

## DETAILED SYLLABUS

**AMAT 309 - Vector Calculus for Engineers**      L02: MWF 0900      MFH 160

Tutorial: F 1500-1615      ICT 122

**Text:** Calculus, A Complete Course, by Robert A. Adams, Fifth Edition

**Instructor:** M. Hamilton      Office: MS 544      mark@math.ucalgary.ca

**Course Website:** <http://www.math.ucalgary.ca/education/undergrad/courselisting>

Then click on AMAT on the left, then on AMAT 309, then on Lec2

Please see the **Course Information Sheet** posted on the website for full details on prerequisites and University of Calgary regulations.

**Marks:**

|          |     |                                  |
|----------|-----|----------------------------------|
| Homework | 15% | (three assignments)              |
| Quizzes  | 15% | (best 4 of 5)                    |
| Midterm  | 20% | (90 minutes, March 2, 1900-2030) |
| Final    | 50% |                                  |

Students must pass each of these components of the course to obtain a passing mark.

The final exam will be scheduled by the registrar. The Midterm is tentatively scheduled (barring conflicting exams) for Thursday, March 2, 1900-2030, location TBA.

**Calculators:** The use of calculators on examinations and quizzes is not permitted. All quizzes and exams are closed book/closed notes.

**Tutorials:** The weekly tutorial is of 75 minutes duration. If you are having problems or have any questions, you ask your tutorial instructor for help at this time. Approximately every other tutorial will consist of an initial 30-45 minutes to answer any questions and discuss examples, followed by a 30 minute quiz. The emphasis on these quizzes is on showing in a clear coherent manner how you obtained your answer.

The following schedule is flexible and may be adjusted for sanity:

|                         |  |
|-------------------------|--|
| Week 1, Jan. 9-13:      | Sections 11.1, 11.2 (rotating frames & coriolis is cultural), 11.3 |
| Week 2, Jan.16-20:      | Sections 11.4, 11.5, 11.6 (lightly)      Quiz (11.1-11.3)          |
| Week 3, Jan 23-27:      | Sections 12.1, 12.2, 12.3, 12.4, 12.5                              |
| Week 4: Jan. 30-Feb. 3: | Sections 12.6, 12.7, 12.8      Quiz                                |
| Week 5: Feb. 6-10:      | Sections 12.9, 13.1, 13.2, 13.3                                    |
| Week 6: Feb.13-17:      | Sections 13.4, 14.1, 14.2      Quiz; HW due (chapters 11,12, 13)   |
| Week 7: Feb. 20-24:     | READING WEEK   |
| Week 8: Feb. 27-Mar. 3: | Sections 14.4 (may be light), 14.5, 14.6      Midterm Mar. 2       |
| Week 9: Mar. 6-10:      | Sections 15.1, 15.2  |
| Week10: Mar. 13-17:     | Sections 15.3, 15.4  |

|                       |                           |                             |
|-----------------------|---------------------------|-----------------------------|
| Week11: Mar. 20-24:   | Sections 15.5, 15.6, 16.1 | Quiz                        |
| Week12: Mar. 27-31:   | Sections 16.2, 16.3       | HW due (chapters 14, 15)    |
| Week13: April 3- 7:   | Sections 16.4, 16.5       | Quiz                        |
| Week 14: April 10-14: | Sections 16.6, 16.7       | HW due (chapter 16, review) |

Some topics from 14.7 (Applications of multiple integrals) will be covered in lectures and tutorials and homework.

Note that the material in sections 12.4, 12.5, 14.1, 14.2, 14.4, 14.5, and 14.6 was covered to some extent in a previous course, but we will cover the material again (in a review fashion). Topics identified above or in class as “cultural” will not be covered on exams.

Classes end on Thursday, April 13.

The deferred final exam will be on Saturday, May 13, 9-11 a.m. location TBA.

A formula sheet will be provided on the final exam and midterm.

A list of recommended drill problems from the text will be provided in class each week.