Lamar University
Department of Mathematics

MATH 2413-04, Calculus and Analytic Geometry
Fall 2015, MWF 12:40-1:35, TR 12:45-2:05 Lucas 113

Instructor: Dr. Mohsen Maesumi
Contact: Lucas L206, maesumi@gmail.com, 409-880-8766
Office Hours: MWF 1:40-2:40, TR 11:00-12:00
Other times available by appointment.
Text: Calculus, Early Transcendental Functions, Larson and Edwards, 6th ed
WebAssign is required and has the e-book of above text.
Prerequisites: Recent C or better in college algebra and college trigonometry
equivalent to Precalculus I and II, Math 2311 and 2312, or MRS 800.

FYI: (a) Course information is subject to change. Attend all classes, check your email, and tune to the
course web site http://www.math.lamar.edu/faculty/maesumi/syllabi.html
(b) Prerequisite of this course is at the level of first chapter of our text, namely
plus the precalculus text by Stits and Zeager
http://www.math.lamar.edu/faculty/maesumi/Syllabi/SZ.precalculus.pdf
The first set of assignments will help you to refresh your knowledge of precalculus.
(c) Students will be asked to sign a statement that they have read and agreed with course policies as
explained here and on the course web site.

Catalog Description: Functions, limits, derivatives of algebraic, trigonometric, exponential and
logarithmic functions, curve sketching, related rates, maximum and minimum problems, definite and
indefinite integrals with applications. Prepares for: MATH 2305, 2414, 3328.

Learning Outcomes: Upon successful completion of this course, students will be able to:

1. Compute the limit of a function.
2. Determine if a function is continuous using the definition of continuity.
3. Interpret various definitions of a derivative including rate of change, slope of tangent line, and
velocity.
4. Differentiate the following types of functions: Polynomials, exponential, logarithm, circular or
hyperbolic trigonometric, inverse trigonometric.
5. Find first order and higher order derivatives using the quotient rule, product rule, chain rule, and
implicit differentiation.
6. Explore tangent lines, related rates, linear approximations, and optimization problems.
7. Identify intervals of increase, decrease, and concavity for a function.
8. Apply the Mean Value Theorem and l'Hôpital’s Rule.
9. Apply the definition of integrals and the Fundamental Theorem of Calculus.
10. Compute definite and indefinite integrals, using various methods including the substitution rule.
11. Find the area under a curve, area between curves, volumes of solids of revolutions using rings,
and volumes of solids of revolutions using shells.
12. Calculate center of mass, moments, fluid force (if time permits).
**Lectures/Discussions:** We will have traditional lectures augmented by problem solving classes where groups of students or a TA will lead the class. Video lessons from prior years are available at [http://www.math.lamar.edu/faculty/maesumi/CalculusOneMAC.pdf](http://www.math.lamar.edu/faculty/maesumi/CalculusOneMAC.pdf)
The course topics and sections are on the course site. The homework list will be on WebAssign site.

**Core Curriculum Outcomes:** Upon completion of this course, the student will demonstrate his or her abilities to think critically, communicate quantitative information, and apply mathematical concepts:
1. **Critical Thinking:** Develop a logical, consistent plan to solve a problem, recognize consequences of the solution, and articulate a reason for choosing solution method.
2. **Communication Skills:** Use and present quantitative information in connection with an argument or problem solution and explicate it in an effective format.
3. **Empirical and Quantitative:** Construct and present a detailed problem statement with evidence of relevant contextual factors and possible approaches for solving the problem, then implement a solution and review the results.

**Grading Policies:**
Grading scale: A>90>B>80>C>70>D>60>F. Your grade is made from homework and four tests.

50% Homework. This is to be done on WebAssign software by the indicated due dates. There is a penalty for late submission.
Student should consider a target deadline for themselves that is 24 hours earlier than the software deadline. Free extension will not be given for electricity/Internet problems. No time extension for registering late.
12.5% Midterm Test 1. Approximate date: last week of September.
12.5% Midterm Test 2. Approximate date: last week of October.
12.5% Midterm Test 3. Approximate date: last week of November.
12.5% Cumulative Final Test. Approximate date: early December.

