

**University Of Arkansas At Monticello**  
**School of Mathematical and Natural Sciences Course Syllabus**  
**Semester: Spring 2012**

**Instructor:** Dr. Farrokh Abedi, Science Center A 9,

**Course:** MATH 2255, Calculus I    **Time & Room:** M W, 8:10 – 9:00, SC A1  
T H, 8:10 – 9:30, SC A1

**Phone:** 870-460-1216

**E-mail:** [abedi@uamont.edu](mailto:abedi@uamont.edu)

**Office & Office Hours:**    MW 9:00–11:30, 1:30–3:30  
TTH 2:00–3:30, and by appointment

**Course Title and Credit Hours:** MATH 2255 Calculus I, 5 credit hours

**Course Objectives:** The purpose of this course is developing the fundamentals of differential and integral calculus which includes both the ability to perform manipulations and conceptual understanding of basic themes. Specific objectives are:

1. To understand the concepts of limit and continuity, including the ability to calculate limits of various functions.
2. To understand the concept of derivative as both a rate of change and a function, including the ability to calculate the derivative of various functions.
3. To apply the understanding of derivatives to real-world problems.
4. To understand the concept of integral as limit of Riemann Sums and the relationship between the derivatives and the definite integrals as expressed in the Fundamental Theorem of Calculus. Student should learn how to calculate integrals using various techniques.

**Course Prerequisites:** MATH 1033 and 1043, or MATH 1175, or equivalent

**Required Text and Materials:** *Calculus Concepts and Contexts* by James Stewart, fourth edition, published by Thompson-Brooks/Cole. A Texas Instruments TI-89 graphing calculator is recommended (TI-89 cannot be used during the quizzes and exams). All students must have access to a graphing calculator. Strongly recommended models are TI-83, TI-83 Plus or the TI-84 Plus. Other calculators of equal capability may be used, but it is the student's responsibility to understand how to use them.

**Course Content and Schedule Outline:** Revision will be announced as needed.

Topic	Text
Review of Algebra	Sections 1.1 – 1.7
Test 1	

Limits, Tangents and Continuity	Sections 2.1 – 2.6
Test 2	
Derivatives, Differentiation Rules and Rates of Change, The Product and Quotient Rules	Sections 2.7, 2.8, 3.1, and 3.2
Test 3	
Derivatives of Trigonometric Functions, the Chain Rule, Implicit Differentiation, Derivatives of Logarithmic Functions	Sections 3.3 – 3.8
Test 4	
Linear Approximations Related Rates, Applications of Differentiation, Maximum, Minimum Values, Graphing with Calculus and L' Hospital's Rule	Sections 4.1 – 4.5
Test 5	
Optimization Problems, Newton's Method Antiderivatives, Areas and Distances	Sections 4.6 – 4.8 & 5.1
Test 6	
Evaluating Definite Integrals, The Fundamental Theorem of Calculus, the Substitution Rule, and Integration by Parts	Sections 5.2 – 5.5
Test 7	
Integration Using Tables and Improper Integrals	Sections 5.6 – 5.10
<b>Comprehensive Final Exam</b>	<b>Wednesday, May 2, 3:15–5:15</b>

**Grading Policy:** Each student's grade will be determined by homework, chapter tests, and a comprehensive final exam as follows:

Homework & Quizzes	15%	Tests	70%	Final Exam	15%
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Grades will be assigned on the following basis:

A = 90 – 100%	B = 80 – 89%	C = 70 – 79%	D = 60 – 69%	F = 0 – 59%
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**Special Policies:**

1. If one test is missed, then the final exam grade will be substituted for that test grade. If two or more tests are missed, then a grade of zero will be given for each missed test other than the first.
2. If no tests are missed and the final exam grade is greater than the lowest test grade, then the final exam grade will be substituted for that test grade.

