M238 DAILY SCHEDULE—Summer 2008

Day 1: M May 12

2.1 Vector Spaces

HW: Sec. 2.1, # 1, 2, 3a, 4c, 5, 7, 8, 12

2.1 Vector Spaces

HW: Sec. 2.1, Be sure you can identify every reason for every equality for every part of Example 5 and for Theorem 2.2, parts 1. and 3.

2.2 Subspaces

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Day 2: Tu May 13

2.2 Subspaces

HW: Sec. 2.2, # 1, 2, 3, 6, 7

1.2 Matrices and Matrix Operations

HW: Sec. 1.2, # 3, 7, 8, 13, 17-19, 21, 23, 25a, 31, 32 (**#32: Read only!** Don't have to prove☺)

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Day 3: W May 14 ***Quiz on 2.1, 2.2 (i.e., HW Quiz on 2.1 and 2.2 Days 1 and 2 HW assignments) tomorrow!***

1.1 Systems of Linear Equations

HW: Sec. 1.1, # 3, 11, 13, 15, 17, 23, 25, 26

2.2 Linear Combinations and Spanning Sets

HW: Sec. 2.2, # 5, 9, 12, 13, 15, 16, 19, 25 (For help on #5, **Read Theorem 2.4 and Proof!**)

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Day 4: Th May 15

Class: 9:00AM-11:30AM

1.3 Inverses of Matrices

HW: Sec. 1.3, # 1, 3, 5, 9, 15, 18, 20

1.4 Special Matrices; Additional Matrix Properties

HW: Sec. 1.4, # 1-4 (replace #3 with A^4; what can you say about $(A^4)^{-1}$ and #4?), 6, 11, 12, 15-20

1.5 Determinants

HW: Sec. 1.5, # 1-9 odd, 16, Sec. 2.2 # 4

Quiz 1 (2.1,2.2). (11:30AM-12:15PM)

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Day 5: M May 19

1.6 Properties of Determinants

HW: Sec. 1.6, # 1, 3, 9, 11, 15, 16

2.3 Linear Independence and Bases

HW: Sec. 2.3, # 1, 3, 9, 11, 13, 15, 17, 23, 25, 27, 34

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Day 6: Tu May 20 ***Test on material from 1.1—1.6 and 2.1—2.3, and 2.4(Dimension only) tomorrow!***
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2.4 Dimension; Nullspace, Row Space, Column Space

HW1: Sec. 2.4, # 1, 2c,d, 3a,b,d, 4b,d, 16; AND Sec. 2.3,*Use our new dimension results for* #3, 7, 10,19—22.
HW2: Sec. 2.4, # 5, 7, 13, 15, 17, 19

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Day 7: W May 21

Test 1 (Ch.1, 2.1—2.3, 2.4 Dimension only). (8:45AM -10:30AM)

Break 10:30-10:45

Class: 10:45-12:15

2.5 Wronskians

HW1: Sec. 2.5, # 1—5, 10, and 12 (*Hint: Write one of the functions as a linear combination of the others!)*

HW2: Sec. 4.2 #38.

4.1 Theory of Higher Order Differential Equations

HW: Sec. 4.1, # 1—4, 5, 7, 9, 13, 20, 21, 23

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Day 8: Th May 22

4.1 Linear Operators and Vector space ideas of the theory of 2nd Order Linear Differential Equations

4.2 Homogeneous Constant Coefficient 2nd Order Differential Equations and Euler Equations

HW: Sec. 4.2, # 3, 5, 7, 10—12, 17, 19, 21a, 27, 29, 37, 43, 45, 47

4.3 Method of Undetermined Coefficients

HW: Sec. 4.3, # 1, 7, 9, 15, 23, 25

MORE MEMORIAL DAY WEEKEND HW: READ SECTION 4.4 AND DO THE PROBLEMS BELOW:

4.4 Method of Variation of Parameters

HW: Sec. 4.4, # 1, 5, 6, 15

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Day 9: M May 26: NO Class---Memorial Day

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Day 10: Tu May 27 ***Test on material from 2.4, 2.5, 4.1—4.5 tomorrow!***

4.2—4.4 Homework Questions: ***Be ready with questions you have on assigned HW problems.***

4.5 Applications of 2nd Order Differential Equations: Spring-Mass Systems/Flow of Electric Current.

HW: Sec. 4.5, # 15 (a), (b), 16, 19

graph paper may be useful!

3.1 Intro. To First Order Differential Equations

HW: Sec. 3.1, # 1-4 (for #1-4, **also** is the DE ***linear or nonlinear?***), 9, 14, 15 (do sketches by hand).

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Day 11: W May 28

Test 2 (2.4, 2.5, Ch. 4). (8:45AM-10:30AM)

Break 10:30-10:45AM

Class: 10:45AM -12:15PM

3.2 Separable Differential Equations

HW: Sec. 3.2, # 1, 3, 5, 7, 12, 15, 21b,c

3.4 Linear Differential Equations

HW: Sec. 3.4, # 9, 12, 13, 15

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Day 12: Th May 29

3.3 Exact Differential Equations

HW: Sec. 3.3, # 1, 5, 7, 13, 17

3.6 Modeling with Differential Equations

HW: Sec. 3.6, # 7, 11, 13, 22 (be sure to read 21 first), 23, 24(a) and for 24(b), set up and classify the resulting differential equation for *r(t)*, but don't try to solve! *Why?!?!?!*)

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Day 13: M June 2 ***Quizzes (yes, that's plural!) on Ch. 3 tomorrow.***

5.1 Linear Transformations

HW: Sec. 5.1, # 1, 3, 5, 9—12, 14 (a), 15, 16, 18, 19, 21, 23, 26, 27, 32

5.2 Algebra of Linear Transformations: Diff. Operators and Diff. Equations

HW: Sec. 5.2, # 5, 6, 7-9, 11—14, 20

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Day 14: Tu June 3

Quizzes 2&3 (Ch. 3). (8:45AM-10:15AM)

Break 10:15-10:30AM

Class: 10:30AM -12:15PM

5.4 Eigenvalues and Eigenvectors of Matrices

HW: Sec. 5.4, # 3, 7, 9, 11, 13, 17, 20—26

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Day 15: W June 4

5.4 Eigenvalues and Eigenvectors of Matrices—finish theoretical results from exercises 5.4 #20—26.

5.5 Similar Matrices, Diagonalization

HW: Sec. 5.5, # 3, 7, 9, 11, 13, 17, 32, 34. READ #36, 38

6.1 Theory of Systems of Differential Equations

HW: Sec. 6.1, # 1, 4, 5, 7, 9, 11. For #13, **only** write down what the individual equations are **and** classify them so that if you were to solve them, you would know what method you would use! READ #17, 22c.

6.5 Converting Differential Equations to First Order Systems

HW: Sec. 6.5, # 1, 5, 13 (**convert to first order system only—do NOT solve**).

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Day 16: Th June 5

6.2 Homogeneous Systems, Constant Coefficients: Diagonalizable Case

HW: Sec. 6.2, # 5, 7,15, 23, 30 (**NOTICE: I deleted #11 and #27!!!!)**

6.5 Converting Differential Equations to First Order Systems

HW: Sec. 6.5, # 1, 5 **(now solve the systems!)**

HW: READ Sec. 6.6 for fun.

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CUMULATIVE FINAL EXAM—Friday, June 6 in Burruss 0030.
Questions/Review: 9:00AM-9:45AM
Final Exam: 9:45AM-12:15PM

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