WELLS COLLEGE
MATH 111: Calculus I – Fall 2012
MWF 8:10-9:20 – Stratton Hall 209
4 Credit Hours

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

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

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

Prerequisites: This course assumes four years of high school mathematics. It is not expected that students have seen calculus before. However, usually several students have studied a little calculus. 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.

Content: From the course catalog: *Properties and graphs of algebraic and transcendental functions. Conceptual and analytical introduction to limits, continuity and derivatives, with applications.*

This course provides an introduction to differential calculus of functions of a single variable. We will cover most of the material in chapters 1 through 4 of the text. Among other things this will include

Review of functions—input/output, formulas, numerical data, graphs, types of functions
Limits of functions—a key idea needed to develop calculus
Continuity of functions—a useful property
Derivatives of functions—slopes, velocities, rates of change
Applications of derivatives—graphing functions, optimization
Integrals—antiderivatives, area, Fundamental Theorem of Calculus

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. I encourage you 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: There will be quizzes 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) October 1, October 31 and November 19. The Final Exam will take place from 9am to 12pm on Tuesday, Dec. 11. 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 Student Achievement, Megan Riedl (mriedl@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.

Homeworks:

Diagnostic tests: p. xxiv - xxviii

Chapter 1

1.1 – 1, 17, 19, 27, 39, 43
1.2 – 17, 19
1.3 – 1, 5, 11, 31, 41, 51
1.5 – 3, 13, 19, 21
1.6 – 1, 9, 21, 25, 29, 35, 37, 49
1.7 – 5, 7, 19, 22, 26

Chapter 2

2.1 – 1,3,7
2.2 – 3,6,7,13,17,21,28
2.3 – 2,3,9,15,19,21,23,35,37,47
2.4 – 9,13,15,29,31,35,41,45
2.5 – 3,7,15,19,25,27,31,33,35,39
2.6 – 3,7,9,11,21,27,31,35,43
2.7 – 1,3,5,9,11,21,25,27,35,43
2.8 – 3,11,15,19,25,31,32
Focus on Problem Solving – 2,3,11,13

Chapter 3

3.1 – 5,7,11,15,17,19,25,27,45,47,48
3.2 – 5,9,15,23,25,29,43,45
3.3 – 1,5,9,16,21,33,43,45,46
3.4 – 6,7,13,15,19,29,31,49,51,55
3.5 – 3,7,13,19,27,31,39,47
3.6 – 1,5,17,19,21,25,31
3.7 – 3,5,11,15,23,33,39,41
3.8 – 1,5,9,15
3.9 – 5,11,17,23;
Focus on Problem Solving – 1,6,9,15

Chapter 4

4.1 3,7,15,23,27,29,33
4.2 3,7,11,33,37,43,47,53
4.3 5,21,27,29,31,33,39,49
4.5 7,11,17,19,27,37,39,41
4.6 7,9,11,15,25,31,35,43
4.8 1,5,7,11,13,19,23,31,43
Focus on Problem Solving – 3,10,19

Chapter 5

5.1 – 1,5,19
5.2 – 3,5,9,17,31,37,43,48
5.3 – 1,5,7,11,15,19,43,45,51
5.4 – 3,7,11,13,19,21
Focus on problem solving: – 3,7,11