

MAT 220 - Calculus with Analytic Geometry I

Spring 2006

Course Syllabus

Course and Instructor Information

Instructor	John Seims	Office	PV 225
Telephone	480-654-7768	Section Number	9823
Office Hours	MTR 6:00 - 7:00 pm By Appointment	Course Location	MT - P105 R - P250
		Course Time	MTR 7:10 - 8:35

Course Description Topics from analytic geometry with special emphasis on inequalities and absolute value expressions, limits, continuity, the fundamental principles and formulae for differential and integral calculus along with their applications to geometry and mechanics, the mean value theorems, and the fundamental theorem of calculus. May receive credit for only one of the following: MAT220 or MAT221. Prerequisites: Grade of "C" or better in (MAT150, or MAT151, or MAT152) and MAT182 or MAT187, or equivalent, or satisfactory score on district placement exam.

Textbook *Calculus: Early Transcendentals* by James Stewart. Fifth Edition. Brooks/Cole Publishing Company.

Graphing Calculators A graphing calculator is **required** for this course. I will use the TI-84+ in class. If you are using a graphing calculator, I strongly recommend a TI-84+. **TI-89 USERS: I may not allow you to use a TI-89 graphing calculator on quizzes or tests.**

Attendance and Make-Up Policy Attendance will be taken on a random basis regularly throughout the semester. You may be withdrawn from the class with a W or Y once you obtain five or more absences. If you should miss a class, you are responsible for the material covered in class on the day(s) of the absence(s). You will be responsible for taking each quiz or exam on the scheduled day and time. You are expected to be in class for the entire time that the class meets. A student who arrives late or leaves early may be marked absent for that class.

Important Dates

<i>Item</i>	<i>Official Date (2006)</i>
Classes Begin	January 14
Late Registration Deadline / Drop-Add Deadline	January 20
Last Day For Withdrawal Without Instructor's Signature *	March 3
Last Day for Student Initiated Withdraw With Instructor's Signature*	April 24
Last Day of Regular Classes	May 7
Final Exam Week	May 8 - 11

* See Withdraw Policy below.

<i>Non-Class Days (College Closed)</i>	<i>Date (2005)</i>
MLK Birthday	January 16
Presidents' Day	February 20
Spring Break	March 13 - 19

Withdraw Policy (Please Read Carefully)

- Any student wishing to withdraw from the class must submit a signed and dated add/drop form in accordance to the dates above.
- Failure to attend class does *not* mean you will automatically be withdrawn from the class. Students who do not attend class and fail to submit a signed and dated add/drop form may receive an *F* for the class.

Classroom Conduct You are expected to arrive to each class on time and prepared. This includes having a notebook, textbook, writing instrument, and a calculator, as well as a familiarity with the material being discussed that day. You may also wish to ask questions about the exercises assigned in the previous class. Each student is expected to participate in the class. Excessive talking is not only disruptive to the instructor, but also to fellow students.

Assessments

Homework (Non-Graded) Homework will be assigned each day from the textbook. I will not pick up or grade homework assigned from the textbook. You must still complete the assigned textbook homework exercises to be successful in this class. Caution: Students often fall in the trap on not doing homework because it is not collected. They often find that this leads to failing the class. Do the homework!!

Quizzes (Graded) Quizzes will be given on a random basis throughout the semester. There will be eleven quizzes in all (the lowest or missing will be dropped). These quizzes will usually have two to five questions and you will have fifteen to twenty minutes to complete them. They will allow me to determine if you are completing the homework exercises and maintaining progress in the class. I will drop your lowest or missing quiz score for grade computation. **Quizzes cannot be made up.**

Tests (Graded) Tests will be given throughout the semester. These tests will be designed to assess progress throughout a chapter or chapters. You are expected to take tests on the days they are given. Make-up test consideration will be evaluated on a case-by-case basis. Do not assume you will be allowed to make up a missed test. All test scores will count toward your grade.

Final Exam (Graded) A mandatory, comprehensive final exam will be given during final exam week. You must take the final exam and its score cannot be dropped.

Academic Misconduct Cheating and plagiarism will be subject to disciplinary action. Consult the MCC catalog for more specific information.

Final Grade The following table summarizes the point values for the tests, quizzes, and final exam.

