

# MATH 223 – ANALYTIC GEOMETRY and CALCULUS III

- TEXTBOOK:           1. to be announced
2. *Vector Calculus with Maple, 3rd Edition*, (ISBN 0618439242)  
                          By A. Ionescu & R.O. Abbasian, Houghton Mifflin, Boston, 2003
- INSTRUCTOR:           Dr. Adrian Ionescu <http://www.wagner.edu/faculty/users/ionescu/>
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- COURSE WEB PAGE:     <http://ionescu.pageout.net/>

COURSE OBJECTIVES: Mathematics 223 is a continuation of Mathematics 122. It focuses on understanding the concepts of vectors, functions of more than one variable, partial differentiation, and multiple integrals. Applications to geometry and physics, as well as other real-life problems are particularly emphasized in the course, e.g., surface areas or volumes of 3D objects, gradient or divergence of vector fields, etc.

Teaching multivariable calculus, which is the study of curves and surfaces in space, can definitely be enhanced by using the 3-D graphics, and the spatial vector capabilities of Maple. We provide a new look at vector calculus by integrating the use of Maple with the traditional vector calculus curriculum. Close examination of this course will show that while the method of presenting the topics makes extensive use of Maple, this innovation has been introduced without significantly revising the traditional topics.

## COURSE OUTLINE:

- Partial derivatives, maxima and minima
- Double and triple integrals
- Vectors and vector-valued functions
- Line and surface integrals
- Vector fields and vector calculus

GRADING POLICY: You are responsible for all material covered in class, as well as that in the text.

- MIDTERM (30%)
- FINAL (40%)
- CLASS PARTICIPATION (30%)

GRADING SCALE: Letter grades will be determined by the following scale, where 100 corresponds to the highest point total earned by any student in the class:

| Average  | Grade |
|----------|-------|
| 93 - 100 | A     |
| 90 - 92  | A-    |
| 87 - 89  | B+    |
| 83 - 86  | B     |
| 80 - 82  | B-    |
| 77 - 79  | C+    |
| 73 - 76  | C     |
| 70 - 72  | C-    |
| 67 - 69  | D+    |
| 60 - 66  | D     |
| < 60     | F     |

COURSE POLICIES:

- There will be no make-up examinations. *A student who is unable to attend a major examination due to illness or other emergency is required to contact his instructor within 24 hours of the exam time.* If an exam is missed due to an emergency, the final will be counted twice; once as a final, and once in place of the missed exam. Late homework will not be graded.
- Any preceding policies may be waived at my discretion

For inclement weather updates or other announcements please check your e-mail and the following page regularly: <http://www.wagner.edu/faculty/users/ionescu/notes.htm>

If you have a disability for which you may be requesting an accommodation, you are encouraged to contact both your instructor and Dina Assante in the Academic Advisement Center, 390-3278 as early as possible in the term.