Math 152 Course Outline
Section 202 Winter 2012
Instructor: Jose Gonzalez

Week #1: (Jan 5) Vectors and coordinate representation; vector length, dot product, projection.

Week #2: (Jan 10 & 12) Determinants; cross product; lines and planes in 2D and 3D and planes in 3D.

Week #3: (Jan 17 & 19) Geometry of solutions of linear systems; linear dependence and independence; solving linear systems.

Week #4: (Jan 24 & 26) Solving linear systems (cont.); echelon form and rank; homogeneous equations.

Week #5: (Jan 31 & Feb 2) Resistor networks; review.

Week #6: (Feb 7 & 9) **Test #1** (February 7. Topics: Chapter 2 & Chapter 3 from the Course Notes, in other words Week #1 - Week #5); matrix multiplication; linear transformations; rotations, projections and reflections in 2D.

Week #7: (Feb 14 & 16) Matrix representation and composition of linear transformations; random walks; transpose.

Spring Break (Feb 20-24)

Week #8: (Feb 28 & Mar 1) Matrix inverse; matrix representation of resistor network problems; determinants.

Week #9: (Mar 6 & 8) Determinants (cont.); complex numbers; complex linear systems.

Week #10: (Mar 13 & 15) Eigenvalues and eigenvectors; review.

Week #11: (Mar 20 & 22) **Test #2** (March 20. Topics: Chapter 4, Chapter 5 & Section 6.1 from the Course Notes, in other words Week #6 - Week #10); powers of a matrix; application of eigen-analysis to random walks.

Week #12: (Mar 27 & 29) Application of vector DEs to electrical networks; vector differential equations.

Week #13: (Apr 3 & 5) Review.

Final Exam (Date to be announced. Exam Dates: April 11-25)