Math 208 **Syllabus** **Fall Semester 2009**

Text: ***University Calculus***, Hass, Weir and Thomas, Pearson (Addison Wesley).

ACE Outcome 3: This course satisfies ACE Outcome 3. You will apply mathematical reasoning and computations to draw conclusions, solve problems, and learn to check to see if your answer is reasonable. Your instructor will provide examples, you will discuss them in class, and you will practice with numerous homework problems. The exams will test how well you've mastered the material.

Schedule: The daily schedule and number/dates of tests in your section could be different from that listed below. But all problems listed here from Chapters 10 – 14 (including those on the listed handouts) are eligible as final exam topics, as is any material (such as parameterizations) from earlier chapters intrinsic to doing these problems.

Daily Work: Do an initial reading of the sections expected to be covered before coming to class each day - even if you don't understand the details, that reading will help you better understand the lecture. (Rereading more carefully after the class can also be helpful.) The exercises listed below represent a minimal assignment and should also be done as the material is covered. In some cases doing additional exercises not listed here can help you to attain sufficient mastery of the material.

Other Assignments: Almost all instructors use items not listed on this syllabus, sometimes as part of their grade scheme, in other cases just to facilitate learning. Your instructor may assign a project or projects, require you to take computer exams, collect homework problems, give quizzes, distribute handouts with supplementary assignments, etc. Again, even if your instructor gives 4 hour exams as listed below, the exams may be on different dates than are listed here.

Calculators: You will be permitted to use any standard calculator not possessing communications capability (note you cannot use something like a calculator built into a cell phone) on the final exam. You will not be allowed to use something like a tablet or notebook computer or equivalent. Your instructor will decide to what extent calculators are allowed on your hour exams and quizzes.

Final Exam: The time for the final exam is 6:00-8:00 pm, Wednesday, December 16, Room TBA. You are expected to arrange your personal and work schedule to allow you to take the exam at that time. Students with conflicting exam schedules may be allowed to take an alternate final, which is always given after the regularly scheduled final. No student will be allowed to take the final exam early. A picture ID (driver's license or student ID) may be required to take the final exam.

Advanced Placement: If this is the first college mathematics course that you have attempted, then you may be eligible for 10 hours of free credit for Math 106 and Math 107, provided you earn a grade of P, C or better in Math 208 this semester. To be considered for this credit, you should register with the Department of Mathematics, 203 Avery Hall, by Friday, September 18, 2009.

Week	Dates	Sections/Topic	Exercises
1	Aug. 24–28	Introduction to Math 208	
		10.1–3 Recap	10.1 # 6, 11, 15, 16, 27, 37, 45, 49; 10.2 # 43; 10.3 # 5, 13, 29, 30, 33, 35, 43
		10.4 Cross product	1,3,7, 11, 15, 18, 20, 21, 27, 30, 31, 33, 37
		10.5 Lines and planes	3, 6, 9, 18, 19, 21–23, 25, 36, 39, 47, 59, 61
2	Aug. 31–Sep. 4	10.6 Cylinders & quadric surfaces	1–12,15,19,21,23,25,27,29,31, classify (don't sketch) 33–44
		12.1 Multivariable functions	6–9, 11, 13–18, 22, 25, 29, 41, 42
		12.2 Limits and continuity	2, 3, 14, 15, 18, 22, 25, 29, 33, 37, 41, 45, 51, 56
		12.3 Partial derivatives	2, 3, 5, 7, 11, 12, 16, 17, 25, 27, 32, 34, 40
Friday, September 4 is the last day to withdraw from the course and not have it appear on your transcript.			
3	Sep. 7–11	Labor Day – no class	
		12.3 2nd derivatives & differentiability	43, 46, 55, 57, 67, 68, 73, 74
		12.4 The Chain Rule	3, 7, 10, 11, 13, 15, 25, 29, 36; Handout problems
		12.5 Gradient & directional derivative	4, 6, 7, 10, 13, 16, 17, 19, 22, 31, 32
4	Sep. 14–18	12.5–6 Gradients, tangents & normals	12.5 # 23, 24; 12.6 # 1, 4, 11, 16, 17; Handout problems
		3.10 Differentials & linearization	3, 6, 11, 21, 25–35 odd, 43–51 odd, 55
		12.6 Linearizations & differentials	26, 29, 39, 47, 48, 49, 52, 53; Handout problems
		Test Review	