On tests you are allowed to have a basic scientific calculator and one binder of entirely handwritten notes (lecture and homework). Loose papers, copies, or printed papers are not allowed (notebooks do not work as well as binders, but are allowed).
For your notes to be effective it needs to be searchable like a well-designed web page, with tabs, a table of content, page numbers, index, and summaries. You are advised to write the entire statement of problems and your solution methods in your notes.
Once again, no “printouts” allowed. There will be a 20-point penalty for having printed material on tests, even if not used. In particular nothing printed from WebAssign can be in your binder. There will be an additional 10-point penalty for students using the phrase “I did not know”.

Fluency with WebAssign and its syntax is required. Precise mathematical exposition and handwriting are expected. Some of the basic points of writing mathematics are explained on a separate sheet.

In case you want your exam to be reviewed and re-graded you need to notify me within one week from the day grades are announced. Two weeks after the final your course grade data will be discarded, unless you make a written request in person during the semester.

**Final Exam:** Date to be announced.
**Curving the Grades:** Students usually want to know how to improve their grades, here are the typical questions and answers, as well as some related policies. This class is designed to make it possible for students to pass with a high grade if they make a reasonable effort.

Q. How does doing homework improve my test grade?
A. It is 50% of your grade and tests are open notebook.

Q. How does attendance improve my test grade?
A. WebAssign questions are similar to the questions in the text, and these are what we will practice in class. Exam questions are very similar to problems done in class so attendance becomes very important.

Q. How else do I improve my exam scores?
A. Practice with self-tests. On exams you have ample time to double check your solutions. You are advised to solve each problem twice to check your answers. Make sure your notebook is easily searchable.

**Student Contact Info:** Students are expected to have an active email registered with University which shows up on the “class email list”. A trial email will be sent and announced in class. If you do not receive it, it is your responsibility to contact the responsible university office to correct the issue. (A small percentage of students do have problems with their emails due to choices they made during registration. If you ignore this issue there will be no compensating recourse later.) Please do not change your name or email mid semester.

**Instructor Contact Info:** Your emails to me must be signed by putting your full name (as on the class roll) and the course name. You may be contacted with some last minute course information by email. My only contact is through the following address: maesumi@gmail.com. If you leave a phone message for me (8766) please duplicate it by an email. (Please do not use other email addresses, links or clickable addresses to reach me.)

**Calculator:** You are allowed to have a basic scientific calculator. These cost about $15 and do not have the following capabilities: graphing, computer algebra, wireless, or text storage. If you do not have a proper calculator you will take your test without one. Advanced calculators or sharing is not allowed.

**Absence and Grade Replacement:** If you are absent on any day you have to drop me a note explaining why. The final score may replace the lowest test score. In case students have written verifiable excuse for absence from one test then their missing score may be replaced by their final score.

**No:** Food, drinks, gum, ice, noise, tardiness, e-activity during lectures.

**Class Break:** We will have a short break in each lecture to allow students to reboot themselves. If lack of access to your phone during lectures is causing withdrawal symptoms for you then class break is the time to get your fix, but at all other times phone has to be turned off and tucked away.

**Test Code:** During tests you are to look at your own paper or computer and protect your papers from others. Your face should be visible to the instructor. No obstruction by sunglasses, hair, hand, caps, etc. Academic integrity rules apply (see below). Bring Lamar ID to all tests.

**Privacy Issues:** WebAssign monitors your activity while you use the software. University monitors your activity while you are on its network. Your papers, calculators, phone etc may be inspected by the instructor during tests. You may be asked to change your seat during a test. If you violate the class rules or Test Code you may get a public reminder in class.
Corrections: While I have made a sincere effort to ensure that this syllabus is correct, changes may be required. I will announce any substantive changes during a regularly scheduled class and by email.

