

General Information for Math 18(1) Several Variable Calculus Section 1

Spring 1998

Important note: This course is one of two sections of math 18. The sections are *not* identical. This section is for students who have not yet taken a linear algebra course.

Instructor: My name is Thomas Hunter. My office in the mathematics department is in Dupont 185. You can reach me by phone at 328-8244 or by email at thunter1@swarthmore.edu.

Office Hours: Monday and Wednesday from 2:00pm to 3:00pm, Friday from 9:00am to 10:00am and by generous appointment. The stated slots are times you can be sure to find me in my office and willing to talk. Other times are fine, but to be sure that I am available, you should make an appointment with me. Of course you should feel free to stop by anytime and see whether I am available.

Text: We will use the text *Vector Calculus* (fourth edition) by Marsden & Tromba. It is available at the bookstore.

General Game Plan: We will cover the entire text—if possible—with the following two categorical omissions: We will skip the most theoretical sections. We will limit our discussion—most of the time—to two and three dimensions. A more detailed plan but quite tentative is included with this document and should be updated periodically.

Meetings: Regular lectures will be 11:30am-12:20am Monday, Wednesday, and Friday in Dupont 133.

Homework: I will assign homework in lecture and each week's worth of homework will be due in class the following Friday. (Wednesday if there is an exam.) I expect to have a grader for the course, but I will try to keep close track of how the grading is going.

Exams: There will be two mid-terms and a final exam. The midterms will be in class on Friday, February 20 and on Friday, April 3. The final will be scheduled by the registrar.

Grades: The mid-terms will be worth 100 points. The final will be worth 200 points. Your grade will be based on these scores. I will drop the lowest midterm or half of the final—whichever benefits your score the most.

Computer and Electronic resources: There is a web page associated to this course. You may find it via my home page at <http://www.swarthmore.edu/NatSci/thunter1/>. Other resources you may find useful are the Macintosh graphing calculator, Mathematica, and Maple. Use of these or any other computational tool will not be a required part of the course. (In fact I will ban calculators on most tests.) However, in class demonstrations will all use one or another of these tools and you may find them very useful for learning the concepts. Copies of all programs for all classroom demos will be stored in our class folder on the Classes server.

Clinic: Math Clinic will be run every evening which precedes a weekday, starting sometime in the first or second week of the semester. The Clinic is a great resource for all students—not just for those with difficulties. It is a place where you can work together with other students and know that help and encouragement are available whenever you need it.

Late work: Generally speaking late work will never be accepted and exams may never be taken late. In the case of irreconcilable conflicts you may schedule an exam earlier than the official time, but make up exams will not be given after the regularly scheduled exam except for the most extraordinary circumstances. (For example, global invasion by extraterrestrials.)

Tentative Schedule:

Date	Topic	Problems
Mon. Jan. 19	1.1 & 1.2	1.1: 1–9, 1.2:1–11.
Wed. Jan. 21	1.3	1.3: 1–8,10,11,13,14.
Fri. Jan. 23	1.4	1.4: 1,2,3,8,12,15.
Mon. Jan. 26	1.5	1.5: 1,3–6, 7,8,17,18.
Wed. Jan. 28	2.1 & 2.2	2.1: 1–6, 11–13, 21–23.
Fri. Jan. 30	2.3	2.3: 1, 2, 3, 5, 6, 7, 13.
Mon. Feb. 2	2.4	2.4: 1–14.
Wed. Feb. 4	2.5	2.5: 1,2,4–9.
Fri. Feb. 6	2.6	2.6: 1–10,13,16.
Mon. Feb. 9	3.1	3.1: 1–6.
Wed. Feb. 11	3.2	3.2: 1–6.
Fri. Feb. 13	3.3	3.3: 1–10, 17.
Mon. Feb. 16	3.4	3.4: 1, 4, 7, 10, 13, 15, 21.
Wed. Feb. 18	Catch-up	
Fri. Feb. 20	Midterm	
Mon. Feb. 23	Catch-up	
Wed. Feb. 25	Catch-up	
Fri. Feb. 27	4.1 & 4.2	4.1: 1–4, 19. 4.2 1–6
Mon. Mar. 2	4.3	4.3: 3, 4, 7, 8, 10, 11, 13–16
Wed. Mar. 4	4.4	4.4: 1–5, 9–20
Fri. Mar. 6	5.1	5.1: 1, 2. 5.3: 1, 2.
Mon. Mar. 9	Break	
Wed. Mar. 11		
Fri. Mar. 13		
Mon. Mar. 16	5.3	5.3: 6–9, 11.
Wed. Mar. 18	5.4	5.4: 1, 2, 5, 8, 11.
Fri. Mar. 20	5.6	5.6: 1–4, 6, 7.
Mon. Mar. 23	6.1	6.1: 1–4, 7.
Wed. Mar. 25	6.2	6.2: 1–4, 15, 16.
Fri. Mar. 27	6.3	6.3: 1, 2, 9, 10, 12.
Mon. Mar. 30	7.1	7.1: 1–3, 7.
Wed. Apr. 1	7.2	7.2: 1–3, 6, 9, 16.
Fri. Apr. 3	Midterm	

Date	Topic	Problems
Mon. Apr. 6	7.3	7.3: 1–7.
Wed. Apr. 8	7.4	7.4: 1–8.
Fri. Apr. 10	7.5	7.5: 1–5, 7, 9.
Mon. Apr. 13	7.6	7.6: 1–7, 9, 10.
Wed. Apr. 15	7.6	7.6: 8, 15, 16.
Fri. Apr. 17	Meditation on the fundamental theorem of Calculus	7 REVIEW: 1,2,3, 17,18.
Mon. Apr. 20	8.1	8.1: 1, 2, 3, 5, 7.
Wed. Apr. 22	8.2	8.2: 1–5.
Fri. Apr. 24	8.2	8.2: 7–9.
Mon. Apr. 27	8.3	8.3: 2–7, 10.
Wed. Apr. 29	8.4	8.4: 2–4, 9, 10.
Fri. May 1	8.5	