

## COURSE INFORMATION SHEET FALL 2007

- Course:** MATHEMATICS 221 - Linear Algebra for Scientists and Engineers  
**Lecture/Time:** L09 MWF 16:00 – 16:50  
**Instructor:** Kristine Bauer  
**Office/Phone/Email:** MS 578                                220-7675                                kristine@math.ucalgary.ca
- Prerequisites:** 70% or higher in Pure Math 30 or equivalent.  
**NOTE:** The Faculty of Science policy on pre- and co-requisite checking is outlined in the current University Calendar (see [www.ucalgary.ca/pubs/calendar](http://www.ucalgary.ca/pubs/calendar)) *Faculty of Science, section 5C*. **It is the students' responsibility to ensure that they have the pre- and co-requisites for the course, and if they do not they will be withdrawn from the course without notice.**
- 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.
- Academic Accommodations:** It is the student's responsibility to request academic accommodations. A student with a documented disability who may require academic accommodation must register with the Disability Resource Centre to be eligible for formal academic accommodation. DRC registered students are required to discuss their needs with the instructor no later than fourteen (14) days after the start of this course.
- The University policy on grading and related matters** is described in the current University Calendar, *Academic Standings*. In determining the overall grade in the course, the following weights will be used:

<i>Assignments</i>	[ 10 ]	10%
<i>Quizzes</i>	[ Best 4 of 5 ]	30%
<i>Midterm Test</i>		20%
<i>Final Exam</i>		40%

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. The use of a scientific calculator such as the model approved by the school of engineering is allowed. Other aids, such as open book, etc. are not allowed.
- Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined in the current University Calendar, *Faculty of Science, section 6A*. It is the student's responsibility to familiarize herself/himself with these regulations.
- 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 current University Calendar. See: <http://www.ucalgary.ca/honesty/>
- Dates and times of class exercises held outside of class hours (evening tests, Saturday laboratory examinations, weekend field trips, etc.):**  
**\*\* THERE WILL BE NO OUT-OF-CLASS-TIME ACTIVITY.\*\***

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.

9. **Recommended TEXTBOOK:** W. Keith Nicholson, Linear Algebra with Applications, 5<sup>th</sup> edition, McGraw-Hill, 2006.

10. **Course webpage:** Go to blackboard.ucalgary.ca.

11. **Exam dates:** The midterm exam will be held in class on Wednesday, October 24. The final exam will be scheduled by the registrar during the period from December 10, 2007 to December 19, 2007. The use of scientific calculators is permitted at either exam. Graphing or programmable calculators are not allowed and will be removed from the exam.

12. **Continuous tutorial:** The continuous tutorial, held in MS569, is one of your most important resources for this course, since it offers on-demand help specifically for linear algebra, five days per week! You should think of the Continuous Tutorial as a drop-in tutorial to which you can bring all your linear algebra questions. The continuous tutorial is open from 13:00 – 15:00 on MWF and from 12:00 – 15:00 on TR.

13. **SCUM:** The **Society for Calgary Undergraduate Mathematics** is located in MS 337A. They sell exam packages, run final exam reviews, and can often assist with problems. The office is open from 10am to 3pm Monday – Friday, and you are welcome to drop by.

14. **Webwork:** The 10 assignments and 5 quizzes will be completed using webwork. All quizzes will be completed in MS317, the secure webwork laboratory, according to the schedule below. You **MUST** complete your quiz at the scheduled time in MS317. You may not access your assignments from

#### LECTURE SCHEDULE:

		W	F	MATERIAL	EVENTS
<b>September</b>	<b>10</b>	<b>12</b>	<b>14</b>	Linear transformations & matrices.	Assignment 0 due 9/16.
	<b>17</b>	<b>19</b>	<b>21</b>	Sections 1.1 & 1.2.	<b>Quiz 1a &amp; 1b:</b> Assignment 0 Assignment 1 due 9/23.
	<b>24</b>	<b>26</b>	<b>28</b>	Sections 1.3 and 2.1.	<b>Quiz 1c &amp; 1d:</b> Assignments 0 & 1 Assignment 2 due 9/30.
<b>October</b>	<b>1</b>	<b>3</b>	<b>5</b>	Sections 2.2 and 2.4.	<b>Quiz 2a &amp; 2b:</b> Assignment 1 & 2
	<b>8</b>	<b>10</b>	<b>12</b>	Sections 2.4 and 2.5	<b>No class Monday, Oct. 8</b> Assignment 3 due 10/10. <b>Quiz 2d:</b> Assignments 2 & 3
	<b>15</b>	<b>17</b>	<b>19</b>	Sections 3.1 & 3.2, Area	<b>Quiz 2c:</b> Assignment 2 & 3 Assignment 4 due 10/17. <b>Quiz 3b:</b> Assignment 3 & 4
	<b>22</b>	<b>24</b>	<b>26</b>	Review. Section 3.2: matrix inversion revisited.	<b>Quiz 3a:</b> Assignment 3 & 4 <b>MIDTERM EXAM WED. 10/24.</b> Assignment 5 due 10/28.
	<b>29</b>	<b>31</b>		Section 3.3: eigenvalues & eigenvectors.	<b>Quiz 3c:</b> Assignments 4 & 5

<b>November</b>			<b>2</b>	Section 3.3: diagonalization.	<b>Quiz 3d:</b> Assignments 4 & 5 Assignment 6 due 11/4.
	<b>5</b>	<b>7</b>	<b>9</b>	Appendix A. Complex eigenvalues, eigenvectors & diagonalization.	<b>Quiz 4a &amp; b:</b> Assignments 5 & 6
	<b>12</b>	<b>14</b>	<b>16</b>	Section 4.1.	<b>No class Monday, Nov. 12</b> Assignment 7 due 11/14. <b>Quiz 4d:</b> Assignments 6 & 7
	<b>19</b>	<b>21</b>	<b>23</b>	Sections 4.2 & 4.3.	<b>Quiz 4c:</b> Assignments 6 & 7 Assignment 8 due 11/21. <b>Quiz 5b:</b> Assignments 7 & 8
	<b>26</b>	<b>28</b>	<b>30</b>	Section 4.4. Orthogonal & Unitary matrices.	<b>Quiz 5a:</b> Assignments 7 & 8 Assignment 9 due 11/28. <b>Quiz 5d:</b> Assignments 8 & 9
<b>December</b>	<b>3</b>	<b>5</b>	<b>7</b>	Quaternions & rotations in 3D.	<b>Quiz 5c:</b> Assignments 8 & 9 Assignment 10 due 12/5.