Item (Number)	Points Per Item	Total Points
Quizzes (Eleven)	25	250
Tests (Four)	125	500
Final Exam (One)	250	250
Total Points		1000

You can determine your percent grade at any time during the semester by summing the points you have earned and dividing this sum by the total number of points possible at that time in the semester and multiplying by 100. The following percentage system will be used to determine your letter grade. Standard rounding will be employed.

Letter Grade	Percentage
A	90 - 100
B	80 - 89
C	70 - 79
D	60 - 69
F	Below 60

Disability Statement Any student who require accommodations because of disabilities, including learning disabilities, should identify themselves to discuss the type of assistance needed. If you have any questions about the accommodations, please contact Disability Resources and Services.

My Web Site You may find some of the daily lectures in form of PowerPoint presentations on my web site. You can also check your progress through the class by clicking *Grade Summary*. My web site is <http://mathematics.mc.maricopa.edu/seims/>

***Please Silence Your Cell Phone and Pagers!!
Cell Phones Must Be Silenced and Stowed During Tests!!***

MAT 220 - Calculus I
Course Objectives and Competencies

1. Define and evaluate limits. (I)
2. Define and identify continuity. (I)
3. Apply limits to graphing techniques. (I)
4. Define the derivative. (II)
5. Use the formulas for differentiation. (II)
6. Apply the derivative. (III)
7. Perform indefinite integration. (IV)
8. Evaluate the definite integral. (IV)
9. Use the definite integral in applications. (V)
10. Define and apply the natural logarithmic function. (VI)

1. Limits
 - A. Definition
 - B. Slope of a curve
 - C. Tangent lines to a curve
 - D. Derivatives
 - E. Rates of change such as velocity
 - F. Continuity of a function
2. Derivatives
 - A. Of polynomials
 - B. Rules for differentiating products, powers, and quotients
 - C. Chain rule
 - D. Of trigonometric functions
 - E. Differentials and linear approximations
3. Applications of derivatives
 - A. Newton's method
 - B. Curve sketching
 - C. Rates of change
 - D. The mean value theorem
 - E. Indeterminate forms of limits including L'Hopital's Rule
4. Integration
 - A. Indefinite integrals
 - B. Of polynomials
 - C. Of trigonometric functions
 - D. Definite integrals
 - E. The fundamental theorem of calculus
 - F. Substitutions in integrals
 - G. Approximating definite integrals including the trapezoid rule
 - H. Applications of definite integrals
 - I. Acceleration, velocity, and position of a moving body
 - J. Areas between curves
 - ~~K. Volumes of revolution using disks, washers, and cylindrical shells~~
 - ~~L. Length of plane curves~~
 - ~~M. Areas of a surface of revolution~~
 - ~~N. Average value of a function~~
 - ~~O. Work~~
 - P. Hydrostatic force
5. Transcendental functions
 - A. Derivatives and integrals of inverse trigonometric functions
 - B. Derivatives and integrals of exponential functions
 - C. Properties and derivatives of logarithms
 - D. Rates of growth

MAT 220 - Calculus with Analytic Geometry I
Tentative Course Schedule
Spring 2006

Week	Dates	Sections Covered	Notes
1	1/16 - 1/20	Orientation, Review Topics	1/6 - MLK Day
2	1/23 - 1/27	Review Topics, 2.1, 2.2	
3	1/30 - 2/3	2.3, 2.4, 2.5	
4	2/6 - 2/10	2.6, 2.7, 2.8	
5	2/13 - 2/17	2.9, Test 1 , 3.1, 3.2	
6	2/20 - 2/24	3.3, 3.4, 3.5	2/20 - Presidents' Day
7	2/27 - 3/3	3.6, 3.7	
8	3/6 - 3/10	3.8, 3.9, 3.10	
9	3/13 - 3/17	Spring Break	
10	3/20 - 3/24	3.11, Test 2 , 4.1	
11	3/27 - 3/31	4.2, 4.3, 4.4,	
12	4/3 - 4/7	4.7, 4.5, 4.6	
13	4/10 - 4/14	4.9, 4.10, Test 3	
14	4/17 - 4/21	5.1, 5.2	
15	4/24 - 4/28	5.3, 5.4	
16	5/1 - 5/5	5.5, 5.6, Test 4	
17	5/8 - 5/11	Final Exam Week	May 8, 2006 - 7:10 pm, P105