

MA 125 03 FA15 SYLLABUS

Calculus I

Course Goals: With this course, we begin the study of calculus, the most effective method yet discovered for handling non-linear functions. Calculus is concerned with change, and with measuring change. As most of the world is always changing, it is applicable to almost any science, physical, biological, or social. MA 125 introduces three of the four basic concepts of calculus, those of limit, derivative, and integral. You will be introduced to these principal concepts of calculus symbolically, graphically, numerically, intuitively, and formally. The other major concept, infinite series, is introduced in MA 126. You will work on problems involving these concepts both individually and in groups, using both pencil-and-paper and Maple, our computer algebra system. You will gain experience reading about, writing about, and discussing mathematics. You will also be introduced to a range of applications of these concepts.

Class Schedule: Monday, Tuesday, Thursday 4:30 – 5:50 p.m., Howard Hall 309

Instructor: B. Gold, Howard Hall 247, 732-571-4451, bgold@monmouth.edu

Office Hours: Monday 1 – 2, Tuesday 3:15 – 4:15, Wednesday 4:30 – 5:30, Thursday noon – 1, or by appointment or chance.

Required Text: Ostebee and Zorn, *Calculus from Graphical, Numerical, and Symbolic Points of View*, 2nd edition, vol. 1.

Course Requirements: Daily computational problems, daily MapleTA problems, weekly group problems, in-class activities, 4 in-class exams, final exam. Each day *before* class, you must have read the section(s) of the text assigned for that day, and then attempted and submitted, **by 4 p.m.**, the MapleTA (<http://maple.monmouth.edu>) preliminary assignment with that section number (ending in P on the schedule below and online). Any reasonable attempt (i.e. at least 1/4 right) will receive full credit. (For three sections, 4.1, 4.6 and 5.2, there will be no MapleTA assignment. For those days, you're to come to class bringing three questions about the reading; I'll explain in class.) *After class*, you return to that section assignment without the P and rework the problems (and some additional ones). This version will be graded based on percent correct, but you may resubmit the problems up to one week after that class. At that point, your grade for that problem set will be the highest grade you received on that assignment. Problems from the text are due the following day in class. I will collect them approximately once a week, but will call on class members to show how to do any that there are questions on. Group problems are due on Thursdays for the previous week's problems. Group members must all work on the problems together – *they're too hard for you to do correctly on your own*. Members take turns being the “convener” who leads the discussion, the “scribe” who writes the problems up by Tuesday, and the “improver” who fixes the write-up prior to handing it in Thursday. Group problems must be written with clear, full-sentence English explanations of everything except algebraic manipulations, and are graded on clarity of writing, not simply mathematical correctness. Mondays will begin with a weekly “quick quiz” over prerequisite material.

Methods of Evaluation and Grading Policy: Pre-class MapleTA problems 8%, group problems 5%, MapleTA homework 8%, written homework 8%, quick quizzes 1%, in-class activities 2%, four in-class exams 12% each, final exam 20%.

On a scale of 0 to 100, grades of:

A and A- will be assigned to scores of 90 and above

B+, B and B- will be assigned to scores between 80 and 90

C+, C and C- will be assigned to scores between 65 and 80

D+, D and D- will be assigned to scores between 50 and 65

F will be assigned to scores below 50.

If you are have to miss an examination, you must let me know prior to the exam or you receive an automatic 0. You must make arrangements with me some time the day of the exam about when you will take a make-up exam.

Attendance Requirement: Because roughly 1/3 of each class will be devoted to group work on problems, attendance is required. Any unexcused absences may result in grade reduction, and excused absences must be made up with replacement work.

Last date to Withdraw with automatic assignment of "W" grade: Thursday, November 5, 2015.

Statement on Academic Honesty: You are welcome to consult others, whether students in the class or tutors in the Mathematics Learning Center. However, **whenever you have had assistance with a problem** (other than by members of your group for group problems), **you are to state that at the beginning of the solution to the problem.** As long as you write it up in your own words, unless it becomes excessive, there will be no reduction in credit for getting such assistance.

Examination Rules: No student is permitted to have at his or her desk any books or papers that are not given out by the instructor. Possession of such material will be regarded as evidence of intent to use the information dishonestly. No communication between students during the examination is permitted. If there are questions, or if there is a need for additional material, the instructor should be asked. Details of calculations should be written on the pages of the exam. In accordance with the academic honesty policy of Monmouth University each exam will contain the following pledge:

I, _____, certify that I have read the rules for examinations, and that I have abided by them. By signing, I affirm that I have neither given nor received aid during this examination, and I understand that violation of this affirmation may result in suspension or expulsion from Monmouth University."

Statement on Special Accommodations: Students with disabilities who need special accommodations for this class are encouraged to meet with me or the appropriate disability service provider on campus as soon as possible. In order to receive accommodations, students must be registered with the appropriate disability service provider on campus as set forth in the student handbook and must follow the University procedure for self-disclosure, which is stated in the University *Guide to Services and Accommodations for Students with Disabilities*. Students will not be afforded any special accommodations for academic work completed prior to the disclosure of the disability, nor will they be afforded any special accommodations prior to the completion of the documentation process with the appropriate disability office.

