MAT 343: Linear Algebra

Fall 2026

Topic and Homework Schedule

The problems listed are the required sets; each lesson guide also lists optional extra-practice problems. Everything in the last two columns is due by **11:59 PM** on the date listed.

MTW #n is Math The World video assignment number n — watch the assigned video from the *Video Guide* and post the short written response in Canvas. There are 14 of them and **your three lowest scores are dropped**. A few assignments pair two short companion videos; those are marked.

Celebrations of Knowledge (shaded below) are taken in the Testing Center during the three-day block following each review day, **Tuesday–Thursday, 4:00 – 10:00 PM**.

Wk	Date	Sections Covered	Homework Due	Also Due
1	Aug 26	Intro and Python (Jupyter Notebooks in Colab)		
	Aug 28	1.1 - Linear Equations		**MTW #1**
2	Aug 31	1.2 - Row Reduction		
	Sep 2	1.3 - Vector Equations	**1.1:** 3, 7, 17	
	Sep 4	1.4 - The Matrix Equation $A\mathbf{x} = \mathbf{b}$	**1.2:** 3, 9, 21	**MTW #2**
3	Sep 7	*No School — Labor Day*		
	Sep 9	1.5, 1.6 - Solution Sets	**1.3:** 1, 9, 11	
	Sep 11	1.7 - Linear Independence	**1.4:** 1, 11, 25	**MTW #3**
4	Sep 14	1.8, 1.9 - Linear Transformations	**1.5:** 2, 9, 11; **1.6:** 2, 5	
	Sep 16	2.1, 2.2 - Matrix Operations	**1.7:** 3, 15, 17	
	Sep 18	2.2, 2.3 - Matrix Inverse	**1.8:** 1, 8, 13; **1.9:** 3, 17	**MTW #4**
5	Sep 21	2.4, 2.5 - Factorization	**2.1:** 1, 7, 15; **2.2:** 1, 5	
	Sep 23	2.6, 2.7 - Applications	**2.2:** 31; **2.3:** 1, 4, 33	
	Sep 25	2.8, 2.9 - Subspaces of $\mathbb{R}^n$	**2.4:** 1, 7; **2.5:** 1, 7	**MTW #5**
6	Sep 28	Review for Celebration 1 (Chs 1 & 2)	**2.6:** 1, 5; **2.7:** 2, 21	
	Sep 29 – Oct 1	**Celebration of Knowledge 1 (Chs 1 & 2) — Testing Center**		
	Sep 30	3.1 - Determinants	**2.8:** 1, 7, 17; **2.9:** 9, 15	
	Oct 2	3.2 - Properties		**MTW #6** (2 videos)
7	Oct 5	3.3 - More on Determinants	**3.1:** 1, 11, 19	
	Oct 7	4.1 - Vector Spaces	**3.2:** 3, 15, 39	
	Oct 9	4.2 - Transformations between Vector Spaces	**3.3:** 3, 7, 19	**Project 1** **MTW #7**
8	Oct 12	4.3 - Independence and Bases	**4.1:** 1, 7, 15	
	Oct 14	4.4 - Coordinate Systems (Curricular Monday)	**4.2:** 3, 15, 31	
	Oct 16	4.5, 4.6 - Dimension (Block 1 Exam Day)	**4.3:** 1, 7, 11, 13, 16, 34	**MTW #8**
9	Oct 19	4.7 - Change of Basis	**4.4:** 1, 8, 9, 12, 14, 27	
	Oct 21	4.9 - Markov Chains	**4.5:** 1, 11, 25, 26; **4.6:** 1, 5, 7	
	Oct 23	Review for Celebration 2 (Chs 3 & 4)	**4.7:** 1, 6, 7, 9, 14	**MTW #9**

Wk	Date	Sections Covered	Homework Due	Also Due
10	Oct 26	*No School — Fall Break*		
	Oct 27 – 29	**Celebration of Knowledge 2 (Chs 3 & 4) — Testing Center**		
	Oct 28	5.1 - Eigenvalues and -vectors	**4.9:** 1, 2, 5, 7, 10, 11	
	Oct 30	5.2 - The Characteristic Equation		**MTW #10** (2 videos)
11	Nov 2	5.3 - Diagonalization	**5.1:** 3, 8, 9, 18, 20, 23	
	Nov 4	5.4 - Geometry of Eigenvectors	**5.2:** 2, 10, 14, 16, 20, 24	
	Nov 6	5.5 - Complex Eigenvalues	**5.3:** 1, 4, 8, 12, 24, 27	**Project 2** **MTW #11**
12	Nov 9	6.1 - Dot and Cross Products	**5.4:** 1, 11, 15, 20, 22, 23	
	Nov 11	6.2, 6.3 - Orthogonality	**5.5:** 1, 5, 9, 13, 17, 21	
	Nov 13	6.4 - Gram-Schmidt	**6.1:** 2, 10, 14, 16, 24, 30	**MTW #12** (2 videos)
13	Nov 16	6.5, 6.6 - Least-Squares	**6.2:** 2, 8, 16, 20; **6.3:** 4, 8, 12	
	Nov 18	6.7 - Inner Product Spaces	**6.4:** 2, 6, 8, 10, 12	
	Nov 20	7.1 - Symmetric Matrices	**6.5:** 2, 4, 6, 8, 12; **6.6:** 1, 7	**MTW #13** (2 videos)
14	Nov 23	7.2, 7.3 - Quadratic Forms and Optimization	**6.7:** 1, 5, 15	**Project 3** (due Tue 11/24)
	Nov 25 – 27	*No School — Thanksgiving Break*		
15	Nov 30	Review for Celebration 3 (Chs 5 & 6)	**7.1:** 1, 14, 18, 20, 28, 29	
	Dec 1 – 3	**Celebration of Knowledge 3 (Chs 5 & 6) — Testing Center**		
	Dec 2	7.4 - SVD	**7.2:** 2, 8, 10, 20; **7.3:** 2, 8	
	Dec 4	7.5 - PCA		**MTW #14**
16	Dec 7	PCA Examples	**7.4:** 2, 6, 8, 10, 18, 19	
	Dec 8	Review (Curricular Wednesday)	**7.5:** 2, 8	
	Dec 9	Reading Day (No Class)		**Late-work cut-off**
17	Dec 10 – 15	**Final Exam — comprehensive, incl. Ch 7 (day/time per university exam schedule)**		

AI was used in the development and editing of this document.