

Plan for GEO 4630 – Autumn 2009

If nothing else is stated, the sections refer to chapters in the book “Geodynamics” by Turcotte and Schubert, ed. 2002.

Plate tectonics

- 1** – Sec. 1-1 to 1-7 + spherical trigonometry
- 2** – Sec. 1-8, problems 1-1 to 1-3
- 3** – Problems 1-4 to 1-8
- 4** – Pbs 1-9 to 1-14
- 5** – Pbs 1-15 to 1-19 (try 1-15 and 1-16 with Matlab), Sec. 1-9
- 6** – Problems of section 1-9, Sec. 1-10 to 1-14

Stress and Strain in solids – Elasticity and Flexure

- 7** – Sec. 2-1 to 2-6
- 8** – Pbs. 2-1 to 2-7, 2-11, 2-12.
- 9** – Sec. 2-7 to 2-8 (not from “We first...” page 91 to eq. 2-127 on page 93), problems 2-21, 2-22.
- 10** – Problems 2-24, 2-25, 2-29, Sec. 3-1 to 3-4.
- 11** – Problems 3-1, 3-2 and 3-4, Sec. 3-5 to 3-8.
- 12** – Sec. 3-9 to 3-10, no problem.
- 13** – Sec. 3-13, 3-14
- 14** – Sec. 3-16 and 3-18, no problem.
and **Deformation of plates:** Document on rheology from Univ. Leeds and, in “*Geodynamics*”, by Jolivet and Nataf, pages 83-94 + 106-113

Heat transfer

- 15** – Sec. 4-1 to 4-8, problems 4-1 to 4-5 and 4-8 to 4-9. Give out compulsory exercise.
- 16** - Sec. 4-11, 4-13, 4-14,
- 17** - Problems 4-26 to 4-30, take 4-30 before 4-29.
- 18** – Sec. 4-15 to 4-17, not the problems
- 19** – Sec. 4-22 to 4-23, not the problems.
- 20** - Pbs 4-52 and 4-53 (with no basal heat), sec. 4-24, 4-25.
- 21** - Problems 4-56 and 4-57.

- 22** – Summary and questions on sections up to now. Solution to compulsory exercise with Matlab.

Gravity

- 23** - Sec. 5-1 to 5-4, (not from eq 5-26 to eq. 5-41), not pb. 5-5 and 5-6
- 24** - Sec. 5-6 to 5-7, not the problems
- 25** - pb. 5-12, -16, -19, Sec. 5-8, 5-9.
- 26** – some more time for gravity questions

Fluid mechanics

27 - Sec. 6-1 to 6-4

28 – Sec. 6-6, pb. 6-1 to 6-6

29 - Sec 6-7 to 6-9, no problem.

30 - Sec 6-10 and pb. 6-12; Sec 6-18.

31 – in “*Geodynamics*”, by Jolivet and Nataf, pages 166-181 and “*Dynamic Earth*”, by Davies, sec. 8.5 + 8.6.

32, 33 - Presentation of articles. **Compulsory.**

Week	Monday	Tuesday	Wednesday	Thursday	Friday
35 (24 -28/08)	Lecture 1	2		3	
36 (31/08 -4/09)	4	5		6	
37 (07 -11/09)	7	8		9	
38 (14 - 18/09)	10	11		12	
39 (21 -25/09)	13	14		15	
40 (28/09 – 2/10)	16	17		18	
41 (05 – 09/10)	19	20		21	
42 +43 (12 – 23/10)					
44(26 – 30/10)	22	23		24	
45 (02 - 06/11)	25	26		27	
46 (09 – 13/11)	28	29		30	
47 (16 – 20/11)	31				
48 (23 – 27/11)	32	33		Questions	
49 (30 - 05/12)					
50 (07 - 11/12)				Exam	