3. Cheating and plagiarism are unacceptable activities and a grade of zero will be given for every case of verified cheating. In addition, all occurrences will be reported to the Vice Chancellor for Academic Affairs for other possible actions.
4. You are expected to attend all class meetings and make a serious effort to do the assigned work. Poor attendance is the greatest factor in unsuccessful performance in this course and college in general. You cannot possibly learn the material if you do not go to class. Students will receive 10 bonus points to their total quiz points. For each day they miss class, I deduct half a point from the 10 bonus points. The deduction will be rounded down to the closest whole number. You are responsible for all material covered in these meetings.
5. Disorderly Conduct: Any behavior which disrupts the regular or normal functions of the University community, including behavior which breaches the peace or violates the rights of others is prohibited under the Student Conduct Code. In particular, **all cell-phones must be off for the entirety of class period.**

### **Expectations of the Student:**

While this course is not particularly difficult for those who make a commitment to working on the course it does require both time and energy. Students usually have some difficulty with the course material, especially the content dealing with limits, derivatives, integrations, and application problems. The pace of the course is rapid and it is necessary for you to not only attend class but to seriously attack the homework, review recent lectures, and preview material to be discussed at the next lecture. It is recommended that the student spend at least two hours of study time for each hour of lecture and you should focus on understanding the basic principles presented rather than simply mimicking procedures.

### **IMPORTANT DATES:**

January 11 (Wednesday)	First day of classes.
January 16 (Monday)	Martin Luther King Holiday
January 18 (Wednesday)	Last day to register or add fall classes
March 19–23 (Monday-Friday):	Spring Break.
February 24 (Friday)	Deadline to file for August and December graduation
April 2(Monday)	Preregistration for Summer and Fall begins
April 4 (Wednesday)	Last day to drop with W
April 13 (Friday):	Preregistration for Summer and Fall ends
April 26 (Thursday)	Last day to withdraw from class
May 1 (Tuesday)	Last day of classes
May 2–8 (Wednesday–Tuesday):	Final exams
<b>May 2 (Wednesday) 3:15–5:15</b>	<b>Comprehensive Final Exam</b>
May 11(Friday)	Commencement.

### Students with disabilities:

It is the policy of the University of Arkansas at Monticello to accommodate individuals with disabilities pursuant to federal law and the University's commitment to equal educational opportunities. It is the responsibility of the student to inform the instructor of any necessary accommodations at the beginning of the course. Any student requiring accommodations should contact the Office of Special Student Services located in Harris Hall Room 121; phone 870 460-1026; TDD 870 460-1626; Fax 870 460-1926; email: whitingm@uamont.edu.

For assistance on a College of Technology campus contact:

McGehee: Office of Special Student Services representative on campus; phone 870 222-5360; fax 870 222-1105.

Crossett: Office of Special Student Services representative on campus; phone 870 364-6414; fax 870 364-5707.

Student conduct statement:

Students at the University of Arkansas at Monticello are expected to conduct themselves appropriately, keeping in mind that they are subject to the laws of the community and standards of society. The student must not conduct him/herself in a manner that disrupts the academic community or breaches the freedom of other students to progress academically.

Academic dishonesty:

1. Cheating: Students shall not give, receive, offer, or solicit information on examinations, quizzes, etc. This includes but is not limited to the following classes of dishonesty:
  - a. Copying from another student's paper;
  - b. Use during the examination of prepared materials, notes, or texts other than those specifically permitted by the instructor;
  - c. Collaboration with another student during the examination;
  - d. Buying, selling, stealing, soliciting, or transmitting an examination or any material purported to be the unreleased contents of coming examinations or the use of any such material;
  - e. Substituting for another person during an examination or allowing such substitutions for oneself.
2. Collusion: Collusion is defined as obtaining from another party, without specific approval in advance by the instructor, assistance in the production of work offered for credit to the extent that the work reflects the ideas of the party consulted rather than those of the person whose name is on the work submitted.
3. Duplicity: Duplicity is defined as offering for credit identical or substantially unchanged work in two or more courses, without specific advanced approval of the instructors involved.
4. Plagiarism: Plagiarism is defined as adopting and reproducing as one's own, to appropriate to one's use, and to incorporate in one's own work without acknowledgement the ideas or passages from the writings or works of others.

