

120A Differential Geometry

Instructor: Peter Petersen, MS 6126.

Office Hrs: Th 1pm-2:30pm, F 11:30am-1pm.

Time: MWF 1-1:50pm, TA section Tu 1-1:50pm.

Place: MS 5127

Texts: Millman & Parker: Elements of Differential Geometry

Prerequisites: You must know the material from the entire calculus sequence 31A-33B. We shall use all of the material without reviewing it. In addition I assume that you have taken 115A and 131A. Some, but far from all, aspects of what you are assumed to know are assembled in chapter 1 of the text. Several important items you should know are: Change of variables for functions of several variables, change of variables for multiple integrals, diagonalizing symmetric matrices (spectral theorem), the implicit function theorem, the inverse function theorem, Lagrange multipliers.

Contents: Chapters 2-5. You might also consult the Schaum's Outline text by Lipschutz on Differential Geometry as it contains a large number of worked problems.

Homework: There will be 8 homeworks to be graded by the TA. The syllabus below lists all of the homework problems you have to do. Homework is due every Friday, except on the day of the midterm, and should be handed in to me in class. The two lowest homework scores will be dropped.

Exams: There is going to be a one hour midterm (on F October 30) and a three hour final (on Friday, Dec 11, 8am-11am). There will be no make-up exams unless you have an excuse that is officially sanctioned by UCLA.

Exam Rules: You are not allowed to use any electronic devices during the midterm or final, nor will these exams be open book. You are however allowed to bring a regular piece of paper with whatever information on it that you feel could be helpful.

Grading: Your grade will be weighted as follows: 40% homework, 20% midterm, and 40% final.

Syllabus: Below you'll find the lecture by lecture syllabus. I cannot guarantee that it will be accurate, but there should be enough slack that we can cover the indicated sections from 2, 3, and 5 before the midterm.

Date	chapter-section	Homework problems	
F 9-25	2-1	2,3,7	Hwk 1
M 9-28	2-2	1,3,8	Hwk 1
W 9-30	2-3	1,6,7	Hwk 1
F 10-2	2-4	1,2,3,4	Hwk 2
M 10-5	2-4	12,16,29	Hwk 2
W 10-7	2-6	7,8,11	Hwk 2
F 10-9	3-1	2,3	Hwk 3
M 10-12	3-2	3	Hwk 3
W 10-14	3-3	1	Hwk 3
F 10-16	3-4	1,2	Hwk 4
M 10-19	3-5	1,2,9	Hwk 4
W 10-21	5-1	2,3	Hwk 4
F 10-23	5-1,2		
M 10-26	5.2	1,2	
W 10-28	Leeway		
F 10-30	Midterm		
M 11-2	4-1	1,2	Hwk 5
W 11-4	4-1	9,10,12,13	Hwk 5
F 11-6	4-2	1,2,3	Hwk 6
M 11-9	4-3	1,4,6	Hwk 6
W 11-11	V-Day		
F 11-13	4-4	1,2	Hwk 7
M 11-16	4-4	5,9,12	Hwk 7
W 11-18	4-5	1,2	Hwk 7
F 11-20	4-5	4,5,11	Hwk 8
M 11-23	4-7	1,5,7	Hwk 8
W 11-25	4-8	1,2,5,7,14	Hwk 8
M 11-30	4-9	1,3,4	Hwk 8
W 12-2	4-11	1,5,8	Hwk 8
F 12-4	Leeway		
	Final		