MA 190-1
Analytic Geometry and Calculus I
Syllabus-Spring 2009

Instructor: Dr. Katherine Adams
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Office Hours: *MWF 8:30-9:30, MW 3:00-4:00, *TR 8:30-10:30, other hours by appointment.

Catalog description: Topics explore the foundations of calculus: limits, continuity, the derivative of a function, the chain rule, the Mean Value Theorem, Riemann sums, integration. Includes applications, optimization problems, derivatives and integrals of algebraic, trigonometric, exponential, and logarithmic functions.

Rationale: Calculus reaches out to a wide range of fields that use the principles to construct mathematical models that bring understanding of the world around us. Some of the fields of study that use calculus are economics, biology, medical research, space exploration, psychology, physics, engineering, physiology, education, computer science, and actuarial science. The material presented in this course is intended to provide students with the mathematical skills necessary to be successful not only in subsequent calculus courses and advanced math courses, but also in related areas. At the conclusion of the course the student will appreciate the derivative and the integral and their potential for application, as well as the Fundamental Theorem of Calculus, which provides an amazing connection between the derivative and the integral.

Goals:

- Further develop the student's skill with algebra and trigonometry.
- To introduce the fundamental concepts of the calculus.
- Develop proficiency with the algorithmic processes of calculus including selecting appropriate techniques and their application in problem solving situations.
- Develop problem solving skills, study habits, skill communicating mathematical notation and vocabulary, and familiarity with the deductive nature of mathematics.

Competencies:

- Proficiency with the algebra of functions. (Math SSC 5.1, 5.2, 5.5, 5.6, 5.7)
- Proficiency in application of calculus to graphing functions and equations. (Math SSC 8.1, 1.11)
- Ability to compute the slope of a tangent line to a curve at a point. (Math SSC 8.1)
- Compute derivatives and integrals for large classes of functions using definitions and standard algorithms. (Math SSC 8.1)
- Apply differentiation and integration to problems in optimization, geometry, approximation, and the physical and life sciences. (Math SSC 8.2)
- Compute limits of various functions using basic properties of limits and/or L'Hospital's Rule. (Math SSC 8.1)
- Comprehend the basic mathematical development of the definite integral and the derivative.
- Illustrate the significance of a few major theorems of calculus (intermediate value theorem, mean value theorem, fundamental theorem of calculus, e.g.)

Performance indicators: These competences shall be assessed primarily by means of written work and written exams. Additional assessment may take place by means of observation of in-class activities and discussion.

COURSE INFORMATION:

Text: Stewart, James (2003), Calculus, 6th edition, Brooks/Cole.

Calculators: It is recommended that you have a graphing calculator. Graphing devices vary greatly so you should have a manual and become familiar with your own calculator and its features.

Grading: Your final grade will be determined by your percentage of possible points earned on:

Homework, quizzes, class participation, etc.	200 points
5 hourly exams (100 points each)	500 points
Final Exam (comprehensive)	200 points

The following scale will be used to determine your semester grade:

90% or above	A	70-79%	C	Below 60%	F
80-89%	B	60-69%	D		

Homework/Quizzes: Homework will be assigned on a regular basis. I recommend that you come to my office to see me about any homework problems that are causing you difficulty. Quizzes are not announced and can not be made- up. ***Excused absences*** are the only exception to this rule.

Attendance: ***Attendance is expected***. Attendance will be taken at the beginning of each class period. Please inform me in advance of any planned absences. For illness or emergency situations, contact me to arrange to make up any missed work. ***Note***: There is an Administrative Withdrawal Policy-any student who misses 2 consecutive weeks of classes will be administratively withdrawn from class. If this happens within the first 6 weeks of classes, it will be recorded as a "W". After the 6th week of classes, it will be recorded as "WF" or "WP" (see college catalog.)

Exams: Exams will be announced. If you have a conflict, it is ***your responsibility to notify me as soon as possible.*** Make-up exams are only allowed for validated illnesses, emergencies, and college related activities such as field trips or sporting events, where your name is on the list of excused students. You must make arrangements with me to take the make-up exam before the next class session. The exam grade will be lowered one letter grade for each class session thereafter.

I will not discuss the grading of an exam in class, before class, or after class. If you have a question about how your exam was graded, see me during my office hours. I will allow 1 week for the discussion to take place. After that your grade stands. Should you have a question about the grading of the exam, I reserve the right to have the entire exam regarded.

***Tentative Schedule:**

Week	**Topics**
1	Chapter 1-Functions and Models
2	Chapter 2-Limits
3	**Exam 1** and Chapter 3-Derivatives
4	Chapter 3
5	Chapter 3
6	**Exam 2** and Chapter 4-Applications of Differentiation
7	Chapter 4
8	**Exam 3**
9	Chapter 5-Integrals
10	***Spring Break***
11	**Exam 4** Chapter 6-Applications of Integrals
12	Chapter 6
13	**Exam 5** and Chapter 7- Inverse Functions
14	Chapter 7
15	Chapter 7
16	**Exam 6** and review
17	**Final Exam**

FINAL EXAM: Tues. 5/5/09 at 10 a.m. You must take the final exam at the time designated for your class. The final exam is mandatory. Make your travel arrangements accordingly.

***** Subject to change at the discretion of the instructor.

MVC ADA Statement

Special Needs: If you have special needs as addressed by the Americans with Disabilities Act, please contact: **Jamie Gold, ADA coordinator, room 206 Baity Hall, phone 831-4170**, and your instructor. After proper documentation, reasonable efforts will be made to accommodate your special needs.

Academic Dishonesty Policy

In order to maintain its credibility as an institution of higher education, Missouri Valley College maintains standards of academic honesty. Therefore, students who are caught cheating or plagiarizing materials in the course will not receive credit for the assignment or test in question, which will likely lead to failure of the course. A detailed description of the Student Code of Conduct statement can be found in the Missouri Valley College Handbook and Missouri Valley College Catalog.

MVC Student Code of Conduct

It shall be the responsibility of every student enrolled at Missouri Valley College to support the academic integrity of the institution. This applies to personal honesty in all aspects of collegiate work, all student records and all contacts with faculty and staff. Academic dishonesty will not be tolerated.

It shall also be the responsibility of every student enrolled at Missouri Valley College to be respectful of the right of other students, staff and instructors to ensure a safe, peaceful atmosphere conducive to the educational goals of an institution of higher learning. **Rude or disruptive behavior will not be tolerated.**

Electronic devices (such as cell phones, iPods, etc.) need to be turned off or muted during class.

Student actions that do not adhere to the MVC Student Code of Conduct will be addressed according to college policies regarding academic dishonesty and disruptive behavior. **A student who exhibits dishonest, disruptive, or disrespectful behavior risk suspension or expulsion from the institution.**