MA 26200 - Assignment Sheet - Fall 2018

TEXT: *Differential Equations and Linear Algebra Purdue University Custom Edition MA 262 published by Pearson*

There are two options for purchasing the textbook. The first option includes the textbook (in print) and an access code to the online homework MyMathLab. The second option includes the textbook as an e-book (online view only) and an access code to the online homework MyMathLab.

- Option 1.) Custom Book (in print form) containing a homework access code. ISBN 9780321989925: "Linear Algebra and Its Applications, Books a la Carte Edition Plus MyLab Math with Pearson eText – Access Code Card, 5/e"
- Option 2.) E-book (viewable online only) only and homework access code. ISBN 9780135310403: "MyLab Math New Design with eText for Linear Algebra and Differential Equations for Purdue University – Standalone Access Card, 1/e"

The material of this course is organized into 37 lessons which are taught at an approximate rate of one lesson per lecture. For each lesson, online homework is done in MyMathLab on Blackboard. There are also hand-graded problems for each lesson which are listed in MyMathLab but are to be done on paper and turned in during your recitation class. The due dates for the online and hand-graded homework for each lesson will be set by your lecturer and then can be viewed in MyMathLab on Blackboard. The e-book can also be viewed in MyMathLab on Blackboard.

Lesson	Sections	Content of the Lesson
1	**1.1, 1.2 and 1.3,** p.1,6,15	Background; Solutions and initial value problems; Direction fields
2	**2.1 and 2.2,** p.42,45	Motion of a falling body; Separable equations
3	**2.3,** p.52	Linear equations
4	**2.4,** p.61	Exact equations
5	**2.5,** p.70	Special integrating factors
6	**2.6,** p.74	Substitutions and transformations
7	**3.4 and 3.5,** p.117,126	Newtonian mechanics; Electrical circuits (special cases)
8	**7.1 and 7.2,** p.360,370	Systems of linear equations; Row reduction and echelon forms
9	**7.3 and 7.4,** p.382,393	Vector equations; The matrix equation Ax=b
10	**7.5 and 7.7,** p.401,414	Solution sets of linear systems; Linear independence
11	**7.8 and 7.9,** p.421,429	Introduction to linear transformations; The matrix of a linear transformation
12	**8.1,** p.458	Matrix operations
13	**8.2,** p.468	The inverse of a matrix
14	**9.1 and 9.2,** p.536,541	Introduction to determinants; Properties of determinants
15	**9.3,** p.549	Cramer's rule, volume and linear transformations
16	**10.1,** p.564	Vector spaces and subspaces
17	**10.2,** p.572	Null spaces, column spaces and linear transformations
18	**10.3,** p.582	Linearly independent sets, bases
19	**10.5,** p.599	The dimension of a vector space
20	**10.6,** p.604	Rank
21	**11.1,** p.648	Eigenvalues and eigenvectors
22	**11.2,** p.656	The characteristic equation
23	**11.5,** p.677	Complex eigenvalues (omit theorem 9)
24	**4.1 and 4.2,** p.164,169	The mass-spring oscillator; Homogeneous linear equations: the general solution
25	**4.3,** p.177	Auxiliary equations with complex roots
26	**4.4,** p.186	Nonhomogeneous equations: the method of undetermined coefficients
27	**4.5,** p.192	The superposition principle and underdetermined coefficients revisited
28	**4.6,** p.199	Variation of parameters
29	**4.7,** p.204	Variable-coefficient equations
30	**4.9 and 4.10,** p.224,233	A closer look at free mechanical vibrations; Forced mechanical vibrations
31	**5.1,** p.257	Basic theory of higher-order linear differential equations
32	**5.2,** p.265	Homogeneous linear differential equations with constant coefficients
33	**5.3 and 5.4,** p.272,276	Undetermined coeff. and annihilator method; Method of variation of parameters
34	**6.1 and 6.4,** p.290,309	Matrix methods for linear systems of odes; Linear systems in normal form
35	**6.5,** p.317	Homogeneous linear systems with constant coefficients
36	**6.6,** p.328	Complex eigenvalues
37	**6.7,** p.332	Nonhomogeneous linear systems (undetermined coefficients + variation of parameters)