MA 26200 - Assignment Sheet - Spring 2019

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 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. Differential Equations and Linear Algebra Purdue University Custom Edition MA 262. Plus MyLab Math with Pearson eText – Access Code Card, 5/e" ISBN 9781323909683
- 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 36 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 Blackboard 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	**2.6,** p.74	Substitutions and transformations
6	**3.4,** p.117	Newtonian mechanics
7	**7.1 and 7.2,** p.360,370	Systems of linear equations; Row reduction and echelon forms
8	**7.3 and 7.4,** p.382,393	Vector equations; The matrix equation Ax=b
9	**7.5 and 7.7,** p.401,414	Solution sets of linear systems; Linear independence
10	**7.8 and 7.9,** p.421,429	Introduction to linear transformations; The matrix of a linear transformation
11	**8.1,** p.458	Matrix operations
12	**8.2,** p.468	The inverse of a matrix
13	**9.1 and 9.2,** p.536,541	Introduction to determinants; Properties of determinants
14	**9.3,** p.549	Cramer's rule, volume and linear transformations
15	**10.1,** p.564	Vector spaces and subspaces
16	**10.2,** p.572	Null spaces, column spaces and linear transformations
17	**10.3,** p.582	Linearly independent sets, bases
18	**10.5,** p.599	The dimension of a vector space
29	**10.6,** p.604	Rank
20	**11.1,** p.648	Eigenvalues and eigenvectors
21	**11.2,** p.656	The characteristic equation
22	**11.5,** p.677	Complex eigenvalues (omit theorem 9)
23	**4.1 and 4.2,** p.164,169	The mass-spring oscillator; Homogeneous linear equations: the general solution
24	**4.3,** p.177	Auxiliary equations with complex roots
25	**4.4,** p.186	Nonhomogeneous equations: the method of undetermined coefficients
26	**4.5,** p.192	The superposition principle and underdetermined coefficients revisited
27	**4.6,** p.199	Variation of parameters
28	**4.7,** p.204	Variable-coefficient equations
20	**4.9,** p.224	A closer look at free mechanical vibrations
30	**5.1,** p.257	Basic theory of higher-order linear differential equations
31	**5.2,** p.265	Homogeneous linear differential equations with constant coefficients
32	**5.3 and 5.4,** p.272,276	Undetermined coeff. and annihilator method; Method of variation of parameters
33	**6.1 and 6.4,** p.290,309	Matrix methods for linear systems of odes; Linear systems in normal form
34	**6.5,** p.317	Homogeneous linear systems with constant coefficients
35	**6.6,** p.328	Complex eigenvalues
36	**6.7,** p.332	Nonhomogeneous linear systems (undetermined coefficients + variation of parameters)