

MAC 2313H, Calculus with Analytic Geometry III (Honors), Spring 2006

Course Title: Calculus with Analytic Geometry III (Honors)

Catalog Number: MAC 2313H, Section 0207

Class Number: 98087

Credit Hours: 4

Meeting times: Monday, Wednesday, Thursday and Friday, 11:30AM – 12:20PM

Course Location: MAP 204

Professor: Michael Reid

Office: MAP 231C

Office Hours: Monday 10:30–11:30 and 2:30–3:30, Wednesday 12:30–1:30, Thursday 10:30–11:30 and 2:30–3:30, and also by appointment. No appointment is necessary during normal office hours.

Phone: x3-6462

E-mail: reid@math.ucf.edu (Please use **text format** only.)

Textbook: *Calculus*, 5th edition, by James Stewart

Course Web page:

<http://www.math.ucf.edu/~reid/Teaching/Spring2006/mac2313h.html>

Prerequisite: MAC 2312H or equivalent. You should have a solid understanding of all the material covered in MAC 2311H and MAC 2312H, as well as a strong background in high school algebra, geometry, trigonometry and precalculus.

Course goals: This course is the continuation of MAC 2312H. We give a thorough treatment of vectors, multivariable calculus, partial derivatives, multiple integrals, chain rule, etc. I prefer to emphasize concepts, rather than opaque formulae. By the end of the semester, everyone should have a solid working knowledge of multivariable calculus, partial derivatives, multiple and iterated integrals, and the fundamental theorems of multivariable calculus: Green's Theorem, Stokes' Theorem and the Divergence Theorem.

Topics to cover: Vectors in space, dot products and cross products, equations of lines and planes, cylindrical and spherical coordinates, vector-valued functions, calculus of vector-valued functions, unit tangents, normal vectors and curvature, functions of several variables, limits, continuity and partial derivatives, chain rule, tangent planes and directional derivatives, double integrals, triple integrals and applications, vector fields and line integrals, conservative vector fields, Green's Theorem, curl and divergence, surface Integrals, Stokes' Theorem, Divergence Theorem.

This is a lot to cover, so we will move at a very brisk pace. It is extremely important not to fall behind. If you do so, please catch up immediately.

Grades: I prefer students to focus on learning, instead of worrying about grades. If you learn the material well, and demonstrate that on the exams, your grade will take care of itself.

Grading formula:

Homework: 15%

First midterm: 15%

Second midterm: 15%

Third midterm: 15%

Final exam: 35%

Best exam: 5%

The standard gradelines, are 90% for an A, 80% for a B, 70% for a C, 60% for a D. If appropriate, there may be a curve which would ease these cutoffs, but you should not count on that. Plus and minus grades will be used.

Exams: Each in-class midterm will be announced a week or two before it is given. The final exam is tentatively scheduled for Wednesday, April 26th at 10AM.

Exams may not be missed for any reason other than documented emergencies.

Homework policy: Homework is an important part of this class. Weekly homework will be assigned, collected and graded. You are expected to do all of it. Homework must be written neatly and stapled together. This typically means that you work out the problems on scratch paper, and then transcribe your solutions neatly on separate paper to turn in. Late homework will not be accepted. If you're behind schedule, complete as much as you can, and turn that in. Of course you should finish the rest to bolster your understanding of that material. I will drop your lowest homework score (but not for zeroes on homeworks not turned in).

The expectation for homework is as follows: you should solve all the assigned problems completely and correctly. It's ok if this requires several attempts at some of them. When you're finished with the assignment, you should be able to do those types of problems without referencing your notes or the textbook. This is what you'll be required to do on the exams!

Attendance policy: You are expected to attend every lecture. You are responsible for knowing the contents of every lecture as well as any announcements. Cell phones must be turned off. In general, students should be respectful of their classmates and the instructor.

Additional student resources: Besides attending class, reading the text, and doing the assigned homework problems, students can also attend my office hours for help, can do additional problems from the book, and also attend the Math Lab. Please make use of all available resources!

Special accommodations: Anyone who needs special accommodations for this class must let me know during the first week of the semester (by January 18th at the very latest).