**Math 225**

**Linear Algebra with Modern Applications**

**Course Details**

**Instructor:** Dr. Sergey Lapin

**Location:** Everett 358

**Date/Time:** Wed. 5:30-8:20 pm

**E-mail:** [slapin@wsu.edu](mailto:JMcDonald1@wsu.edu)

**Phone:** 425-405-1780

**Office Hours: TBA**

**Required Resources:**

Lay, Lay, and McDonald, *Linear Algebra and its Applications*, 6*th Edition*, with online homework through *MyLab* has been set up with "first day" access.  You pay for it with your tuition.  Just go to the course materials tab and launch the course.  The first time you enter *MyLab* you may have to accept some terms and conditions.

[Mathematica player (Links to an external site.)](http://support.wolfram.com/kb/topic/wolfram-player/download-installation) (free)

[Matlab (Links to an external site.)](https://www.mathworks.com/academia/tah-portal/washington-state-university-40714885.html) (free to WSU students and faculty)

**Prerequisite:** MATH 106 with a C or better

**Course Overview**

Introductory Linear Algebra will provide you with an overview of linear algebraic concepts and techniques, as well as exposure to the linear algebra behind modern applications such as machine learning, artificial intelligence, and economic models.  You will improve your computational, theoretical, and applied skills.

**Student Learning Outcomes (SLOs)**

1. Demonstrate increased understanding and knowledge in core areas of linear algebra, assessed through homework exercises, exams, and use in applications.
2. Develop the ability to play and experiment with linear algebra, assessed by use in homework exercises.
3. Show understanding of where linear algebra is used in modern applications, assessed through exercises and a project.

**Course Work**

The course is set up through WSU *Canvas* and Pearson’s *MyLab*, where you can find videos, lecture notes, and your homework.

**Effort Expected:**  Students should expect to spend up to nine hours per week working on material for the course.

**Topics covered (with a computational and a written homework per section) :** We will cover:

Chapter 1: Sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9

Chapter 2: Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7

Chapter 3: Sections 3.1, 3.2, 3.3

Chapter 4:  Sections 4.1, 4.2, 4.3, 4.5 and 4.7

Chapter 5: Sections 5.1, 5.2, 5.3, 5.5, 5.9

Chapter 6: Sections 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, & 6.8

**Homework:** Homework will be assigned through *MyLab*, the online Pearson learning system that should be purchased and includes the electronic textbook. Homework will be assigned through *MyLab* for each section and will be due one week after it is assigned. Computational homework is assessed immediately, and you have the opportunity to continue to work on a task until you get it correct. Conceptual homework is graded by the professor and should be assessed within one week from when it is assigned.  Many students find the computational questions challenging.  Please reach out to your professor for help when ever you need it.

**Grading**

| Assignment Breakdown | |
| --- | --- |
| **Assignment** | **Percent of Overall Grade** |
| Homework and Computer  Projects | 35% |
| Applications Project | 5% |
| Midterm | 30% |
| Final Exam | 30% |

| Grading Schema | |
| --- | --- |
| **Grade** | **Percent** |
| 100  ≥  A  ≥ 93 | 77 > C  ≥ 73 |
| 93  > A-  ≥ 90 | 73 > C-  ≥ 70 |
| 90  >  B+  ≥ 87 | 70 > D+  ≥ 65 |
| 87  >  B  ≥ 83 | 65 > D  ≥ 60 |
| 83  >  B-  ≥ 80 | 60 >  F |
| 80  >  C+  ≥ 77 |  |

**Instructor Interaction**

Please email me at slapin@wsu.edu to schedule an appointment.

**Late Work Policy**

Late homework will be assessed a late penalty of 25%, and must be completed by the end of the course.  There will be a computer project for each chapter,  for a total of six computer projects.  Late computer projects will also be assigned a penalty of 25%.  Late applications projects cannot be accepted.

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