

Calculus and Analytic Geometry I, Math 2413

All information is subject to change. Attend all classes, check your email, and course web site regularly.

<http://www.math.lamar.edu/faculty/maesumi/list.html>

Coordinates: MATH 2413-04, Fall 2009, MWF 12:20-1:10, T 11:00-11:50, Lucas 113. Note: Tuesday classes may be extended to 11:00-12:15.

Contact Information: Instructor: Mohsen Maesumi, Room: Lucas 206, Phone: 409-880-8766, E-mail: maesumi@gmail.com. If you are coming to office consider bringing exams, notebooks and supporting material. If you want to leave a message on phone make it brief and speak clearly. If you send email keep a copy and e-mail it again if you do not get a reply within one business day. Write Calculus I, or MATH 2413 in the Subject line and make sure to sign the e-mail by writing your full name (otherwise I may not be able to tell who the email is from). Use of email addresses other than maesumi@gmail.com may delay the response.

Office Hours: MWF 11:15-12:00, 1:30-2:30. I am usually on campus 8:30-2:30. Feel free to drop in. If door is closed knock and wait 30 seconds.

Class Format: This is a hybrid or U-Try type course. Lectures will be delivered on-line, as hand-written in digital ink with narration. Class time will be used for problem presentations by students. This is the central feature of this course. Please make sure you understand this aspect of the course before continuing.

The advantages of using a hybrid course format are:

You can replay the video to understand the lecture better or to review it with a classmate or instructor.

You can pause the video, work a problem yourself, and compare with the presented solution.

You can view the video at your own place, time, and speed.

You get access to animation, graphing and useful links.

You get the most complete lecture notes. Now you cannot be absent.

Most importantly, by putting the lectures on-line, instructor's time in class will be freed for interaction with students. Errors can be corrected in real time, insights can be recognized, and hands-on instruction can become a reality.

Exams: There will be four sectional tests and a cumulative final. Final counts as two tests.

Tests are on Tuesdays September 15, October 6, October 27, November 17. Tests are designed for 50 minutes but if you want extra time you may stay for the full length of period from 11:00-12:15 to get extra 25 minutes.

Final is on Friday December 11 from 11:00-1:30 in class.

You may be allowed to use a formula sheet for a portion of certain exams. In that case you put your name on the formula sheet and put it on instructor's table before test starts. Take the first portion of test without the formula sheet. Once you are done with the first part pick up the second part and the formula sheet. The formula sheet and all other papers should be given to instructor upon completion of test.

Some self-test quizzes may be given, especially on Tuesdays, for review purposes. These quizzes will give you a chance to see where you stand. They will be marked by your neighboring students.

Grading: In-class presentations and lecture notes each have a grade that can help your final grade as follows.

Average Score	Presentation	Lecture Notes	Final Grade
90-100	-	-	A
80-89	A	A	A
80-89	-	-	B
70-79	B	A	B
70-79	-	-	C
60-69	B	A	C
60-69	-	-	D
50-59	-	B	D

Style: Handwriting, presentation, and accuracy count toward your grade for tests, lecture notes, and class presentations. It is very important that you write properly and master efficient ways of explaining technical information. More extensive requirements will be detailed on the web site of the course and on other handouts.

Class Participation: Your class participation grade depends on the following factors

- Student views the videos and studies the text.
 - Student can be engaged in a discussion related to the home work problems.
 - Student presents solutions to exercises on board.
 - Presented solution is correct.
 - Presented solution is well-explained.
 - Presented solution is done from scratch (not copied from homework notebook).
 - Presented solution uses correct mathematical grammar and notation.
 - Student can expand on the problem and its solution.
 - Student gives his/her exercise note book to instructor before starting presentation.
- Copying solution from solution manual or other sources is not acceptable.

Lecture Note: Your lecture note grade depends on the following factors

- Note is handwritten clearly (not printed) on binder paper.
- Note is complete and shows the full content of videos (title, section, verbal description, formulas, graphs, examples, problems).
- Note is handed in a thin folder for daily check (hand in the latest assignment even if it has been checked already, otherwise you will be counted absent). Thick binders, notebooks, etc are not acceptable.
- Note is handed in a regular binder for cumulative check towards the end of semester.

Minimal Requirement: To receive the extra points student

- must submit his/her test e-mail at the beginning of the semester with the required and complete information.
- must submit his/her course evaluation at the end of the semester.

Academic Integrity: University rules apply. Have ID with you at all times. Caps, hair, hand, sunglasses, paper, slouching, etc, should not cover your face during tests. Look at your own papers at all times, do not display your papers to others. Copying from solution manual or end of book is not acceptable.

