

Math 220: Linear Algebra (Item #6411)

Winter 2020 in 17-106 M – F: 10-10:50am

Syllabus

Instructor Information

- i. Instructor: Dusty Wilson
- ii. Office: 29-341
- iii. Phone: 206-592-3338
- iv. Office Hours: Monday: 9-9:50 am, Tuesday: 9-9:50 am, Wednesday: 9-9:50 am and Thursday 8-9:50 (9 am on the 6th floor of the Library in the MRC)
- v. home page: <http://people.highline.edu/dwilson>
- vi. e-mail: dwilson@highline.edu

Course Description

Introduction to Linear Algebra: Row operation, matrix algebra; vector spaces, orthogonality, Gram-Schmidt orthogonalization, projections, linear transformations and their matrix representations, rank, similarity; determinants; eigenvalues, eigenvectors, and least squares.

Student Learning Outcomes

- i. Solve systems using Gauss-Jordan elimination.
- ii. Identify and orthogonalize the basis of a vector space.
- iii. Apply matrix methods to model a data set using least squares regression.
- iv. Calculate and interpret the eigenvalues and eigenvectors of a matrix.
- v. Identify, create, and apply linear transformations using matrix methods.
- vi. Construct a mathematical proof.

Text

Linear Algebra with Applications (5th ed.), by Otto Bretscher. Bring the book to class!

Prerequisite

Math 152 with a minimum grade of 2.0.

Calculators

A graphing calculator is required for this course.

- i. The TI-84 calculator is recommended. The use of symbolic calculators will not be allowed during exams. Furthermore, the use of all calculators may be prohibited during some 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 and Quizzes

Homework and Quizzes will be assigned on MyLabs online. It is important that you use the online resources to learn the material, and not just “get problems right”. Keep an organized notebook of your work, clearly labeling the section and problem number, etc. so you can review your work as it will be helpful on quizzes.

- i. You will have five attempts on each/most homework questions.
- ii. Quizzes are timed and short. The questions parallel the homework assignments. You may attempt each quiz three times, but are allowed only one attempt at each question.

In class

2% of the grade is designated to in-class discussion seminars. Half the credit will be for preparation for the seminar and the other half for attendance.

Assessments

There will be weekly assessments:

- i. The assessments will be cumulative, but will emphasize recent material.
- ii. The length/value of the assessments will vary from 15 minutes up until the full time period. Advance notice will be given.
- iii. Grades will be assigned on the basis of points and assessments will vary in the maximum number of points possible.
- iv. Your lowest assessment score will be dropped.
- v. All assessments must be taken during the scheduled class time. No make-ups.
- vi. 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. See the quarterly class schedule for dates and times. 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: 9%, Quizzes: 9%, In-class: 2%, Assessments: 50%, and Final Exam: 30%. GPA's will be given according to:

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

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. **Devices:** The use of non-human smart gadgets in class is discouraged (except when requested). Smart non-human devices are banned during tests.
- iii. **Math Resource Center:** Cost-free mathematics tutoring is available at the MRC. The MRC is located on the sixth floor of the library (Bldg 25).
- iv. **Faculty Advising:** Highline College instructors are a wonderful resource for students at any stage of the academic process. Many Highline instructors have career experience, are knowledgeable about campus resources, and can assist students in reaching their educational goals through degree planning. If you have an advising question, feel free to approach your instructor. If your instructor cannot answer your question, s/he will help you find someone who can.
- v. **Honors:** Highline College offers opportunities for students to participate in an Honors Program tailored to their pathways. Students who fulfill all Honors Program requirements may become eligible for a scholarship during their final quarter and receive recognition at Highline's commencement ceremony.
If you are interested in the Honors Program, I invite you to pursue an honors project in this class. Please approach me within the first three weeks of the quarter, and we will work together to develop a plan for completing an advanced academic or professional project. After completing the project and earning a 3.5 GPA in this course, an "honors" notation will appear on your official Highline transcript.
- vi. **Academic Dishonesty:** Cheating, plagiarism, and other forms of academic dishonesty are unacceptable at Highline 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.
- vii. **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.
- viii. **Emergency Procedures:** In the event of an emergency, follow your instructor's directions. If you are told to evacuate the building, take your valuables because you may not

be allowed to re-enter. Do not leave campus until your instructor or another campus official tells you to do so. If you may need assistance evacuating, notify your instructor today. To prepare yourself for an emergency, review the evacuation map on the last page of the emergency placard in your classroom and subscribe to HC Alert at <https://hctextalerts.highline.edu/>).

- ix. **Final Exams:** Your completed final exam will not be returned to you. It belongs to the instructor. However, you may (and should) review your final exam by stopping by the instructor's office the next quarter.
- x. **School Policies:**
 - i. The Student Rights and Responsibilities Code: A legal document that describes college expectations, students' rights, and outlines the process for resolving disciplinary matters and Code violations. <http://studentservices.highline.edu/srr.php>
 - ii. The College Catalog: Lots of fine print about grades, deadlines, and resources can be found in the catalog at: <http://catalog.highline.edu/>
- x. **Important Dates (dates should be verified online):**
 - i. January 11th: Last Day for 100% Tuition Refund
 - ii. January 28th: The last day to drop without incurring a "W"
 - iii. February 12th: Financial Aid Applications for Spring Quarter are due
See <https://financialaid.highline.edu/> for more information about Financial Aid
 - iv. February 12th: The beginning of registration for Spring Quarter
 - v. March 8th: The last day to officially withdraw with a "W"