For any instance of academic dishonesty that is discovered by the instructor, whether the dishonesty is found to be cheating, collusion, duplicity, or plagiarism, the result for the student(s) involved will be

A grade of zero for every case of verified cheating. In addition, all occurrences will be reported to the Vice Chancellor for Academic Affairs for other possible actions.

*School of Mathematical & Natural Sciences*  
**CALCULUS I, MATH 2255, HOMEWORK ASSIGNMENTS**

Abedi, Spring 2012

<i>Section</i>	<i>Page</i>	<i>Problems</i>
1.1	21	2, 5, 6, 20, 23, 27, 28, 35, 42, 50, 58, 61
1.2	35	2, 5, 8, 14, 19, 20, 22
1.3	43	4, 5, 9, 11, 14, 18, 23, 24, 32, 38, 41, 42, 50, 51
1.4	51	2, 4, 5, 18, 19, 21, 22, 23
1.5	59	1(b), 3(b), 4(a, b), 7, 8, 9, 15, 18, 19, 26, 28, 30 32
1.6	69	4, 6, 12, 15, 18, 22, 24, 25, 28, 32, 33, 35-38, 40, 50, 56
1.7	76	4, 5, 8, 10, 13, 16, 18, 24
2.1	94	2, 3, 5, 6, 7, 8
2.2	102	1, 2, 4, 6, 7, 12, 14, 17, 21, 24, 32
2.3	111	2, 3, 4, 10, 12, 14, 18, 20, 22, 2830, 34, 37
2.4	121	3, 6, 7, 9, 11, 13, 15, 18, 26, 28, 30, 32, 33, 36, 37(a, b)
2.5	132	2, 4, 6, 8, 16, 18, 20, 24, 26, 31, 32, 36
2.6	142	4, 10, 16, 17, 22, 24, 34 36, 38, 43
2.7	155	2, 4, 5, 10, 13, 18, 24, 29, 30, 34, 37, 38, 42, 45
2.8	162	1, 4, 7, 8, 12, 16, 20, 22, 26, 28, 32
3.1	181	1, 2, 8, 10, 14, 16, 18, 24, 28, 30, 32, 34, 38, 41, 46,47, 52, 52, 59

3.2	188	1, 3, 6, 14, 26, 30, 38, 42, 45, 48(a, c)
3.3	195	2, 4, 6, 10, 14, 18, 21, 24, 32
3.4	205	2, 6, 8, 12, 18, 19, 21, 22, 36, 44, 46, 50,52, 54, 56,62
3.5	214	6, 10, 16, 18, 22, 25, 28, 34
3.6	220	2, 4, 10, 14, 22, 27, 31, 32, 37
3.7	226	4, 8, 18, 20, 22, 24, 26, 28, 32, 36, 38, 43 52, 52, 59
3.8	237	2, 3, 5, 6, 8, 10, 16, 18
3.9	245	4, 5, 6, 12, 16, 26, 28
4.1	260	1, 2, 4, 8, 12, 14, 16, 18, 20, 23, 24, 26, 27
4.2	268	1, 2, 4, 6, 8, 12, 16, 18, 22, 24, 27, 28, 34, 38, 42, 44, 46 47, 50, 53, 60
4.3	279	1, 2, 4, 6, 7, 8, 14, 20, 21, 24, 26, 32, 34
4.4	288	2, 8, 15
4.5	296	4, 5, 7, 14, 28, 43, 58
4.6	305	2, 5, 9, 10, 14, 16, 25, 40, 54
4.8	321	2, 6, 15, 22, 26
5.1	341	2, 4, 6, 12, 16, 17, 20
5.2	353	2, 6, 7, 10, 17, 32, 34, 36, 38, 44, 47, 48, 49
5.3	363	1, 2, 4, 6, 10, 14, 15, 18, 22, 23, 28, 31, 33, 60, 62
5.4	372	2, 4, 5, 8, 10, 14
5.5	353	1, 2, 5, 8, 9, 12, 18, 22. 23, 30, 37, 40, 44, 54, 57
5.6	387	1, 4, 6, 10, 12, 14, 23, 26
5.7	393	1, 5, 6, 7, 8, 12, 13, 16, 18, 22, 24, 30
5.8	399	1, 8, 10, 16