Week	Dates	Sections/Topic	Exercises
5	Sep. 21-25	Exam 1	
		4.4 Extrema & the 2nd derivative test	1–33 odd, skip graphing, find extrema, inflection points
		12.7 Extrema & 2nd derivative test	9, 17–19, 23, 26, 28; Handout problems
		12.7 Absolute extrema	31, 34, 36, 39, 47, 51
6	Sep. 28–Oct. 2	12.8 Lagrange Multipliers – 2 variables	1, 3–5, 8–11, 13, 16
		12.8 Lagrange Multipliers – 3 variables	17–19, 23, 26–28, 37
		5.1, 5.6 Definite integrals and area	5.1 # 1, 5, 11, 15; 5.6 # 47–67 odd, 73, 81,83
		13.1 Double integrals over rectangles	1, 7, 9, 10, 14, 15, 18, 23, 25, 28
7	Oct. 5–9	13.2 Integrals over other 2D regions	1, 5, 8, 13, 15, 17, 19, 25–27, 30, 35, 36, 39, 40, 45, 55
		13.3 Area and average value	1, 3, 6, 7, 9–11, 13, 15, 17, 18, 20
		13.4 Polar double integrals	3, 9, 11, 14, 16, 18, 19, 24, 28, 29; Handout problems
		Review /catch up on double integrals	
8	Oct. 12–16	Test Review	
		Exam 2	
		6.1–2 Finding volumes using integrals	6.1 # 1–21 odd; 6.2 # 1–17 odd
		13.5 Triple integrals	3, 6, 9, 10, 14, 22, 27, 29, 33, 34, 36, 37, 41, 43, 44, 47
Friday, October 16 is the last day to change your grade option to or from Pass/No Pass.			
9	Oct. 19–20	Fall Break	
	Oct. 21–23	6.7 Moments and center of mass	1, 3, 5, 7, 13, 15, 17, 19, 27, 29
		13.6 Moments and center of mass	1, 3, 4, 11, 19, 23, 30, 31, 33
		13.7 Cylindrical coordinates	4, 10–15, 18, 46, 47
10	Oct. 26–30	13.7 Spherical coordinates	29, 32, 34–38, 40
		13.7 Conversion from rectangular	49, 52, 59, 74, 77; Handout problems
		Review /catch-up on triple integrals	
		3.5, 9.6 Parametric equations	3.5 # 81–99 odd; 9.6 # 1–11 odd; Handout problems
11	Nov. 2–6	14.1 Line integrals over *ds*	1–8, 11–15, 19–21, 27, 30
		14.2 Vector fields and work integrals	3, 7, 10, 13, 14, 17, 18, 21, 22
		14.2 Flow, circulation and flux	23, 27–29, 35, 38, 41, 43
		Test Review	
12	Nov. 9–13	Exam 3	
		14.3 Testing for & finding potentials	1–6, 8, 9, 11; Handout problems 1–6
		14.3 Potentials & path independence	14, 15, 18, 25, 31, 33, 36, 37; Handout problems 7–9
		14.4 Green's Theorem	1, 4, 6, 7, 9, 11, 17–19, 22, 24, 26, 29, 31, 34
Friday, November 13 is the last day to withdraw from a course and receive a grade of W.			
13	Nov. 16–20	14.5 Parameterized surfaces & area	2, 3, 5–9, 12, 13, 15, 17, 20, 22, 23, 34
		14.5–6 Surface area/surface integrals	14.5 # 27, 30, 38, 41, 47–49, 52; 14.6 # 1, 3, 6, 7, 13, 39
		14.6 & handout Flux integrals	15, 18, 20, 21, 27, 29, 33; Handout problems
		14.7 Curl & Stokes' Theorem	1, 3, 4, 6, 19, 26
	Nov. 23–24	14.7 Stokes' Theorem	8–10, 13, 16, 17, 20–23 (13–18: also evaluate using the line integral in Stokes' Theorem. Assume the surface is oriented away from the *z*-axis)
	Nov. 25–27	Thanksgiving Break	
14	Nov. 30–Dec. 4	14.8 Divergence Theorem	5–8, 10, 12, 13, 15, 17, 25
		14.8 Catch-up or unification	
		Test Review	
		Exam 4	
15	Dec. 7–11	Final Exam Review (or catch-up)	

Final Exam: The time for the final exam is 6:00-8:00 pm, Wednesday, December 16, Room TBA.

Department Grading Appeals Policy: The Department of Mathematics does not tolerate discrimination or harassment on the basis of race, gender, religion or sexual orientation. If you believe you have been subject to such discrimination or harassment in this or any math course, please contact the department. If, for this or any other reason, you believe that your grade was assigned incorrectly or capriciously, appeals should be made to (in order) the instructor, the department chair, the departmental grading appeals committee, and the college grading appeals committee.