

DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2012 MA 2250 A3 LINEAR ALGEBRA II

INSTRUCTOR: Dr. Brian Redmond, Ph.D. **PHONE**: (780) 539-2093

OFFICE: J206 **EMAIL:** bredmond@gprc.ab.ca

OFFICE HOURS: M W F 10:00am – 11:00am

PREREQUISITE: MA1020 or MA1200

REQUIRED TEXT/RESOURCE MATERIALS:

Anton & Rorres: Elementary Linear Algebra: Applications Version, 10E, Wiley 2010.

CALENDAR DESCRIPTION:

Vector spaces; inner product spaces; examples of n-space and the space of continuous functions. Gram-Schmidt process, QR-factorization of a matrix and least squares. Linear transformations, change of basis, similarity and diagonalization. Orthogonal diagonalization, quadratic forms. Applications in a variety of fields, numerical methods.

CREDIT/CONTACT HOURS: 3 (3-1-0) UT

DELIVERY MODE(S):

Lecture: 10:00-11:20 T R J202 Seminar: 14:30-15:20 F J202

TRANSFERABILITY:

UA, UC, UL, AU, GMU, other. Consult the Alberta Transfer Guide for more information.**

^{**}Note: 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 | | | | | |
| Alpha Grade | 4-point | Percentage | Designation | | |
| | Equivalent | Guidelines | Designation | | |
| A⁺ | 4.0 | 90 – 100 | EXCELLENT | | |
| Α | 4.0 | 85 – 89 | LACLLEIVI | | |
| A ⁻ | 3.7 | 80 – 84 | FIRST CLASS STANDING | | |
| B⁺ | 3.3 | 77 – 79 | | | |
| В | 3.0 | 73 – 76 | GOOD | | |
| B ⁻ | 2.7 | 70 – 72 | | | |
| C ⁺ | 2.3 | 67 – 69 | | | |
| С | 2.0 | 63 – 66 | SATISFACTORY | | |
| C_ | 1.7 | 60 – 62 | | | |
| D⁺ | 1.3 | 55 – 59 | MINIMAL PASS | | |
| D | 1.0 | 50 – 54 | | | |
| F | 0.0 | 0 – 49 | FAIL | | |
| WF | 0.0 | 0 | FAIL, withdrawal after the deadline | | |

EVALUATIONS:

Assignments: 12.5% Quizzes: 12.5% Midterm: 25% Final Exam: 50%

STUDENT RESPONSIBILITIES:

Attend all lectures and seminars and check moodle regularly for course updates.

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/**

^{**}Note: all Academic and Administrative policies are available on the same page.

COURSE SCHEDULE/TENTATIVE TIMELINE:

| Week | Sections | Notes |
|------------------|----------------------------|-------------------------------|
| 1. Jan. 2-6 | Introduction | First class: Thurs. Jan. 5 |
| 2. Jan. 9-13 | Vector Spaces Review | |
| 3. Jan. 16-20 | Inner Product Spaces | |
| 4. Jan. 23-27 | §6.1-6.6 | |
| 5. Jan. 30-Feb.3 | | |
| 6. Feb. 6-10 | Orthogonal Diagonalization | |
| 7. Feb. 13-17 | §7.1,7.2 | |
| 8. Feb. 20-24 | No classes | Winter Break |
| 9. Feb. 27-Mar.2 | Review and Midterm | Midterm – Thurs. Mar.1 |
| 10. Mar. 5-9 | Numerical Methods | Mar. 6 – Last day to withdraw |
| 11. Mar. 12-16 | SVD: §9.5,9.6 | Mar. 14 – Pi Day |
| 12. Mar. 19-23 | Quadratic Forms | |
| | §7.3,7.4 | |
| 13. Mar. 26-30 | Linear Transformations | |
| 14. Apr. 2-6 | §8.1-8.5 | Friday, Apr. 6, Good Friday- |
| | | College Closed |
| 15. Apr.9-13 | Applications TBA; Review | |
| Apr.16-26 | | Final Exams |