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MA 109-2C

Survey of Calculus   *Spring Semester 2013*

Text	*Calculus with Applications* Custom Edition for UAB, by Lial, Greenwell, & Ritchey - Pearson 2012, Topics from Chapters: 3 – 7 with review from Chapters R – 2.
Class meetings	Meeting times: Tuesday and Thursday 11:00 AM – 12:15 PM Meeting location: 145 Education Building
Important Dates	First day of classes: January 9, 2013 Last day to withdraw: March 28, 2013 MLK Holiday (does not affect this class) Spring Break Holidays: March 18 – 22, 2013 (no classes) Major exams (subject to change): 2/12, 3/14, 4/25 Last day of classes: May 1, 2013 Final Exam: Tuesday, May 7, 2013, 10:45 AM – 1:15 PM
Class preparation	Class attendance is required. If you miss class it is your responsibility to determine what you have missed. Before attending class you should: • Read the portion of the text that is to be covered. This will normally be the next section of the text. • Make notes of questions that come up while reading and if these aren't answered during lecture… • Do online homework exercises for the sections that are to be covered in the next class using the Study Aids available in My Math Lab. • Be sure to ask questions and participate in class discussions. • Take notes in class and review the notes as soon as possible after class, rewriting those parts that aren't clear. • Re-do homework exercises for the sections covered in the previous class prior to the next class and ask questions about those you could not solve. There will be a limited period of time during each class to cover homework questions.
Classroom courtesy	Cell phones and all other electronic devices should be turned off and put away during classes and tests. If you must enter the class late or leave early, please respect your classmates and do so in such a way that creates the least disturbance possible.
Calculators	A standard scientific calculator with a **single line display** is allowed. All others are prohibited during tests.
Blazer ID and email	Every UAB student is required to obtain a Blazer ID for communication of urgent information such as school closings and class cancellation. The Blazer ID is an email address @uab.edu. Important class assignments and test information may be distributed via email. It is your responsibility to check this email address daily. You will use your full Blazer ID as your login name for My Math Lab. **Email messages addressed to the instructor (lvaughan@uab.edu) should be in a business-like format and should include your name, your course and section number.**
Homework/ notebook	Homework assigned from My Math Lab (MML) should be kept in a bound notebook. This notebook should contain your class notes, homework, and a file for this syllabus, email messages and graded copies of your tests. Bring your homework notebook to every class or to any meeting where you are seeking help. Note that each question from MML corresponds to a similar question from the text (for example 3.2.15 refers to section 3.2 exercise 15). When asking questions in class about homework refer to the corresponding question from the text.

