



**DEPARTMENT OF SCIENCE**

**COURSE OUTLINE – WINTER 2016**

**MA 1020 A3 APPLIED LINEAR ALGEBRA – 3.5 (3, 1, 0) 60 HOURS**

**INSTRUCTOR:** Thomas Kaip

**PHONE:** (780) 539-2963

**OFFICE:** J218

**EMAIL:** tkaip@gprc.ab.ca

**OFFICE**

**HOURS:** TBA

**CALENDAR DESCRIPTION:**

Vectors and matrices, solution of linear equations, equations of lines and planes, determinants, matrix algebra, orthogonality and applications (Gram-Schmidt), eigenvalues and eigenvectors and applications, complex numbers will be covered in the course.

**PREREQUISITE:** MA 1000

**REQUIRED TEXT/RESOURCE MATERIALS:**

Nicholson: Linear Algebra With Applications 7 E, (or 6th) McGraw-Hill Ryerson 2013

**DELIVERY MODE(S):**

Lecture: A3 10:00 – 11:20 T R J228

Seminar: AS1 11:30-12:20 M J228

**COURSE OBJECTIVES:** This course provides an introduction to linear algebra and their applications. The main topics are: Systems of linear equations, vectors spaces, vector equations of lines and planes, matrix algebra, inverses and invertibility, introduction to linear transformations, subspaces of vectors spaces, Gram-Schmitt

process, determinants, introduction to eigenvalues and eigenvectors, the dot product and orthogonality, applications in a variety of fields.

**LEARNING OUTCOMES:** The student should be able to demonstrate knowledge of the course objectives describe above.

**TRANSFERABILITY:**

University of Alberta \*, University of Calgary \*, University of Lethbridge \*, Athabasca University \*, Augustana Faculty, University of Alberta \*, Concordia University College, Grant MacEwan University, King's University College. (From the GPRC course catalog)

\* An asterisk (\*) beside any transfer institution indicates important transfer information. Consult the Alberta Transfer Guide

Note: A grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.

**GRADING CRITERIA:**

**GRANDE PRAIRIE REGIONAL COLLEGE****GRADING CONVERSION CHART**

<b>Alpha Grade</b>	<b>4-point Equivalent</b>	<b>Percentage Guidelines</b>	<b>Designation</b>
<b>A<sup>+</sup></b>	<b>4.0</b>	<b>95 – 100</b>	<b>EXCELLENT</b>
<b>A</b>	<b>4.0</b>	<b>90 – 94</b>	
<b>A<sup>-</sup></b>	<b>3.7</b>	<b>85 – 90</b>	<b>FIRST CLASS STANDING</b>
<b>B<sup>+</sup></b>	<b>3.3</b>	<b>80 – 84</b>	
<b>B</b>	<b>3.0</b>	<b>75 – 79</b>	<b>GOOD</b>
<b>B<sup>-</sup></b>	<b>2.7</b>	<b>70 – 74</b>	
<b>C<sup>+</sup></b>	<b>2.3</b>	<b>66 – 69</b>	<b>SATISFACTORY</b>
<b>C</b>	<b>2.0</b>	<b>62 – 65</b>	
<b>C<sup>-</sup></b>	<b>1.7</b>	<b>58 – 61</b>	
<b>D<sup>+</sup></b>	<b>1.3</b>	<b>55 – 57</b>	<b>MINIMAL PASS</b>
<b>D</b>	<b>1.0</b>	<b>50 – 54</b>	
<b>F</b>	<b>0.0</b>	<b>0 – 49</b>	<b>FAIL</b>
<b>WF</b>	<b>0.0</b>	<b>0</b>	<b>FAIL, withdrawal after the deadline</b>

**EVALUATIONS:**

Assignments: 10%

Quizzes: 15%

Midterm: 25%

Final Exam: 50% (Cumulative and scheduled during exam period, TBA)

Note: There will be no make-up quizzes or exams. If a quiz/test is missed for a valid reason and proper documentation is provided, then the weight of the quiz/test will be transferred to another component.

**COURSE SCHEDULE/TENTATIVE TIMELINE:**

Not all topics from the individual chapters will be covered

1.	Chap 1	1 weeks
2.	Chap 2	1.5 weeks
3.	Chap 3.	1.5 weeks
4.	Chap 4	1.5 weeks
5.	Chap 5, 6, Appendix A	3 weeks
6	Section 7.1, 9.1, 10.1-10.2	2.5 weeks

**ASSIGNMENTS:** Most weeks an assignment will be handed out and will be due one week later.

**QUIZZES:** Quizzes will be held on the day an assignment is due, based on the assignment..

**CALCULATORS:** Use of calculators is not permitted on the quizzes or exams.

**STUDENT RESPONSIBILITIES:**

Attend all lectures and seminars. If a lecture or seminar is missed, it is the student's responsibility to catch up on the material and obtain the missing lecture notes.

**STATEMENT ON PLAGIARISM AND CHEATING:**

Refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at [www.gprc.ab.ca/about/administration/policies/](http://www.gprc.ab.ca/about/administration/policies/)