General University-Wide Important Information for Students

Course Evaluations Policy: You will have an opportunity to evaluate all aspects of this course in a formal process to be completed online near the end of the term. You will receive an email reminder through your LU account.

No Intimidation Policy: Lamar University expressly prohibits intimidation and harassment of students, faculty, staff, or applicants. [http://students.lamar.edu/academic-support/code-of-conduct.html](http://students.lamar.edu/academic-support/code-of-conduct.html)

Drop Policy: Please make note of the three dates indicated in this drop policy. Any drop will be your responsibility; I will not drop a student from the course.

*September 9, 2015: (Census Date-Six Drop Rule does not apply)* A student may drop or withdraw without consulting with the instructor. The Six Drop Rule does not apply to a drop before 5:00 PM.

*September 28, 2015: (Six Drop Rule applies)* A student may drop or withdraw from the course without academic penalty and receive a Q, however, the Six Drop Rule applies. The student will consult with the instructor and the Records Office to initiate a drop.

*November 9, 2015: (Six Drop Rule applies)* Last day to drop or withdraw with academic penalty; the student must be passing the course at the time of the requested drop in order to receive a Q. The drop form, including all required signatures, must arrive in the Records Office by no later than 4:00 PM. No drop is allowed after this date except in extreme extenuating circumstances. Any “late drop” must be approved by the instructor, department chair, college dean, and provost.

Academic Integrity Policy: Students are expected to maintain complete honesty and integrity in their academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. Students are specifically warned against all forms of cheating and plagiarism. The Lamar University Student Handbook clearly reads: “Any student found guilty of academic dishonesty in any phase of academic work will be subjected to disciplinary action. Punishable offenses include, but are not limited to, cheating on an examination or academic work which is to be submitted, plagiarism, collusion, and the abuse of source materials.” One aspect of the Handbook’s definition of cheating includes “purchasing or otherwise acquiring and submitting as one’s own work any research paper or other writing assignment prepared by an individual or firm.” Plagiarism is defined as “the appropriation and the unacknowledged incorporation of another’s work or ideas into one’s own and submitted for credit.” Faculty members in the College of arts and Sciences investigate all cases of suspected plagiarism. Any student who is found cheating in this course will receive a course grade of F. [http://students.lamar.edu/student-handbook.html](http://students.lamar.edu/student-handbook.html)

Disability Accommodations Policy: Lamar University is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is located in the Communications building room 105. Office staff collaborates with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact the DRC
at 409-880-8347 or drc@lamar.edu to arrange a confidential appointment with the Director of the DRC to explore possible options regarding equitable access and reasonable accommodations. If you are registered with DRC and have a current letter requesting reasonable accommodations, we encourage you to contact your instructor early in the semester to review how the accommodations will be applied in the course. http://www.lamar.edu/disability-resource-center/

**Campus Closure Policy:** In the event of an announced campus closure in excess of four days due to a hurricane or other disaster, students are expected to login to Lamar University's website's homepage for instructions about continuing courses remotely. http://lamar.edu

**Emergency Procedures:** Many types of emergencies can occur on campus; instructions for severe weather or violence/active shooter, fire, or chemical release can be found at: http://www.lamar.edu/about-lu/administration/risk-management/index.html
Following are procedures for the first two:

**Severe Weather:**
- Follow the directions of the instructor or emergency personnel.
- Seek shelter in an interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside.
- If you are in a multi-story building, and you cannot get to the lowest floor, pick a hallway in the center of the building.
- Stay in the center of the room, away from exterior walls, windows, and doors.

**Violence/Active Shooter:**
- **CALL** - 8-3-1-1 from a campus phone (880-8311 from a cell phone). Note: Calling 9-1-1 from either a campus phone or cell phone will contact Beaumont City Police Dispatch rather than University Police.
- **AVOID** - If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.
- **DENY** - Barricade the door with desks, chairs, bookcases or any other items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it is safe.
- **DEFEND** - Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.