Math 220 Syllabus for Introductory Linear Algebra Summer 2020
2 credit hours June 22-July 31

Meeting Information: M/Tu/W/Th 12:00-13:05 Place: Online/Zoom
Instructor: Paula Kimmerling
Email: paula.kimmerling@wsu.edu
Office: Math Learning Center, if applicable (restrictions lifted)
Office Hours: After class Tu/W 13:10-14:10 PST and by appointment, via Zoom

Linear algebra is an extremely versatile and useful subject. The applications range from
engineering and computer science to image analysis (including facial recognition) and even
quantum computing! It is in some ways an extension of “algebra” that you’ve learned before--
solve for x, systems of equations--but it extends to higher dimensions, there will be a new
vocabulary set and we’ll be doing some basic proof-writing. My best advice is to try not to get
bogged down in memorizing definitions (though you should work to understand them) or
allowing yourself to get too frustrated or intimidated by the new material. It is is a very cool yet
practical topic and I hope you have fun!

Prerequisites: MATH 171 or concurrent enrollment. Enrollment not allowed if credit already
earned for MATH 225 or 230.

Course Description and Objectives: Solving linear systems, matrices, determinants, subspaces,
eigenvalues, orthogonality. The goal is to provide students with an overview of linear algebraic
concepts and techniques, as well as to give students the opportunity to improve their
computational and theoretical skills.

Course Fees: $99.40 in total, includes access to the online textbook and homework through
MyLab Math.

Required Text: Linear Algebra and Its Applications, Fifth Edition by David Lay, (with online
homework). Instructions for accessing the book and online homework are in Blackboard.

Course topics: We will cover material from chapters 1 – 6: Linear equations, matrix algebra,
determinants, vector spaces, eigenvalues and eigenvectors, orthogonality.

Other Materials: You will need a laptop or phone which has a webcam and the capability to use
the Zoom application. Blackboard (https://learn.wsu.edu/) will host links to the course
materials, homework, lectures and exams. The computer projects will require you to use Matlab
or Octave. A browser version of Matlab is available at my.math.wsu.edu, or Octave is free to
download and use if you want something longer-term: https://www.gnu.org/software/octave/.

Attendance and In-Class Work: Lectures will be held synchronously each day on Zoom (links
will be in Blackboard) and some days we will do tasks where you will work in groups and
upload group work to discussion posts on Blackboard. Your participation in class polls, verbal or
chat responses, group work, and general attendance accounts for ~9% of the grade.
I will understand if you have the occasional technical issue or need accommodation. Case by
case exceptions can be made if it is not possible (or is simply unreasonable) for you to attend
class live—email me so we can coordinate.
Online Homework: Homework will be assigned online through the book publisher’s website. Instructions on how to register and access are provided separately in Blackboard. Most days there will be two homework assignments due: an automated one and a TA-graded one (which will be graded by me, not a TA). The TA-graded assignments are more theoretical in nature while the automated ones tend to be computational. There are also occasionally computer projects run through the same website. All three types are counted equally (2 points apiece). A course timeline is at the bottom of the document.

Exams: There will be two exams, respectively during weeks 3 and 6. The exams will be hosted on MyLab, like the homework, but you should upload your scratch work to Crowdmark so that if the computer marked you wrong but the mistake was small, I can give back most or partial credit.

- Midterm Exam: July 9th—Covers Chapter 1 and some of Chapter 2.
- Final Exam: July 30th—Covers material from chapters 1-6 with emphasis on newer material from chapters 2-6 (so yes, it’s cumulative).

Make-up Exams: In the event of an emergency, the midterm may be made up with an alternate exam. The final cannot be given early or made up.

Extra Credit: The occasional challenge problem may be posed, sometimes based on in-class activities. Those wishing for a deeper understanding of linear algebra or a stronger proof-writing experience may attempt these for extra credit, which will be worth up to 5% of the total grade (to be calculated at the end of the course).

Grading:

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<tbody>
<tr>
<td>46 Online Homework x 2pts</td>
<td>92 pts</td>
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<tr>
<td>Class Participation/ Attendance</td>
<td>28 pts</td>
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<tr>
<td>Midterm Exam</td>
<td>80 pts</td>
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<tr>
<td>Final Exam</td>
<td>100 pts</td>
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<td><strong>Total</strong></td>
<td><strong>300 pts</strong></td>
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Grading Scale: Round brackets indicate that grades up to that percentage are included (e.g. an 86.5% receives a B, but 87% receives a B+).

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<th>[0,60)</th>
<th>[60,67)</th>
<th>[67,70)</th>
<th>[70,73)</th>
<th>[73,77)</th>
<th>[77,80)</th>
<th>[80,83)</th>
<th>[83,87)</th>
<th>[87,90)</th>
<th>[90,93)</th>
<th>[93,100)</th>
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<tbody>
<tr>
<td>Grade</td>
<td>F</td>
<td>D</td>
<td>D+</td>
<td>C-</td>
<td>C</td>
<td>C+</td>
<td>B-</td>
<td>B</td>
<td>B+</td>
<td>A-</td>
<td>A</td>
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Incompletes: University policy (Academic Regulation 90) states that a grade of Incomplete may be awarded only if “the student is unable to complete their work on time due to circumstances beyond their control.”

Expectations for Student Effort: You should expect to spend about six hours per week on work outside of class. The expectation for class is that when you log on, you’re attending class –
taking notes, answering questions, engaging with course material, interacting with other students – as if it were an in-person course. While classes are recorded for you to reference later, the expectation is that you do still come to class.

**Academic integrity** is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU’s Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will receive a zero grade on the assignment or exam in question, will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct.

Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: [http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010](http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010). If you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding. If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at [http://conduct.wsu.edu](http://conduct.wsu.edu).

**WSU Reasonable Accommodations:** Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Access Center. All accommodations MUST be approved through the Access Center (Washington Bldg, Room 217). For more information, contact a Disability Specialist on your campus:

- Pullman or WSU Online: 509-335-3417, Washington Building 217, accesscenter.wsu.edu, Access.Center@wsu.edu
- Spokane: 509-358-7757, Academic Center 145F, spokane.wsu.edu/studentaffairs/access-resources, tera.lessard@wsu.edu
- Tri-Cities: 509-372-7352, Floyd 269C; tricities.wsu.edu/current-students/disability, gabriella.corona@wsu.edu
- Vancouver: 360-546-9238, Classroom Building 160, studentaffairs.vancouver.wsu.edu/access-center, van.access.center@wsu.edu

**WSU Safety Measures:** Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the `"Alert, Assess, Act" protocol for all types of emergencies and the "Run, Hide, Fight" response for an active shooter incident (link below). Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able). Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI’s "Run, Hide, Fight" video and visit the [WSU safety portal](http://wsu.edu).
Accommodation for Religious Observances or Activities: Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedures.

Getting Help: Why struggle? Successful students make use of available resources, so don't struggle when help is just a few steps away! We want you to succeed, we're here for you, and we have FREE tutoring available in the Math Learning Center (Cleveland 130) and the computing lab in Thompson Hall (Room 1). There will be a link to the virtual tutoring options posted on Blackboard. Additionally, see the website: http://www.math.wsu.edu/studyhalls/.

Safety and Emergency Notification: Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI’s Run, Hide, Fight video and visit the classroom safety page https://provost.wsu.edu/classroom-safety/.

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For severe weather alerts, see http://alert.wsu.edu/ and https://oem.wsu.edu/emergency-procedures/severe-weather/. In the event of severe weather affecting university operations, guidance will be issued through the alert system.

Discrimination: Discrimination, including discriminatory harassment, sexual harassment, and sexual misconduct (including stalking, intimate partner violence, and sexual violence) is prohibited at WSU (See WSU Policy Prohibiting Discrimination, Sexual Harassment, and Sexual Misconduct (Executive Policy 15) and WSU Standards of Conduct for Students). If you feel you have experienced or have witnessed discriminatory conduct, you can contact the WSU Office of Civil Rights Compliance & Investigation (CRCI) and/or the WSU Title IX Coordinator at 509-335-8288 to discuss resources, including confidential resources, and reporting options. (Visit crci.wsu.edu for more information).

Students in Crisis: If you or someone you know is in immediate danger, DIAL 911 FIRST! Other resources include:

- AWARE Network: aware.wsu.edu
- Cougar Transit: 978 267-7233
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- WSU Counseling and Psychological Services (CAPS): 509 335-2159
- Suicide Prevention Hotline: 800 273-8255
- Crisis Text Line: Text HOME to 741741
- WSU Police: 509 335-8548
- Pullman Police (Non-Emergency): 509 332-2521
- WSU Office of Civil Rights Compliance & Investigation: 509 335-8288
- Alternatives to Violence on the Palouse: 877 334-2887
- Pullman 24-Hour Crisis Line: 509 334-1133
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**Course Timeline:** (may change slightly if sections take more or less time; you’ll be notified via Blackboard.)

Class-time material in black, Homework due in red, Exams in green

Homework is generally due at 11:59pm. ***

<table>
<thead>
<tr>
<th>Week 1: June 22-26</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Class Info Section 1.1</td>
<td>Section 1.1, 1.2: Intro HW TA-Graded HW Intro</td>
<td>Section 1.2, 1.3: HW 1.1 TA-Graded HW 1.1</td>
<td>Section 1.3: HW 1.2 TA-Graded HW 1.2</td>
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<tr>
<td>Week 2: June 29-July 3</td>
<td>Section 1.4: HW 1.3 TA-Graded HW 1.3</td>
<td>Section 1.5: HW 1.4 TA-Graded HW 1.4</td>
<td>Section 1.7: HW 1.5 TA-Graded HW 1.5</td>
<td>Section 1.8: Maintenance; Cannot access HW after 10pm</td>
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<td>Week 3: July 6-10</td>
<td>Section 1.9: HW 1.7 TA-Graded HW 1.7 HW’s 1.8 TA-Graded HW 1.8</td>
<td>Section 2.1: HW 1.9 TA-Graded HW 1.9 Computer Project A</td>
<td>Section 2.2,2.3: HW 2.1 TA-Graded HW 2.1 Computer Project B</td>
<td>Review: Midterm Exam</td>
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<td>Week 4: July 13-17</td>
<td>Section 2.3: HW 2.2 TA-Graded HW 2.2</td>
<td>Section 2.8: HW 2.3 TA-Graded HW 2.3</td>
<td>Section 2.9: HW 2.8 TA-Graded HW 2.8</td>
<td>Section 3.1: HW 2.9 TA-Graded HW 2.9</td>
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<td>Week 5: July 20-24</td>
<td>Section 3.2: HW 3.1 TA-Graded HW 3.1</td>
<td>Section 5.1: HW 3.2 TA-Graded HW 3.2 Computer Project C</td>
<td>Section 5.2: HW 5.1 TA-Graded HW 5.1</td>
<td>Section 6.1: HW 5.2 TA-Graded HW 5.2 Computer Project D</td>
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*** There are also two review assignments which are optional to help you prepare for the final. They will close at 5pm the day of the final so that you don’t run out of time to complete the final itself (which is due that midnight).