| **Linear Algebra** | **Math 220** | **Fall 2012** |
| 11-12:03pm | 17-102 | Item #6354 |

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Course Description: (5 credits) Systems of Equations, row operations, matrix algebra, vector spaces, orthogonality, Gram-Schmidt, projections, linear transformations, matrix representations, rank, similarity, determinants, Eigenvalues, Eigenvectors, and least squares.

Course Objectives: *The student will*

- solve a system of linear equations using Gauss-Jordan method.
- find powers of a matrix and limits if they exist.
- identify a basis for a vector space and/or orthogonalize a basis.

- find a least squares polynomial fit to data points.
- find the eigenvalues and eigenspaces of a matrix.

Text: *Linear Algebra with Applications* (4th ed.), by Otto Bretscher. Bring the book to class!

Prerequisite: Math152 with a minimum grade of 2.0. Math 153 is recommended.

Calculators: A graphing calculator is required for this course.
i.   The TI-83/4 is recommended. The use of symbolic calculators such as the TI-89 will likely not be allowed during exams. Furthermore, the use of all calculators may be prohibited during some quizzes or exams (forewarning will be given).
ii.   Very limited class time will be spent explaining the use of calculators.
iii.   Calculators may be rented from the math department on a first come first serve basis.

Homework: The format and grading criteria for homework is as follows.
i.   **Assigned Problems:** You are to work the problems assigned in class.
ii.   **Presentations**: About once a week we will have a homework day. Students will be randomly assigned an order and then given the chance to select a problem from among those assigned. Students will then present the work and solution for their problem on the whiteboard (or equivalent). Students who attend, but do not present will receive attendance credit. Additional credit will be given for undertaking more challenging problems (and less than full credit given for warm-up questions).

Projects: There will be three projects assigned during the quarter.
i.   The projects are designed to give you a better grasp of the graphs and pictures of linear algebra.
ii.   Some will be individual efforts and others may be worked with a partner.
iii.   If you miss a project, a score of 0% will be assigned.

Tests: There will be tests given during the quarter.

i.   The exams will be cumulative, but will emphasize the material covered since the last test.

ii.   If you miss a test, a score of 0% will be assigned. All tests must be taken during the scheduled class time. *No make-up tests*.

iii.   Spoken and written communication as well as sharing of calculators during exams is prohibited.

Final Exam: A comprehensive final exam will be held in the regular class meeting room. The date and time of the final are listed in the quarterly. The final exam is mandatory and a grade of 0.0 may be assigned at the instructor's discretion to those who fail to take the final exam.

Grading: Homework: 10%, Projects: 10%, Exams: 50%, Final Exam: 30%.

%%%	GPA	%%%	GPA	%%%	GPA	%%%	GPA	%%%	GPA
95-100%	4.0	82%	3.2	75%	2.5	68%	1.8	61%	1.1
93-4%	3.9	81%	3.1	74%	2.4	67%	1.7	60%	1.0
91-2%	3.8	80%	3.0	73%	2.3	66%	1.6	59%	0.9
89-90%	3.7	79%	2.9	72%	2.2	65%	1.5	58%	0.8
87-8%	3.6	78%	2.8	71%	2.1	64%	1.4	57%	0.7
85-6%	3.5	77%	2.7	70%	2.0	63%	1.3	0-56%	0.0
84%	3.4	76%	2.6	69%	1.9	62%	1.2		
83%	3.3								

Policies and Notes:

i.   **Attendance**: You are responsible for all material covered in class including all announced changes to the schedule and assigned course work. (If you miss class, *you* are still responsible for everything in class).

ii.   **Cell Phones**: The use of cell phones, pagers, and palm pilots in class is strictly prohibited (except when needed for class purposes). Failure to comply may result in your removal from the classroom.

iii.   **Math Resource Center**: Cost-free individual and group mathematics tutoring is available in the MRC which is located in building 26, room 319.

iv.   **Academic Dishonesty**: Cheating, plagiarism, and other forms of academic dishonesty are unacceptable at Highline Community College and may result in lower grades and/or disciplinary action. It is both your right and responsibility to be familiar with the document entitled: Student Rights and Responsibilities code WAC 132I-1210 adopted by the Board of Trustees of Community College District 9 on December 13, 2007. This is available in the counseling center.

v.   **Special Concerns**: If you have any special concerns about this class, please talk to me personally in my office. The more I know about you individually, the more I can help you be successful in this course. If you need course adaptations or accommodations because of dis-Ability; if you have emergency medical information to share with me; or if you need special arrangements in case the building must be evacuated, please provide me with the Letter of Accommodation you have received from the Office of Access Services. Access Services is located in Building 99 in the Student Development Center.

vi.   **Important Dates**: The last day to drop without incurring a "W" and the last day to officially withdraw with a "W" are listed in the quarterly.