Methods of teaching and learning	• 30 class meetings of 75 minutes consisting of lectures and discussions of examples and homework problems. Time for three in-class tests is included. • Students are expected to ask questions in class and contribute to class discussions. • Students are expected to undertake at least 6-8 hours of private study and homework per week. • The online homework system My Math Lab, which is described below, will be used.
My Math Lab – graded homework	**Registering for a Course in CourseCompass – *AS SOON AS POSSIBLE*** **You will need the following four things in order to register:** • Your **BlazerID.** i.e. youremailaddress@uab.edu (Use the full address including @uab.edu) • The **course ID: vaughan42576** • Your **access code,** purchased either with the text book or separately • The **UAB zip code** is **35294**. **I. NEW registration** (You have never registered at www.coursecompass.com before.) **To register and enroll in your instructor's CourseCompass course:** 1. Go to www.coursecompass.com, and click the **Register** button in the Students area. 2. Select "Get access to a new course" and follow the prompts to enter the above information. **II. ENROLL in *another* course** *(You have previously registered at* www.coursecompass.com *)* **To enroll in a CourseCompass course that has a *DIFFERENT textbook*:** 1. Login to www.coursecompass.com and click the **Register** button in the Students area. 2. If you can't remember your login name and password, click *Forgot your Login Name/Password?* to have it sent to your email address. ***Do not make a new login name.*** 3. Select "Continue a course, re-take a course, or switch to a different section". 4. If you have already purchased a new code (it should have been included with your text), click on Next. 5. If you have no code, click *Purchase online access* if you want to purchase your new access code with a credit card online. Then follow the directions to complete enrollment.
Objectives	• Students will develop a firm understanding of limits, derivatives, and continuity. • Students will learn rules of differentiation and be able to apply those to polynomial, exponential, and logarithmic functions. • Student will learn the applications of derivatives, optimization, and curve sketching. • Students will develop a basic understanding of antiderivatives, their use in determining areas, and their applications in economics.
Course content	<table><tr><th>Topic</th><th>Text Sections</th></tr><tr><td>1. Linear Functions and their graphs, applications (Review)</td><td>1.2</td></tr><tr><td>2. Properties of Functions, quadratic and polynomial (Review)</td><td>2.1 – 2.3</td></tr><tr><td>3. Exponential and Logarithmic functions (Review)</td><td>2.4 – 2.5</td></tr><tr><td>4. Limits</td><td>3.1</td></tr><tr><td>5. Continuity</td><td>3.2</td></tr><tr><td>6. Rates of Change</td><td>3.3</td></tr><tr><td>7. The Derivative</td><td>3.4</td></tr><tr><td>8. Graphical Differentiation</td><td>3.5</td></tr><tr><td>9. Techniques for finding derivatives</td><td>4.1</td></tr><tr><td>10. Derivatives of Products and Quotients</td><td>4.2</td></tr><tr><td>11. Chain Rule – derivatives of compositions</td><td>4.3</td></tr><tr><td>12. Derivatives of Exponential Functions</td><td>4.4</td></tr><tr><td>13. Derivatives of Logarithmic Functions</td><td>4.5</td></tr><tr><td>14. Increasing and Decreasing Functions</td><td>5.1</td></tr><tr><td>15. Relative Extrema</td><td>5.2</td></tr></table>

	16. Higher Derivatives, Concavity and Second Derivative Test	5.3
	17. Curve sketching	5.4
	18. Absolute Extrema	6.1
	19. Applications of Extrema	6.2
	20. Important Business Applications: Economic Lot Size, Elasticity of Demand	6.3
	21. Antiderivatives	7.1
	22. Area and the Definite Integral	7.3
	23. Fundamental Theorem of Calculus	7.4
	24. Applications of Area: Consumers' Surplus, Producers' Surplus	7.5
Assessment procedures	Student achievement will be assessed by the following measures: • **Regular online homework**. Homework will generally be due one week after assignment. Feedback is provided when wrong answers are given and Study Aids such as Help Me Solve This and View an Example should be explored. Students are encouraged to retake the homework problems (with randomly changed parameters) until they obtain correct answers. An unlimited number of takes is allowed prior to the due date. Homework contributes 18% to the primary course average or 180 points total. Homework should be started well in advance of the due date. Computer/internet issues on the due date are common and are not grounds for extensions. • **Quizzes**. Quizzes are taken online similar to homework except that quizzes are timed. **You must do your own work and may not have assistance of any kind.** You may retake each quiz up to five times before the due date. Since you have a week to complete each quiz, no makeup quizzes will be allowed. Each quiz contributes 4% or 40 points to the primary course average. The total of all 8 quizzes is 320 points or 32%. • **Three 60-minute written tests** in class with questions similar to those on the homework and quizzes. If a test is missed due to a serious verifiable circumstance or official university business, that test grade may be replaced by the final exam score at the discretion of the instructor. Each test contributes 10% to the primary course average or 100 points each. • **A 150-minute comprehensive final examination** with questions similar to those on the 3 in-class tests. The final contributes 20% to the primary course average or 200 points. • **Your primary course average** is the total of the points above with homework (180 points), quizzes (320 points), tests (300 points), final exam (200 points) for a total of 1000 points. An estimate of your current UAB grade is available at **https://secure.cas.uab.edu/mll/db/** After the final exam, a secondary course average will be computed with the final exam accounting for 80% (Homework @45 points, quizzes @ 80 points, tests @ 75points and final exam @ 800 points for a total of 1000 points.) Your final course performance is the maximum of your primary course average and your secondary course average (each is a number between 0 and 1000). Final Grade/Course performance: A (880-1000), B (750-879), C (620-749), D (500-619), F (below 500)
Standards for Written Work	All written work on test questions will be graded according to standards which include: • Completeness – Essential steps in a solution must be included • Organization – each step in a solution must be easy to find with steps logically arranged • Precision – Grouping symbols, equal signs, implication arrows, etc. must be properly used • Legibility • Correctness (Note: Correct answers are only worth about 1/5 of the points on the question.) Books or notes are not allowed during any tests.
How to get help	**Math Learning Lab (MLL)** - Tutorial assistance is available in the MLL located in room HHB 202. The hours of operation are posted on the math web site as well as on the door of the MLL. If you are contacted by the Early Alert Program, you should consider taking advantage of the services it offers. Various services to assist you are also listed in the Student Resources section of BlazerNet. If you wish to request a disability accommodation please contact DSS at 934-4205 or at dss@uab.edu

