



Faculty of Science
DEPARTMENT OF MATHEMATICS AND STATISTICS
Course Information Sheet

1. **AMAT 219 - Multivariable Calculus for Engineers**

WINTER 2004

<u>Lecture/Days</u>	<u>Time</u>	<u>Location</u>	<u>Instructor</u>	<u>Office</u>	<u>Phone</u>
L01/5 – MWF	09:00	ENE 243	B Brenken Email: bbrenken@math.ucalgary.ca	MS 372	220-3948
L02/6/9 – MWF	11:00	ENE 243	Y. Elsabrouy Email: yousry@math.ucalgary.ca	MS 446	220-2255
L03/7 – MWF	15:00	ENE 243	Y. Elsabrouy Email: yousry@math.ucalgary.ca	MS 446	220-2255
L04/8 – MWF	13:00	ENE 243	E. Enns Email: enns@math.ucalgary.ca	MS 548	220-6303

2. **Prerequisites:** Applied Mathematics 217
Co-requisites: None

NOTE: The Faculty of Science policy on pre- and co-requisite checking is outlined on page 198 of the 2003-2004 Calendar. **It is the students' responsibility to ensure that they have the pre- and co-requisites for the course. If they do not, they will be withdrawn from the course without notice.**

3. **Fee policy:** After the last day to drop/add courses, there will be no refund of tuition fees if a student withdraws from a course, courses or the session.
4. **The University policy on grading and related matters** is described on pages 41-42 of the 2003-2004 Calendar. In determining the overall grade in the course, the following weights will be used:

Mid-term Test	[1]	25 %
Quizzes	[11]	20 %
Final Exam		50 %
Maple Assignment	[1]	5 %

A passing grade on any particular component of the course is essential to passing the course as a whole. There will be a final examination scheduled by the Registrar's Office.

5. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined on page 199, of the 2000-2001 Calendar. It is the student's responsibility to familiarize herself/himself with these regulations.
6. **Academic misconduct** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the 2003-2004 University Calendar under the heading "Student Misconduct", pages 53-56.
7. There will be **one out-of-class-time mid-term examination** scheduled by the Faculty of Engineering. **REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a conflict with this out-of-class time activity, please inform your instructor at least one week in advance of the activity so that other arrangements may be made for you.

8. **Text:** Calculus: a complete course, by Adams, R.A., Addison-Wesley, 5th Edition.
9. **Calculators:** The use of calculators in tutorials, test, or final examination is **not** permitted.
10. **Grading System:** The final grade is based on quiz marks, the grade achieved in one test and a comprehensive final examination held outside of class time as follows:

- 20 % on the quizzes held in the labs
- 25 % on the 90-minute Mid-term Test
- 5 % in the Maple Assignment
- 50 % on the final examination scheduled by the Registrar.

Students must obtain at least a grade of ``D" on the final examination in order to obtain an overall final grade of D or better. There is no predetermined grade distribution (curve) for this course.

All work will be graded according to the University Grading System (pp.41-42 of the 2003-2004 Calendar).

Grade point scores for assignments, tests and the final examination will be awarded as follows:

For each of the above, every question will be assigned a positive weight indicating the value of the question. All weights in a particular assignment or test add up to ``one" (1). (This is the same as 100%.) Each question will be given a letter grade. The grade point value of this times the weight will be computed, and the sum of these products will be a grade point score for the assignment; its value will be between 0 and 4 and corresponds approximately to a letter grade. It must not be interpreted as a percent grade.

Example: Three questions, weighted 0.6, 0.2, 0.2. Letter grades are A-, B+, F respectively. The numerical grade for this assignment is

$$(3.7 \times 0.6) + (3.3 \times 0.2) + (0.0 \times 0.2) = 2.88.$$

The final course grade is computed in a similar way.

Example: The student is averaging 2.1 on the lab assignments and received 2.7 on the mid-term test. The student's credit towards the final grade is approximately (because the final quiz average is still not known)

$$(0.20 \times 2.1) + (0.25 \times 2.7) = 1.095.$$

Here the weights 0.20 and 0.25 come from the percentages given on page 1.

At the end, suppose that the quiz average is 2.2, and the final examination has been given 3.0 and 3.6 for the Maple assignment. The final numerical grade is

$$(0.20 \times 2.2) + (0.25 \times 2.7) + (0.50 \times 3.0) + (0.05 \times 3.6) = 2.795.$$

This grade is near 3, and the final letter grade assigned to this student will be in the B range.

Neither the letter grades nor their numerical equivalents are ``out of" anything. In other words, for example, a grade of ``C" or a ``2" are a qualitative assessment meaning ``satisfactory" and **not** 50%.

11. **Homework & Quizzes:** Students should do as many of the problems in the book as possible. Solutions to these problems are **NOT** to be handed in for grading, and solutions can be found in the Student Solutions Manual. The labs are each 75 minutes in duration. The first half-hour is used for discussion of problems. During the last 45 minutes of each lab the student is to work on a quiz which will be handed in for grading at the end of that lab. This will be conducted under **TEST CONDITIONS** except that each student may use his/her notes and any textbook as an aid. The use of calculators is **NOT** permitted. Solutions to these quizzes will be available through the Engineering Drop-in Centre, Room C208.

There is no lab in weeks 1, 6 and 9, and no quizzes in weeks 1, 6 and 9.

Experience shows that students who do little or no homework have difficulty with the lab problems and usually fail this course. Help is available from all instructors either in the first half-hour of the lab or by appointment.

Absences from the various components of the assessment are subject to the regulations on page 198 of the 2003-2004 Calendar.

CALENDAR

WEEK NUMBER	DATE	SECTIONS OF TEXT	TEST/QUIZ
1	Jan 12 – 16	6.1, 6.2, 6.3	NO QUIZ
2	Jan 19 – 23	6.3, 6.5, 6.6	
3	Jan 26 – 30	6.7, 12.1, 12.2	
4	Feb 2 – 6	14.1, 14.2, 14.4	
5	Feb 9 – 13	7.4, 7.5 (both using double integrals)	
6	Feb 16 – 20	Reading Week	NO QUIZ
7	Feb 23 – 27	10.1, 10.2, 10.3, 10.4	
8	Mar 1 – 5	10.5, 11.1, 11.2	
9	Mar 8 – 12	14.5, 14.6	MIDTERM on Monday, NO QUIZ
10	Mar 15 – 19	14.7 (using triple integrals), 8.2	
11	Mar 22 – 26	8.3, 8.4	
12	Mar 29 – Apr 2	11.3, 12.3, 12.4	
13	Apr 5 – 7	12.4, 12.5	
14	Apr 12 – 16	13.1	

NOTES:

- The section numbers refer to the text by R.A. Adams. Some departures from this schedule may take place.
- A lecture falling on the test day may be used for review and the test will be held in the early evening. There are no quizzes in weeks 1, 6 and 9.
- The mid-term test will be on material up to and including Week 7. No calculators.
- By the end of each week you should have mastered the sections of the text indicated on the course calendar and the corresponding assignment. You should prepare for each lecture by reading the text and for each tutorial by attempting to do as many exercises as possible in advance. Math is like weight-lifting – the more reps you do, the stronger you get! The back of the book gives the answers to the odd-numbered exercises, so we recommend that you try these first. Your lectures will not necessarily cover everything in detail; they should guide you in your study of the text. Similarly, your tutorial instructor should help you diagnose your difficulties and teach you how to overcome them. Use the problems at the chapter end for review purposes.