Absence and Exam Make Up Policy: If you are absent from an exam let me know as soon as possible and be prepared to show written proof of emergency. An individual decision will be made in each case.

Important dates:

Drop day 1, automatic Q, September 28. Contact instructor by September 21.

Drop day 2, Academic Penalty, November 2. Contact instructor by October 26.

Note: There is “a maximum of 6 dropped courses” rule.

Text: Calculus, Early Transcendentals, 6th edition, by James Stewart. If you want to use an older edition please cross check page/problem numbers with a classmate. We will cover Chapters 2-6. Students are assumed to be familiar with chapter 1.

Course Objectives: Successful completion of this course means the students will

- (a) Understand limits and calculate the limit of basic functions, using algebraic, graphical, and numeric methods.
- (b) Understand the concept of tangent lines, and be able to find the slope of a tangent line to polynomial and rational type functions from definition.
- (c) Understand the concept of velocity, acceleration and rates of change of physical quantities and be able to describe events in a rectilinear motion.
- (d) Understand limits at infinity, infinite limits and various types of asymptotes.
- (e) Understand rules and techniques of differentiation (linearity, product, quotient, power, chain, implicit, higher order).
- (f) Understand the differentiation formulas for trigonometric, inverse trigonometric, exponential, logarithmic, and hyperbolic functions.
- (g) Show competency in three critical topics of graphing, related rates, and optimization.
- (h) Understand the connection between area calculation and definite integrals.
- (i) Understand the connection between differentiation and integration, and the fundamental theorem of calculus.
- (j) Show competency in applying simple integration techniques to calculation of areas and volumes of simple regions.

Hardware and Software Requirements: You are advised to make sure you have all the necessary parts in place early on. You will need access to an on-line Windows computer with Windows Media Player (or a compatible software) and speakers or a headset. To view optional demos several free software will be needed as listed on the web site. There are many computer labs on campus for your use: Math Computer Lab Lucas 209, Gray library Media Room on 7th floor, and Computer Science Labs on 2nd floor of Maes Building. In Gray Library you can check out a headset, but in other places you need to bring your own. Most likely you already have a headset, if not, you can purchase an inexpensive one for school use.

Audience: This course is for students in math, engineering, physics, computer science and the hard sciences. Some students from other sciences may be required to take this course as well. All students are graded on the same basis even if they decide to change their major.

Grade Change Requests: In case of error in your grade let me know within one week of the end of semester.

Prerequisites: College algebra, trigonometry and geometry at least at the level of 1314 and 1316 or at the level of 2312. Solid understanding of Chapter 1. Preferably a high school/AP course in calculus or MATH 2376 or 1325. Students who jump from a non-challenging high school algebra or pre-calculus to 2413 do not perform well. Budget by allocating 12 hours per week during long semesters and 18 hours per week during compressed summer semesters. See more detailed information on web site.

Email: I will contact you using the email you have on file at my.lamar.edu. If you want to receive your email at a different address then you should fill “the forward form”. Go to my.lamar and look for the second item in the last column.

All students are REQUIRED to have a working e-mail address and MUST send a test e-mail within 10 days. Send the test email as:

To: maesumi@gmail.com

Subject: Calculus and analytic geometry

For text write your information as follows

First name:

Last name:

Particular circumstances (add any pertinent information I need to know about)

A list of the last four math courses: course title/date/location/grade

Every email must contain first and last name as well as course title.

How to Prepare for Tests:

- 1- View videos regularly and take lecture notes even from the video.
- 2- Rewrite the lecture in your own words.
- 3- Pause the video and try the problem yourself.
- 4- Self-Test: Identify problems for which there is a complete solution in video, text, or class lecture notes. Write the full statement of the problem on an index card, indicate where the solution is to be found, and note the allotted time for its solution. Put the cards in a box. To review before the test pull ten questions randomly from the box and give yourself a timed test. Compare your solution with the correct solution. Identify your incorrect answers and review the relevant sections. Try to test a second time.

Calculator Policy: You are allowed to use a basic scientific calculator on all tests. Basic calculators cost about \$10, have few lines of display, are not capable of drawing graphs, solving equations, differentiating, or integrating. Use of an advanced or graphing calculator will reduce your grade by 50 points. You need to purchase your calculator early and get used to its functions. Do keep the manual or find its web site. Some calculators have the so-called natural language display (e.g. they can show $\frac{\sqrt{2}}{3}$ just as in text). Casio FX-115ES and Sharp EL-W516 are two calculators below \$20 with this ability.

Solution Manual Policy: Do not bring it to class. Solutions copied from solution manual are not acceptable. You should be able to reproduce your solutions from scratch.

No: Food, drinks, ice, gum, candy, chips, texting, ipod, etc.