LECTURE PLAN FOR FYS 3610
AUTUMN 2005

- 4 hours of lecture + 2 hours of seminar per week
- 2 hours mid-term examination (counts 20%)
- Project work (counts 20%)
- Oral examination (counts 60%)

Week	Topic	Curriculum	Lecturer
34	Introduction Earth's atmosphere	 Compendium Ch 3 - pdf	JM
35	Ionosphere	Compendium Ch 4 - pdf	JM
36	The Earth's magnetic field	Compendium Ch 2 - pdf	AE
37	The Lorentz Force and single particle motion: -Gyromotion - Zeroth order drifts (ExB, Grad B, Curvature) - Magnetic momentum, pitch angle and loss cone Maxwellian distribution and plasma temperature MHD description	 Ch 2.1-2.5 K&R	JM JM
38	Plasma frequency, Alfvén waves	Ch 11.1-11.6	JM
39	The Sun and Solar Activity, Frozen-in, Reynolds number	Ch 3.1-3.3, 3.5-3.6, 3.8-3.9 K&R	JM JM
40	The Solar wind (Formation, Naval's Nozzle, IMF, Parker spiral) Ionospheric currents 2t	Ch 4.1-4.3, 4.4-4.5 (descriptive) K&R Compendium Ch5 - pdf	JM
41	Midterm examination		
42	Ionospheric currents cont. 2t Aurora 2t	Compendium Ch5 - pdf Ch 14 K&R	JM
43	Aurora 2t Currents systems and magnetic	Ch 14 K&R A.B. (cross section) Compendium Ch6 - pdf	JM

	deflections 2t		
44	Magnetic reconnection, reconnection rate = time rate of change of magnetic flux, jxB force and reconnection signatures, Svalgard-Mansurov effect	Ch 9 K&R	JM
44	**Field trip to Andøya Rocket Range (Thursday – Sunday)** Experimental Techniques **(4 h)** Space Weather impacts on satellite systems **(2h)** **+ Field observations**	Powerpoint-pdf's Infrastructure.pdf, Optics.pdf, Radars.pdf, ICI.pdf Space Weather.pdf	JM JM JM
45	Solar wind driven ionospheric convection **(2h)**	Cowley&Lockwood,1992	JM
46	**Intensify your project work!!**		
47	Ozone and UV radiation (2 hours) **Project work**	Ch 7–Moan7.pdf	JohanM
48	Repetition		JM
	EXAMINATION		

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