

COURSE INFORMATION SHEET

WINTER 2011

- Course:** Mathematics 213 – Honours Linear Algebra I
Lecture/Time: MWF 11:00 – 11:50
Instructor: Dr. Kristine Bauer
Office/Phone/Email: MS 578 / 403-220-7675 / kristine@math.ucalgary.ca
Office Hours: MWF 13:00 – 13:30 or by appointment.
Blackboard course name: MATH 213 L01 – (WINTER 2011) – HONOURS LINEAR ALGEBRA I
- Prerequisites:** A grade of 70 per cent or higher in Pure Mathematics 30. (Alternatives are presented in the paragraph titled Mathematics Diagnostic Test in the Program section of this Calendar.)
(see Section 3.5C of Faculty of Science www.ucalgary.ca/pubs/calendar/current/sc-3-5.html
and Course Descriptions: www.ucalgary.ca/pubs/calendar/current/course-desc-main.html)
- Grading:** The University policy on grading and related matters is described in sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course, the following weights will be used:

<i>Assignments</i>	[10]	30 %
<i>Quizzes</i>	[5]	15 %
<i>Midterm Test</i>		20% (Wednesday March 2)
<i>Final Exam</i>		35 % (To be scheduled by the Registrar)

The various components above will be assigned a percentage score and will be combined with the indicated weights to produce an overall percentage in the course. The conversion table between course percentage and letter grade will be provided at least one week before the withdrawal deadline.

A passing grade in the Final Examination is essential for an overall grade of C- or better.

- Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in section 3.6: www.ucalgary.ca/pubs/calendar/current/sc-3-6.html. It is the student's responsibility to be familiar with these regulations. See also www.ucalgary.ca/pubs/calendar/current/e-3.html.
- REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME ACTIVITY.** If you have a conflict with any 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.
- Textbook:** *Linear Algebra*, 2nd edition, by Hoffman and Kunze.
- Examination Policy:** No books, notes or calculators will be allowed during examinations. Students should also read the Calendar, Section G, on Examinations: www.ucalgary.ca/pubs/calendar/current/g.html
- OTHER IMPORTANT INFORMATION FOR STUDENTS:**
 - 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 University Calendar under K. Student Misconduct (<http://www.ucalgary.ca/pubs/calendar/current/k.html>) to inform yourself of definitions, processes and penalties
 - ASSEMBLY POINTS** in case of emergency during class time. Be sure to **FAMILIARIZE YOURSELF** with the information at <http://www.ucalgary.ca/emergencyplan/assemblypoints>.
 - ACADEMIC ACCOMMODATION POLICY.** Students with documentable disabilities are referred to the following links: Calendar entry on students with disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html>
Disability Resource Centre: <http://www.ucalgary.ca/drc/>

- (d) **SAFEWALK:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call **220-5333** for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **FREEDOM OF INFORMATION AND PRIVACY:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, **students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page.** For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **STUDENT UNION INFORMATION:** VP Academic **Phone:** 220-3911 **Email:** suvpaca@ucalgary.ca.
 SU Faculty Rep. **Phone:** 220-3913 **Email:** sciencerep@su.ucalgary.ca **Website** www.su.ucalgary.ca/home/contact.html.
 Student Ombudsman: <http://www.su.ucalgary.ca/services/student-services/student-rights.html>
- (g) **INTERNET and ELECTRONIC COMMUNICATION DEVICE Information.** You can assume that in all classes that you attend, **your cell phone should be turned off.** Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

Honours Linear Algebra I (Math 213) is a course for students who intend to deeply investigate mathematics in the course of their studies. This is the first in a sequence of three honours linear algebra courses. In this course, you will learn to read and write proofs while discovering the geometric and algebraic interpretations of vectors and vector spaces. This course is more rigorous than **Linear Methods I** (Math 211), although the two courses cover similar topics and have similar goals. Math 213 will prepare you for future honours math classes, and is meant to be a companion to **Honours Calculus I** (Math 281) and **Honours Math 1: Numbers and Proofs** (Math 273).

The honours math program of courses emphasizes *problem solving* and *proof writing*. In order to exercise and develop these skills you will be required to solve homework problems daily – sets of assignments will be due in class on Fridays. You may work with other students when solving homework problems, however you must write your own solution. We will also occasionally engage in group laboratory activities in class designed to enhance your problem-solving skills. Successful completion of a challenging laboratory may be used to improve your quiz average. This course is also a prerequisite to many other courses in ACSC, AMAT, MATH, PMAT and STAT. Therefore, you will also be drilled on the material in bi-weekly quizzes to ensure that you have retained the material covered in class.

The course meets MWF 11:00 – 11:50. The lab meets on Mondays 14:00 – 14:50. The text book for this course is Linear Algebra, 2nd edition, by Hoffman and Kunze. Assignments, labs and solutions, grades and course announcements can be found on the Blackboard website for this course. There is a continuous tutorial schedule for this course (details to follow) and I will also post office hours after the first week of classes. I encourage all students in this class to investigate SCUM (Society of Calgary Undergraduate Mathematicians), a club for students of mathematics. In addition to providing study aids for many mathematics courses, SCUM is also a group of nice folks who are always happy to talk with other math students – either socially or for math advice. The SCUM office is MS 337A.

Schedule of Lecture Topics (subject to change)

Dates	Lecture Topic	Scheduled Activities
January 10 – 14	Systems of equations & row operations	
January 17 – 21	Matrix multiplication & inversion	Assignment 1.
January 24 – 28	Vector spaces	Assignment 2. Quiz 1 (Monday).
Jan. 31 – Feb. 4	Change of basis	Assignment 3.
February 7 – 11	Linear transformations	Assignment 4. Quiz 2 (Monday).
February 14 – 18	More linear transformations	Assignment 5.
February 21 – 25	(no class)	Reading week --- no class.

Feb. 28 – March 4	Polynomials.	Midterm Exam (Wednesday).
March 7 – 11	Determinants	Assignment 6. Quiz 3 (Monday)
March 14 – 18	Characteristic values and vectors	Assignment 7.
March 21 – 25	Elementary canonical forms	Assignment 8. Quiz 4 (Monday)
March 28 – April 1	More elementary canonical forms	Assignment 9.
April 4 – 8	Complex numbers	Assignment 10. Quiz 5 (Monday)
April 11 - 15	Review	Last day of class.