Outline of Course Content and Schedule:

On Homework, TA means that assignment name on MapleTA. Those in *italics* (and ending with P) must be *tried* and submitted, but any reasonable attempt gets credit, no later than 30 minutes **before** the following class. You will need to read the sections for the upcoming class in order to make a reasonable attempt. Those not in italics should be done as soon as possible *after* class. They may be reworked for an improved grade up to the deadline of one week later, 4:30 p.m. Homework from the book lists section number and problems. Individual problems are due the following class period. Group problems must be given by the "scribe" to the "improver" on

Tuesday and are handed in to me on Thursday following their week of assignment. So group problems from 1.1 and 1.2 will be collected on 9/17.

Tentative schedule (may have to be adjusted due to unforeseen circumstances)

Date	Reading	Homework
9-8	1.1	4, 8, 16, 18, 20, 28, 30; TA1.1; <i>1.2P</i>
9-10	1.2	4, 12, 32, 36, 40; TA1.2, <i>1.3P</i>
	Group problems	1.1 # 12, 1.2 # 24: explain your answers!
9-14	1.3	16, 24, 28, 36; TA1.3, <i>1.4P</i>
9-15	1.4	2, 4, 8, 14, 48, 52; TA1.4, <i>1.5P</i>
9-17	1.5	16*, 24, 28, 32; TA1.5; <i>1.6P</i>
	Group problems	1.3 # 48, 1.4 # 26, 1.5 # 18
9-21	1.6	22, 24, 54, 56*; TA1.6, <i>1.7P</i>
9-22	1.7	14, 26, 32, 48; TA1.7, <i>2.1P</i>
9-24	2.1	2, 18, 20, 32, 44; TA2.1, <i>2.2P</i>
	Group problems	1.6 # 25-33, 1.7 # 34, 2.1 # 50
	<i>Starting now, TA and</i>	<i>pre-TA assignments won't be listed, but are ALWAYS assigned.</i>
9-28	2.2	10, 18, 20, 34
9-30	Review for Exam 1	Sections 1.1-2.1; sample: TAExam1
10-1	Exam 1	Sections 1.1-2.1

10-5	2.3	2, 13-26, and 2.2 # 68
10-6	2.4	4, 6, 14, 20*
10-8	2.5	8, 22, 28, 30, 32
	Group problems	2.2 # 2, 2.3 # 66, 2.4 # 12, 2.5 # 42
10-12	2.6	10, 16, 22, 28
10-13	2.7	6, 22, 28, 34
10-15	3.1	22, 30, 42, 54
10-17 – 10-20		no class: fall holiday!
10-22	3.2	12, 14, 28, 40
	Group problems	2.6 # 50, 2.7 # 64, 3.1 # 62, 3.2 # 30
10-26	3.3	4, 16, 22, 28
10-27	Review for Exam 2	Sections 2.2 – 3.2
10-29	Exam 2	Sections 2.2 – 3.2

*There are special instructions that will be given in class for these problems.

Date	Reading	Homework
11-2	3.4	4, 8, 14, 16
11-3	4.1**	8, 10, 13, 18, 21, 24, 26
11-5	4.2	6, 16, 18, 26
	Group problems	3.3 # 10, 3.4 # 30, 4.1 # 2, 4.2 # 36
11-9	4.3	4, 12, 22
11-10	4.4	2, 4, 10, 14
11-12	4.5	4, 10, 18, 24
	Group problems	4.3 # 2, 4.5 # 22
11-16	4.6**	2, 4, 5, 6, 8, 18
11-17	Review for Exam 3	Sections 3.3 – 4.5
11-19	Exam 3	Sections 3.3 – 4.5
11-23	4.7	2, 4, 10, 18
11-24	4.8	8, 10, 28, 30, 34
11-26	Thanksgiving:	enjoy
	Group problems	4.6 # 16, 4.7 # 34, 4.8 # 40
11-30	4.9	2, 4, 12, 24, 29
12-1	5.1	2, 6, 18, 24, 44
12-3	5.2**	1, 4, 5, 10, 21, 40, 42, 62
	Group problems	4.9 # 28, 5.1 # 62, 5.2 # 52
12-7	5.3	6, 10, 20, 36, 62
12-8	Review for Exam 4	Sections 4.6 – 5.3
12-10	Exam 4	Sections 4.6 – 5.3
12-14	Final Exam Review	

**For these sections, there will be no MapleTA assignment. On these days, you are to come to class with at least three questions over that section of the text. These questions may be questions about parts of the reading you have found confusing (in this case, be specific: what page, what sentence was confusing?), questions the text has raised in your mind (extensions of what it discusses, for example). If you don't have three of these questions, you may fill out your questions with questions the text answers, "Jeopardy"-style – that is, what question was the book answering by including a particular paragraph – and a brief summary of the book's answer.