

Faculty of Science
DEPARTMENT OF MATHEMATICS AND STATISTICS

Course Information Sheet

Course:	AMAT 307	Spring 2003
Lecture/Time/Session	L20 M W R 19:00-20:50	SB 103
Instructor/e-mail:	Elena Braverman	maelena@math.ucalgary.ca
Labs	MWR 21:00	
T20 MS 371	Hammouda Ben Mekki	hammouda@math.ucalgary.ca
T21 MS 325	Lei (Christina) Xiong	leix@math.ucalgary.ca
T22 MS 365	Zhiyong (James) Xu	jamesxu@math.ucalgary.ca
T23 ST 055	Andrew Taylor	ataylor@math.ucalgary.ca
Office/Phone/Hours:	MS 444, 220-3956	MWR 18-19
e-mail	maelena@math.ucalgary.ca	
Prerequisites:	Applied Mathematics 219	and Mathematics 221
Co-requisites:	None	
Course's homepage:	www.math.ucalgary.ca/~maelena/307.html	

1. **The university policy on grading** and related matters is described on pages 44-58 of the 2002-2003 Calendar. In determining the overall grade in the course, the following weights will be used:

Quizzes	[best 3 of 4]	25 %
Mid-term exam	[one]	25 %
Final exam		50 %

A passing grade on the final exam is necessary to pass the course. There will be a final examination **scheduled by the Registrar's Office**. The use of aids such as open book, etc. is not permitted. **Calculators and tables are NOT allowed on quizzes, the midterm test and the final exam.**

2. **The mid-term** will be in class on **June 4, 2003**. There will be four quizzes of approximately 35 minutes durations which will be held in labs on Thursdays: **May 22, May 29, June 12, June 19**. The best three marks will be used in the assessment.
3. **Textbooks:** 1. Robert A. Adams: Calculus (Several Variables or Complete Course).
2. J. Goldberg, M.C. Potter: Differential Equations: a System Approach.
4. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined on page 211, of the 2002-2003 Calendar. It is the student's responsibility to familiarize herself/himself with these regulations.
5. **Out-of-class activities:** There will be no out-of-class scheduled activities. Regularly scheduled classes have precedence over any out-of-class-time-activity.
6. **Note:** The Faculty of Science policy on pre- and co-requisite checking is outlined on page 210 of the 2002-2003 Calendar. It is students' responsibility to ensure that they have the prerequisites for the course and if they do not, they will be withdrawn from the course without notice.
7. **Fee policy:** After the last day to drop/add courses (May 16, Friday), there will be no refund of tuition fees if a student withdraws from a course, courses or the session.

8. **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 2002-2003 University Calendar under the heading “Student Misconduct”, pages 53-56.
9. There are no lectures on **May 19, June 5**. There will be a lecture in the tutorial time on **May 14, June 4**.

APPLIED MATHEMATICS 307

“Differential Equations for Engineers”

Calendar Description: H(3-1T-1.5)

Definition, existence and uniqueness of solutions, first and second order differential equations with applications. Laplace transform, systems of equations. Series, series solutions.

Prerequisite: Mathematics 221 and Applied Mathematics 219.

Note: Credit for both Applied Mathematics 307 and 311 will not be allowed.

Syllabus

Topics	Section in the book	Problems, quizzes
First order differential equations Linear equations, Bernoulli's equations Separable equations, exact equations	1.1-1.4,p.99 1.5	Quiz 1 p.69,75-76,85,86,88 p.92-93,97
Second order differential equations General theory Constant coefficients Undetermined coefficients The Cauchy-Euler equation	3.3-3.4 3.6,3.7 3.9 3.11	Quiz 2 p.168,170-171,178,179-180 p.187-188, 198-200 p.211-212 p.224
Variation of parameters High order equations Linear systems of equations	3.12 4.1,4.2 2.1-2.4	p.227-228 p.237 p. 126-127,135-136 Midterm
Nonhomogeneous systems The Laplace Transform The Laplace Transform	2.6 5.1-5.4 5.5-5.7	p.149-150, 154-155 p.279,286-287,292-293 p.297,302,309,313 Quiz 3
The solution of initial-value problems Sequences and series Series solutions	5.9 Adams 9.1-9.7 6.1-6.4	p.323-324 Quiz 4 p.362