

THE COURSE OUTLINE FOR MATH 222, SECTION 04, SPRING 2012

MWF, TIME 12:00-1:00, UU 215

T, TIME 8:30-9:55, UU 206

Instructor: Prof. Adrian Vasiu

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Office hours:

Mo: 2:30–4:00

Tu: 11:00–12:30

Textbook: James Stuart “Single Variable Calculus. Seventh Edition” (2012), Brooks/Cole Cengage Learning, ISBN-13: 978-0-538-49738-1, ISBN-10: 0-538-49783-1.

Course Objectives: The course continues the development of differential and integral calculus started in Calculus I. Students will be introduced to new classes of functions (exponential, logarithmic, inverse trigonometric, etc.) and will learn how to apply differentiation and integration to these functions. The method of L’Hôpital’s Rule will be taught for dealing with certain limits. Various techniques for integration will be taught (by parts, trigonometric substitutions, partial fractions, numerical approximation of definite integrals, improper integrals, etc.). Infinite sequences and series will be studied, and test for investigating their convergence will be learned (the integral, the comparison, the ratio, the root, the alternating series, the absolute convergence, and the power series tests). Methods of representing functions as power series with a radius of convergence will be taught, as well as the Taylor series representations of functions. We will study several applications of integration (length of arc of a curve, area of a surface of revolution). The course aims to conclude with the study of conic sections and an introduction to differential equations. The course material is vital to the study of Calculus III and Differential Equations, and is very useful in many other courses in Mathematics, Physics, Chemistry, Biology, and Economics.

Goals: We will cover a great part of chapters 6 to 11 of the textbook. More precisely, we will study the following sections in the order listed: 6.1, 6.2*, 6.3*, 6.4*, 6.5, 6.6, 6.8, 7.1, 7.2, 7.3, 7.4, 7.5, 7.7, 7.8, 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7, 11.8, 11.9, 11.10, 11.11, 8.1, 8.2, 10.1, 10.2, 10.3, 10.4, 10.5, and 9.3.

Prerequisites: Calculus I (Math 221 or equivalent). Grade C or higher in Calculus I is very much desirable.

Exams: There will be three mid-term exams of 50 minutes and a final exam of 120 minutes. The three common mid-term exams are scheduled for **Wednesday, February**

29, for **Wednesday, March 28**, and for **Monday, April 30** at 7 p.m. The common final exam will be scheduled by the University in early February. Each mid-term exam will be worth 50 points and the final exam will be worth 120 points. Thus the four exams together will be worth 270 points.

Quizzes: There will be 8 quizzes of 10 minutes. Each quiz will be worth 10 points. Thus all the quizzes together will be worth 80 points.

Quiz 1: Wednesday, February 8.

Quiz 2: Wednesday, February 15.

Quiz 3: Wednesday, March 7.

Quiz 4: Wednesday, March 14.

Quiz 5: Wednesday, March 21.

Quiz 6: Wednesday, April 18.

Quiz 7: Wednesday, April 25.

Quiz 8: Wednesday, May 9.

Homework: Will be assigned regularly. The link is <http://www.webassign.net/>

Grading Policy: The total number of points available on exams and quizzes is 350. *Tentative scale:* 92% for A, 87% for A-, 82% for B+, 75% for B, 68% for B-, 61% for C+, 54% for C, 47% for C-, 40% for D. We will also keep track of the homework done and evaluated by the WebAssign system and of the attendance and classroom participation.

Lectures: There will be 51 lectures.

Web-sides: The official web-side is

<http://www.math.binghamton.edu/adrian/#courses>

For past years see also the following ones:

<http://www.math.binghamton.edu/dept/courses/syllabi/descriptions/222.html>

<http://www.math.binghamton.edu/calcII/Archives.html>

Attendance and Classroom Decorum: Students are expected to attend every scheduled class. Late arrivals, early departures, cell phone conversations, eating, or drinking are not appropriate. It is the student's responsibility to keep informed of all announcements, syllabus adjustments, or policy changes made during scheduled classes and/or posted in the BU Brain and/or e-mailed.

Important Note: No calculators or laptop computers will be allowed on exams.