

MA 170 Analytic Geometry and Calculus I
Fall 2008

Instructor: Dr. Kay Somers

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Office Hours: Monday, Wednesday, Friday—11:30 a.m. to 12:20 p.m.; Monday, 2:00 to 3:00 p.m., and by appointment.

Text: James Stewart, *Single Variable Calculus, Early Transcendentals*, sixth edition, Thompson Learning, Inc.

Course Goals: Upon successful completion of this course, you will

- be able to work with functions graphically, algebraically, numerically, and verbally, and use them to model quantitative problems;
- understand the concepts of limit, continuity, derivative, and integral, and the relationships between them;
- know how to find limits and calculate derivatives and integrals using various techniques;
- improve communication and technical writing skills by discussing mathematical problems and presenting solutions.

Course topics: This is a first course in calculus; no background in calculus is expected. Three years of high school mathematics, including trigonometry, are assumed. The course will cover most of the sections in chapters 1 through 5 of your text. The topics discussed in these chapters include: functions, limits and rates of change, continuity, differentiation, optimization, curve sketching, and other applications of differentiation, and integrals and The Fundamental Theorem of Calculus.

Homework—Preparing for each class: At the end of each class, I will assign material from your textbook for you to read for the next class. I expect that you will have read the section(s) under consideration *before* coming to class. In addition, I will assign homework problems to be done after the class session so that you can practice working with the material after we have discussed the material in class. These homework problems will usually be reviewed during the next class. Students are encouraged to study and work together on these homework assignments.

Quizzes: Announced short quizzes will be given frequently in class; there may also be several take-home quizzes. The quizzes will include questions on the reading assignments as well as problems similar to classwork and exercises assigned for homework. No make-up quizzes will be given.

Exams and Proficiency Tests: There will be two hour exams and a comprehensive final exam. The dates of the two exams are: **Monday, September 29** and **Friday, November 7**. The final exam is scheduled by the College and will be given on **Friday, December 19 at 1:30 p.m.**

In addition to the hour exams, there will be two Proficiency tests: a Limit Proficiency Test and a Derivative Proficiency Test. These are 30-minute tests that are designed to test your ability to find limits and compute derivatives without the use of a calculator. Tentative dates for these tests are **Friday, September 19** and **Friday, October 24**. When these tests are first given in class, your recorded score will be 0% or 80-100%. If you receive a 0%, you may retake the test (outside of class time) as often as necessary within four weeks of the original test date. When you score at least an 80% on a retake, your recorded score will be changed to an 80%. Thus, the only way to receive more than 80% is to do well the first time you take the test. (The maximum grade on repeated attempts is 80%.) All retakes of the Limit Proficiency Test must be completed no later than **October 17** and retakes of the Derivative Proficiency Test must be done no later than **November 21**.

Projects: There will be several group projects in which each of you will work with two or three other students. The projects will involve an in-class experimental portion and a reflective write-up completed outside of class. These projects emphasize problem-solving and written communication of mathematics.

Culture Points: To broaden your understanding of mathematics and to help you develop an appreciation for the beauty and utility of mathematics, you are required to spend some time outside of class participating in mathematically-oriented activities. Details on this aspect of the course are described on pages 5 through 8 of this syllabus.

Grading: Your course grade will be computed as follows:

Culture Points	5%
Limit Proficiency Test	5%
Derivative Proficiency Test	10%
Quizzes	15%
Projects	10%
Hour Exams	30% (15% each)
Final Exam	25%

Academic Honesty: For take-home quizzes and projects, you may use your class notes and any books or library sources. However, you may not use the help, orally or in written form, of any individual other than your instructor unless it is specifically a group assignment, and you may not copy someone else's work. If an assignment is completed by a group of two or more people, each person who contributed to the work must put his or her name on the work. The College academic honesty policy appears in your Student Handbook; you are expected to be familiar with it. The *Academic Honesty Policy Guidelines* specific to mathematics classes are clarified at the end of this syllabus. They apply to work done outside of class as well as to in-class quizzes and tests. Please read them carefully. If you are unsure about the propriety of a particular

procedure or approach, please consult with your instructor before continuing with the assignment.

Calculators: You will need to have a graphics calculator to use for this class, and will be expected to bring it with you to each class. (You may also use it on all quizzes and exams **except** the Proficiency tests.) I will provide instructions for using the TI-83 graphics calculator and will use it for classroom demonstrations.

Attendance and organization: Class attendance is required and very important. Some of the calculus concepts will be demonstrated through class activities done in small groups during class. In order to participate, you must be in class. During most classes, there will be questions for you to answer and problems for you to solve. You are responsible for obtaining all class handouts and keeping them organized. A three-ring binder for the course, with sections for class notes, handouts, quizzes and tests, will be very helpful. Students should inform the instructor of any unavoidable absence in advance, if possible. Make-up exams will be given only in the case of a documented illness.

Classroom etiquette: You need to come to class prepared. This means that you have carefully read the assigned material, you have worked (seriously) on the assigned problems and you have your notebook, your textbook, and your calculator with you. You are ready to ask and answer questions in class and to work with your classmates on any in-class group activities. This classroom needs to be a place where everyone feels comfortable asking and answering questions; you are expected to treat everyone in class with respect. You need to turn your cell phone and any other electronic devices off and put them away during class. Finally, you are expected to be on time for class, to stay until class is over and not leave the class unless there is an emergency. This will help you, your classmates, and your professor focus on what we all came to do.

Extra help: You are strongly encouraged to ask questions in class and to see Dr. Somers during office hours or to arrange an appointment for help outside of class as much as necessary. In addition, student tutors are available for assistance Monday through Thursday evenings every week. There is no charge for this help. (However, tutors may not help with projects, take-home quizzes, or any other graded work.)

Accommodations: Any student who wishes to request accommodations under the Americans with Disabilities Act (ADA) for this course should contact Mr. Joe Kempfer, Assistant Director of Learning Services for Disability Support, 1307 Main Street (extension 1510.) Accommodations cannot be provided until authorization is received from the Office of Learning Services.

Possibility of changes: This syllabus is a guideline for the course. It may be necessary to make changes during the semester. I will announce any changes in class.

ACADEMIC HONESTY POLICY GUIDELINES

MATHEMATICS COURSES

The Department of Mathematics and Computer Science supports and is governed by the *Academic Honesty Policy of Moravian College* as stated in the Moravian College Student Handbook. The following statements will help clarify the policies of members of the Mathematics faculty.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thoughts of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the *Academic Honesty Policy of Moravian College*. For homework which is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to explain the solution of all assigned problems, both graded and ungraded.

All in-class or take-home tests and quizzes are to be completed by you alone without the aid of books, study sheets, or formula sheets unless specifically allowed by your instructor for a particular test.