

Math 250, Linear Algebra – Winter, 2019

Instructor: Joseph White (ST-212; 475-7720; jwhite2@olympic.edu)

Office Hours: Daily, 12:00 pm – 12:50 pm

Text: *Elementary Linear Algebra* (8th Ed.) by Ron Larson. (Note: A WebAssign “class key”, **olympic 7656 1551**, will give you access to the eBook as well as additional ancillaries.)

Prerequisite: MATH&163 with a grade of 2.0 or above.

Math 250 Student Learning Outcomes: When finished with this course, you should be able to:

- Demonstrate an understanding of vector spaces, subspaces, span, linear independence, basis, eigenspaces and eigenvectors.
- Implement basic algorithms for solutions of linear equations, determinants, inverses of matrices, determination of basis, eigensystems and diagonalization.
- Reframe the following types of problems into the language of linear algebra: Systems of linear equations into various matrix contexts, the geometry of linear transformations into corresponding eigenvalue and eigenvector problems, linear transformations into matrix operations.
- Identify a system of linear equations and classify the various types of solutions.
- Demonstrate an understanding of definitions and theorems in Linear Algebra by completing abstract proofs.
- Use technology to aid in understanding concepts of linear algebra and solving application problems, i.e. best fit approximations, systems of linear equations and differential equations, heat conduction, graph theory.

Assessment:

PRACTICE EXERCISE COMPLETION. A list of daily practice exercises selected from the text is attached. These exercises will NOT be collected or graded. Please keep in mind that if you do not keep up with the daily exercises on a regular basis, you should not expect to do well in this course.

PROJECTS. There will be two project assignments. Guidelines for these assignments will be given at a later date.

EXAMS. There will be two in-class exams during the quarter and a comprehensive final exam.

The exams will be returned within ONE WEEK after being submitted, and the first project will be returned within TWO WEEKS after its due date. Each will be assigned numerical grades. The scale for numerical grades will be:

95% or above = 4.0 85% = 3.0 75% = 2.0 65% = 1.0 62% = 0.7 Below 62% = 0.0

[Each one percent = 0.1 grade point.]

Your course grade will be the weighted average of the *numerical grades (on a 4.0 scale)* as follows:

50% Two In-class Exams
30% Final Exam
20% Projects (10% each)

Students who quit coming to class and do not officially withdraw through the registration office will receive an “F” (0.0) for the course. I do not assign “WP” or “WF” grades. The last day to drop and receive a “W” is Thursday, February 14th.

Math 250 Practice Exercise Assignments (Larson, 8th ed.)

(Note: “eoo” means every other odd.)

Section	Practice Exercises
1.1	1 – 53 eoo, 63, 67, 77 – 85 odd
1.2	1 – 37 odd, 43 – 51 odd, 55, 59, 63, 65
1.3	1 – 9 odd, 17 – 25 odd, 31, 35, 39
2.1	1 – 85 eoo
2.2	1, 5 – 13 odd, 23 – 75 eoo, 77
2.3	1 – 45 eoo, 53 – 59 odd, 63 – 79 eoo
2.4	1 – 33 eoo, 35, 41, 43, 45, 49, 51, 53, 57, 59
2.5	1 – 53 eoo
2.6	1 – 27 odd
3.1	1 – 25 odd, 39 – 51 odd, 55 – 67 odd
3.2	1 – 47 odd
3.3	1 – 49 eoo, 57 – 83 odd
3.4	1 – 13 odd, 37 – 59 odd
End of material for TEST 1	
4.1	1 – 29 eoo, 35 – 51 odd, 55
4.2	1 – 45 odd
4.3	1 – 47 odd, 51 – 57 odd
4.4	1 – 57 odd, 61, 63, 67, 69
4.5	1 – 85 eoo
4.6	5 – 45 odd, 49, 51, 57, 61, 67, 69
4.7	1 – 23 odd, 37, 39, 45, 47, 49, 51, 55, 57
4.8	1 – 29 odd, 43 – 75 eoo
5.1	1 – 69 eoo, 77 – 85 odd
5.2	1 – 85 eoo
5.3	1 – 65 eoo, 67
5.4	1 – 45 odd
5.5	67 – 87 odd
End of material for TEST 2	
6.1	1 – 65 eoo, 67, 71, 73, 75, 81
6.2	1 – 29 odd, 33 – 63 odd
6.3	1 – 55 odd
6.4	1 – 37 odd
6.5	1 – 71 odd
7.1	1 – 27 odd, 41, 43, 49, 53, 57, 59, 69, 71, 79
7.2	1 – 19 odd, 23 – 39 odd, 45, 49
7.4	11 – 31 odd

Math 250 Proposed Schedule: Winter, 2019

Week of the quarter	Material to be covered
Week 1: 1/2 – 1/4	Sections 1.1 and 1.2
Week 2: 1/7 – 1/11	Sections 1.3, 2.1 – 2.3
Week 3: 1/14 – 1/18	Sections 2.4 – 2.6, 3.1
Week 4: 1/22 – 1/25 Also: Class does not meet on Monday, 1/21	Sections 3.2 – 3.4
Week 5: 1/28 – 2/1 Also: EXAM 1, Monday	Sections 4.1 – 4.3
Week 6: 2/4 – 2/8	Sections 4.4 – 4.8
Week 7: 2/11 – 2/15	Sections 5.1 – 5.3
Week 8: 2/19 – 2/22 Also: Class does not meet on Monday, 2/18	Sections 5.4 – 5.6
Week 9: 2/25 – 3/1 Also: EXAM 2, Monday	Sections 6.1 – 6.3
Week 10: 3/4 – 3/8	Sections 6.4, 7.1, 7.2, 7.4
Week 11: 3/11 and 3/15	Review on Monday, 3/11; Final Exam on Friday, 3/15, 10:00 am – 12:00 pm

Note: *This is a proposed schedule only.* I will make every attempt to stay as close to this schedule as possible, but changes may occur. Each student is responsible for all material presented and announcements made in class.