MA109 - Spring 2013 Class Schedule (subject to change)

		Section 2*	Week	Topics		Quiz and HW Due Dates	
Tue	8-Jan						
Thu	10-Jan	1.1, 1.2, 2.1, 2.2	1	Review of Chap 1 & 2			
					HW1	12-Jan	Chap R
Tue	15-Jan	2.3, 2.4, 2.5			HW2	12-Jan	Chap 1
Thu	17-Jan	2.5, 3.1	2	Limits and Continuity	Quiz 1	14-Jan	Chap R & 1
					HW3	18-Jan	Chap 2
Tue	22-Jan	3.2			Quiz 2	20-Jan	Chap 2
Thu	24-Jan	3.3	3	Rates of Change	HW4	21-Jan	3.1
					HW5	25-Jan	3.2
Tue	29-Jan	3.3			HW6	27-Jan	3.3
Thu	31-Jan	3.4	4	Definition of Derivative	HW7	3-Feb	3.4
					HW8	7-Feb	3.5
Tue	5-Feb	3.5			Quiz 3	11-Feb	Chap 3
Thu	7-Feb	Review	5	Testing			
Tue	12-Feb	Test 1 (3.1 - 3.5)			HW9	18-Feb	4.1
Thu	14-Feb	4.1, 4,2	6	Differentiation Techniques	HW10	18-Feb	4.2
					HW11	22-Feb	4.3
Tue	19-Feb	4.3		Chain Rule	HW12	24-Feb	4.4
Thu	21-Feb	4.4	7	Derivatives of Exponential and Log Functions	HW13	27-Feb	4.5
					Quiz 4	3-Mar	Chap 4
Tue	26-Feb	4.5			HW14	5-Mar	5.1
Thu	28-Feb	Review, 5.1	8	Increasing and Decreasing, Extrema	HW15	8-Mar	5.2
Tue	5-Mar	5.2			HW16	10-Mar	5.3
Thu	7-Mar	5.3, 5.4	9	Higher Derivatives, Curve sketching	HW17	12-Mar	5.4
Tue	12-Mar	5.4, Review			Quiz 5	13-Mar	Chap 5
Thu	14-Mar	Test 2 (4.1 - 5.4)	10	Testing			
Tue	19-Mar	Spring Break					
Thu	21-Mar	Spring Break	11	Absolute extrema, Applications			
Tue	26-Mar	6.1			HW18	29-Mar	6.1
Thu	28-Mar	6.2	12	EOQ and Elasticity	HW19	31-Mar	6.2
Tue	2-Apr	6.3			HW20	5-Apr	6.3
Thu	4-Apr	Review	13	Antiderivatives and Definite Integral	Quiz 6	8-Apr	6.1 - 6.3
Tue	9-Apr	7.1			HW21	12-Apr	7.1
Thu	11-Apr	7.3	14	Fundamental Theorem of Calculus, Area			
					HW22	14-Apr	7.3
Tue	16-Apr	7.4					
Thu	18-Apr	7.5			HW23	21-Apr	7.4, 7.5
Tue	23-Apr	Review			Quiz 7	24-Apr	7.1, 7.3 - 7.5
Thu	25-Apr	Test 3 (6.1 - 7.5)	15	Testing and Review			
Tue	30-Apr	Review			Quiz 8	7-May	Chap 3 - 7
Thu	2-May	No class					
Fri	3-May						
Tue	7-May	Final Exam					