

MAC 2312H, Calculus with Analytic Geometry II (Honors), Spring 2008

Course Title: Calculus with Analytic Geometry II (Honors)

Catalog Number: MAC 2312H, Section 0207

Class Number: 13308

Credit Hours: 4

Meeting times: Monday and Wednesday 4:30 PM – 6:20 PM

Course Location: BHC 129

Professor: Michael Reid

Office: MAP 231C

Office Hours: Monday 6:30 – 7:30, Tuesday 3 – 4, Wednesday 6:30 – 7:30, and also by appointment. No appointment is necessary during normal office hours.

Phone: x3-6462

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

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

Course Web page:

<http://www.math.ucf.edu/~reid/Teaching/Spring2008/mac2312h.html>

Prerequisites: MAC 2311H or equivalent. You will also need to have a solid background in high school algebra, geometry, trigonometry and precalculus.

Course goals: This course is the continuation of MAC 2311H. We give a thorough treatment of techniques of integration and series. We also cover some applications, such as polar coordinates, areas in polar coordinates, Maclaurin and Taylor series. I prefer to emphasize concepts, rather than opaque formulae. By the end of the semester, everyone should have a solid working knowledge of integral calculus and series in preparation for the continuation of this course, MAC 2313H or MAC 2313.

Topics to cover: Logarithmic and exponential functions, inverse functions, inverse trigonometric functions, indeterminate forms and L'Hôpital's rule, Techniques of integration: integration by parts, integrals of trigonometric functions, trigonometric substitution, partial fractions, improper integrals, arclength, areas of surfaces of revolution, direction fields, parametric curves, tangents, areas, arclength, surface area, polar coordinates, arclength, area, conic sections, sequences and series, integral test, comparison tests, alternating series, absolute convergence, ratio and root tests, power series, Taylor and Maclaurin series.

This is a lot to cover, so we will move at a brisk pace. It is extremely important not to fall behind; it will be very difficult to catch up!

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%

I expect to use standard gradelines, i.e. 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 Monday, April 28th at 4 PM. Exams may not be missed for any reason other than documented emergencies.

Homework: 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.

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: Students 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 (in MAP 113). 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 14th at the very latest).