in HW4 by	S5: Q3, 4
W10 L18	17:00 27/11/16 (F20)	18:00 on 27/11/17	
W11 L19	14:00 04/12/16 (F20)		Rest of S5
W11 L20	17:00 04/12/16 (F20)		

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