WELLS COLLEGE
MATH 112: Calculus II – Fall 2011
MWF 9:30-10:20 – Macmillan Hall 100
Another hour per week TBA
4 Credit Hours

Instructor: Gregory Moore
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Tentative Office Hours: MF 11:30am-12:20pm
W 11:30am-1:20pm
(see website for up-to-date times)

Course website: http://mailbox.wells.edu/~gmoore/

Text: J. Stewart (2009). *Calculus: Concepts and Contexts*, 4th ed. Brooks/Cole.

Prerequisites: This course assumes the material covered in MATH 111 or an equivalent Calculus I course. Several students may already have studied some of the course topics. If you are one of these, **do not** make the common mistake of trying to "coast" through the course. It will overtake you before you realize it, and there will not be time to catch up. If you did not take MATH 111 and have not studied parametric curves, exponential functions or log functions, be sure to complete the "Prerequisite" Homework Exercises.

Content: From the course catalog: *A continuation of MATH 111, this course explores the fundamental theorem of calculus, methods of integration, and applications. Introduction to differential equations, partial derivatives, vectors, and vector functions.*

We will mainly cover material from chapters 5, 6, 7, 9, 10 and 11 from the text. Among other things these include

Indefinite integrals—"undoing" derivatives
Definite integrals—estimating areas
Fundamental Theorem of Calculus—relating derivatives to integrals
Applications of integration—finding areas, volumes and lengths
Methods of integration—computing difficult integrals
Differential equations—using calculus to describe the world
Vectors—analytic geometry in three-dimensional space
Vector functions—motion in three-dimensional space
Partial derivatives—differential calculus with functions of several variables

Requirements: The formal course requirements listed below—homework, quizzes and exams—are designed to assist you in mastering the course material. However, you must work every day in order for these activities to make a difference. Be sure to ask questions in class or during office hours immediately if you have difficulties.

Calculator: A scientific calculator is both suggested and sufficient for classwork, homework and assessments. A graphing calculator is also acceptable, but not required.

Help: In addition to class time, you may see me in my office or consult the teaching assistants in the math clinic (Mac 120). Please do not hesitate to seek help; that's why we're here.

Homework: By far the most important activity in the course is the doing of problems. There is an enormous difference between watching an instructor do a problem and doing one yourself. Even the best teacher cannot

merely place knowledge in your mind. You must slowly discover it on your own as you struggle with problems. You are encouraged to work with other students when doing homework, but do not fool yourself by copying another's work. You must be an active participant. Homework will not be graded since it is used for learning the course material, but you **must do it**.

Quizzes: We will have quizzes given in class on Wednesdays. The problems will resemble recent homework exercises.

Project: During the course you will be asked to complete one project, individually or together with another student, that applies mathematics principles presented throughout the course to a complex real-world problem. Throughout the course possible projects will be mentioned in class and posted to the website for use as a starting basis. You will discuss your findings with the instructor during office hours (or another mutually acceptable time). Grading will be based both on presentation and mathematical solution.

Exams: There will be three tests, given in class on (tentatively) September 26, October 21, and November 21. The comprehensive Final Exam will take place from 2pm to 5pm on Thursday, December 15. If you cannot attend an exam, it is **your responsibility** to contact me as soon as possible with a valid reason.

Grading:	Quizzes	15%
	Project	15%
	Tests 1, 2 and 3	50%
	Final Exam	20%

Students with Disabilities: If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Coordinator of Learning Support Services, Kristie Zieler (kzieler@wells.edu) to discuss accommodations that will help you succeed. Your conversations with her are highly confidential, and she will not supply details of your disability to anyone without your signed permission. Do understand that Ms. Zieler will need to notify your faculty about accommodations you might need and are supported by your disability documentation.

Prerequisite Homework Exercises:

1.5	7,9,15,17,25
1.6	3,7,11,17,18,21,25,29,33,36,37,40,45,47,48,49
1.7	1,7,9,10,24,33
3.1	11
3.7	2,3,7,9,15,19,31,35,37

Homeworks:

3.6	29,31,33
4.5	7,9,13,15,17,29,33,35,37,55,56,57
4.8	1,3,7,9,11,13,15,19,21,27,39,41,47

5.1 2,5,19,24
5.2 5,7,9,17,31,37,41
5.3 1,5,9,13,15,19,23,41,43,57
5.4 3,4,7,9,11,17,19,21
5.5 3,5,7,11,17,21,33,41,45,47
5.6 5,7,9,11,13,17,19,23
5.7 1,4,6,7,9,11,15,17,25

5.8 5,9,11
5.9 1,13
5.10 5,7,9,11
Focus on Problem Solving 3,7,14

Additional chapters will be assigned in the future.