

EART 111
Mathematics in the Earth Sciences
Fall 2009 Syllabus

Tue,Thu 12:00-1:45 E&MS D250
 Prof. F. Nimmo (fnimmo@es.ucsc.edu)

Sep 24	1. Introduction and Review	-
29	2. Series expansions	S11.10
Oct 1	3. Vectors and 3D analytic geometry	K8.1-8.3, S12.1-12.2
	PS#1 due	
6	4. Dot products and cross products	S12.3-12.4
8	5. Lines and planes	S12.5
	PS#2 due	
13	6. Partial derivatives	S14.3
15	7. Directional derivatives	S14.4-14.6
	PS#3 due	
20	8. Maximization in several dimensions	S14.7
22	9. More vector calculus	S16.1, 16.5
	PS#4 due	
27	10. Introduction to matrices	K6.1-6.3
29	11. Midterm	-
Nov 3	12. Inverses and Determinants	K6.6-6.7
5	13. Eigenvalues and eigenvectors	K7.1-7.2
	PS#5 due	
10	14. Differential equations	K1.1-1.3
12	15. First-order DE's	K1.6
	PS#6 due	
17	16. HLDE's	K2.1
19	17. HLDE's (cont'd)	K2.2-2.3
	PS#7 due	
24	18. Partial LDE's	K11.1-11.3
Dec 1	19. Numerical methods	-
	PS#8 due	
3	20. Summary and Revision	-

Final Exam: Weds 9th Dec noon-3 p.m.

Final column refers to sections in Kreyszig (8th ed.) and Stewart (5th ed.). "PS" is Problem Set.