Disability Accommodation: If you need accommodations because of disability, contact the Office of Access Services (HSS 205, (360) 475-7540). Then touch base with me briefly. (The office will also have sent me notification.)

Mathematics Study Center: The Math Study Center (ST 124 and 126) is open to all students at no charge. To help you be successful, we encourage you to use the study center as a place to study, get spot help as you need it, and possibly form study groups with other students. Hours will be posted by the second week of classes.

Olympic College seeks to maintain a learning and working environment that is safe, welcoming, and respectful of the dignity of all members of the campus community. Accordingly, the College prohibits discrimination on the bases of race, color, religion, national origin, age, disability, sex, sexual orientation, gender identity, pregnancy, veteran status and all other protected classifications. If you witness or encounter any such discrimination, including sexual harassment, sexual assault, or other sexual misconduct, you are encouraged to **report it** to the Title IX Officer, Cheryl Nuñez, Vice President for Equity and Inclusion at cnunez@olympic.edu/360-475-7125 or the Equal Employment Opportunity Officer, David Slown, Executive Director for Human Resource Services at dslow@olympic.edu/306-475-7300, who will assist you in connecting with all possible resources. You may also report it online (and anonymously, if you wish) at *Report It, OC!* at <https://publicdocs.maxient.com/incidentreport.php?OlympicCollege> or **seek confidential counseling** from the Counseling Faculty at 360-475-7530. For more information about your options go to <http://www.olympic.edu/about-olympic-college/nondiscriminationaccessibility>.

Policies

a. **IF YOU MUST MISS A TEST, YOU WILL NEED TO MAKE PRIOR ARRANGEMENTS, OR CALL 475-7720 TO LEAVE A MESSAGE IN CASE OF UNEXPECTED ILLNESS OR EMERGENCY.** If you do not call, or if the earliest reasonable opportunity to make-up the test has passed, you will not be allowed to make it up. (Note: If you leave a message, then call back during my next listed office hour. After that, you will be too late to make arrangements for a make-up. In all cases, the next class meeting is too late. If you have “car troubles,” you will be expected to make up the test later THE SAME DAY.)

b. Classroom conduct is governed by the Olympic College **STUDENT CONDUCT CODE** (by contract upon enrollment). Its substance is mostly common courtesy and common sense. **Note:** Many students express that others whispering interferes with their concentration for math. It can be a distraction for the instructor, as well. For these reasons, sensitivity to this matter is required and enforced in the class. (Understand that discussing the class material does not constitute an exception!)

c. You are expected to **CONTRIBUTE TO A FOCUSED ACADEMIC ATMOSPHERE.**

- Class time is not for “socializing” at any time.
- Cell phone use for the purposes of texting, email, or other social media is not permitted (this applies for all electronic devices).
- Consultation with the instructor is not appropriate at the start of class.
- If you have asked a question or two – stop and give others a chance! (You will sometimes need to save other comments and questions until after some study time.)
- If entering class late or leaving early, do so quietly.
- **Any** distracting behavior (or noise, etc.) becomes inappropriate in the classroom.

d. **CONCERNING ATTENDANCE.** I advise attending all class sessions, in the strongest terms; however, you do not need to notify me if you miss class occasionally, other than tests. **When you miss class, you are responsible to study the material, use other resources such as the Study Center, and keep up.** By far the most common reasons for some students having trouble in math are poor attendance or falling behind.

e. Students are RESPONSIBLE for material covered in class whether or not it is in the text.

f. Students are RESPONSIBLE for material covered in the text whether or not it is discussed in class.

g. Graded take-home assignments (for example, a project) are due at the **beginning of class** or at the designated time. Any late assignments will be penalized 10% per day. No assignments will be accepted after graded assignments are handed back.

Classroom format and class time usage:

- We will begin most days with **QUESTIONS AND ANSWERS.** You need to **COME TO CLASS PREPARED WITH SPECIFIC QUESTIONS ON PRACTICE PROBLEMS.** The questions will be taken at one time and discussed typically over 10 or 15 minutes (if the lecture material gets pretty long, I will interrupt it to make a priority of the question-and-answer portion of class.)
- Most days, we will continue then with “**TRADITIONAL CLASSROOM FORMAT,**” mostly lecture and presentation by the instructor, on the new material scheduled to be covered that day. During this time, **QUESTIONS DIRECTLY RELATED TO THE MATERIAL AT HAND ARE WELCOME**, but *only* those directly related. Everyone must be careful to keep the format *focused and structured* to make good use of class time. (I may occasionally -- or will, as necessary -- ask you to save other comments and questions until after some study time!).