# MATH 2243
# Differential Equations and Linear Algebra

Fall 2015   —   Lecture 020

**Week I**

Lecture:            We 9/9, Fr 9/11 covering sections 1.1, 1.2, 1.3
Suggested exercises:   1.1: (p. 8) 3, (p. 9) 15, 17, 19
                    1.2: (p. 17) 3, 11, (p. 18) 25, 27
                    1.3: (p. 27) 1, (p. 28) 21, (p. 29) 28

Homework:           p. 9, ex. 17; p. 17, ex. 3; p. 29, ex. 28 (due on Tuesday 9/15)

**Week II**

Lecture:            Mo 9/14, We 9/16, Fr 9/18
Sections:           (1.3), 1.4, 1.5, 2.1
Suggested exercises:   1.4: (p. 43) 1, 6, 23, 26, 27, (p. 44) 33, 49
                    1.5: (p. 56) 1, 5, 7, 15, 25, 33, (p. 57) 37
                    2.1: (p. 87) 2, 4, (p. 88) 10, 15, 16, 21

Homework:           p. 43, ex. 6; p. 56, ex. 15; p. 57, ex. 37 (derive the DE, solve with an
                    integrating factor) (due on Tuesday 9/22)

**Week III**

Lecture:            Mo 9/21, We 9/23, Fr 9/25
Sections:           (2.1), 2.2, 2.3, 2.4, 3.1
Suggested exercises:   2.2: (p. 98) 1, 6, 11, 21
                    2.3: (p. 108) 1, 7, 10, 11, (p. 109) 25, 26
                    2.4: (p. 121) 1, 4
                    3.1: (p. 155) 1, 2, 9, 10, 23, 25, 31, (p. 156) 33
Homework:           p. 98, ex. 21; p. 108, ex. 10; p. 121, ex. 1; p. 155, ex. 9 (due on Tuesday 9/29)

**Week IV**

Lecture:            Mo 9/28, We 9/30, Fr 10/02
Sections:           (3.1), 3.2, 3.3, (3.4)
Suggested exercises:   [3.1: (p. 155) 1, 2, 9, 10, 23, 25, 31, (p. 156) 33]
                    3.2: (p. 165) 1, 3, 11, 14, (p. 166) 20, 23
                    3.3: (p. 174) 1, 7, 12, 20, 34

Homework:           p. 166, ex. 20; p. 174, ex. 12 (due on Tuesday 10/06)

**Week V**

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|---|---|
| Lecture: | Mo 11/05, We 10/07, Fr 10/09 |
| Sections: | 3.4, 3.5 |
| Suggested exercises: | 3.4: (p. 186) 1, 4, 5, 8, 11, 13, 17, 31 |
| | 3.5: (p. 199) 2, 4, 5, 12, 16, 23, 32, 36 |
| Homework: | p. 186, ex. 8; p. 199, ex. 12, ex. 32 (due on Tuesday 10/13) |

Midterm I on Thursday 10/08 covering sections 1.1 – 1.5, 2.1 – 2.4, 3.1 – 3.3.

**Week VI**

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|---|---|
| Lecture: | Mo 10/12, We 10/14, Fr 10/16 |
| Sections: | 3.6, 4.1, 4.2 |
| Suggested exercises: | 3.6: (p. 216) 7, 8, 14, 33 |
| | 4.1: (p. 237) 1, 11, 12, 20 |
| | 4.2: (p. 252) 2, 10, 16, 20 |
| Homework: | p. 216, ex. 2, ex. 8; p. 237, ex. 12; p. 245, ex. 20 (due on Tuesday 10/20) |

**Week VII**

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|---|---|
| Lecture: | Mo 10/19, We 10/21, Fr 10/23 |
| Sections: | 4.3, 4.4, 4.5 |
| Suggested exercises: | 4.3: (p. 252) 5, 10, 11, 19 |
| | 4.4: (p. 259) 2, 5, (p. 260) 8, 10, 13, 20 |
| | 4.5: (p. 268) 2, 6, 13, (p. 269) 17 |
| Homework: | p. 252, ex. 10; p 260, ex. 10; p. 168, ex. 6 (due on Tuesday 10/27) |

**Week VIII**

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|---|---|
| Lecture: | Mo 10/26, We 10/28, Fr 10/30 |
| Sections: | 4.7, 5.1, 5.2 |
| Suggested exercises: | 4.7: (p. 284) 1, 4, 6, 8, 10, 12, 14, 16 |
| | 5.1: (p. 299) 3, 10, 25, 34 |
| | 5.2: (p. 311) 2, 9, 14, 22 |
| Homework: | p. 284, ex. 12, ex. 16; p. 299, ex. 34; p. 311, ex. 14 (due on Tuesday 11/03) |

**Week IX**

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|---|---|
| Lecture: | Mo 11/02, We 11/04, Fr 11/06 |
| Sections: | 5.3, 5.4 |
| Suggested exercises: | 5.3: (p. 323) 4, 11, 15, 23, (p. 324) 28, 35 |
| | 5.4: (p. 335) 2, 3, (p. 337) 16, 18 |
| Homework: | p. 311, ex. 22; p. 324, ex. 28; p. 337, ex. 16 (due on Tuesday 11/10) |

Midterm II on Thursday 11/05 covering sections 3.4 – 3.6, 4.1 – 4.5, 4.7, 5.1 – 5.2.

**Week X**

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|---|---|
| Lecture: | Mo 11/09, We 11/11, Fr 11/13 |
| Sections: | 5.5, 5.6 |
| Suggested exercises: | 5.5: (p. 351) 1, 2, 14, 20, 22, 32, 33 |
| | 5.6: (p. 362) 1, 5, 6, 12 |
| Homework: | p. 351, ex. 14; p. 362, ex. 6 (due on Tuesday 11/17) |

**Week XI**

| | |
|---|---|
| Lecture: | Mo 11/16, We 11/18, Fr 11/20 |
| Sections: | 6.1, 6.2 |
| Suggested exercises: | 6.1: (p. 374) 1, 2, (p. 375) 13, 14, 22, 33, 35 |
| | 6.2: (p. 383) 1, 9, 10, 15, 16, 20, 30, 32 |
| Homework: | p. 375, ex. 22; p. 383, ex. 20 (due on Tuesday 11/24) |

**Week XII**

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|---|---|
| Lecture: | Mo 11/23, We 11/25 |
| Sections: | 7.1, 7.2 |
| Suggested exercises: | 7.1: (p. 404) 1, 2, 6, 7, 12, 18 |
| | 7.2: (p. 417) 6, 7, 16, 18, 25, 28, 33 |
| Homework: | p. 404, ex. 18; p. 417, ex. 16, ex. 25 (due on Tuesday 12/01) |

Thanksgiving: No discussions on Thursday, no lecture on Friday.

**Week XII**

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|---|---|
| Lecture: | Mo 11/30, We 12/02, Fr 12/04 |
| Sections: | 7.3, 7.5 |
| Suggested exercises: | 7.3: (p. 429) 2, 6, (p. 430) 11, 25, 26, 29 |
| | 7.5: (p. 462) 2, 6, 7, 12, (p. 463) 20 |
| Homework: | p. 429, ex. 6; p. 462, ex. 12 (due on Tuesday 12/08) |

Midterm III on Thursday 12/03 covering sections 5.3 – 5.6, 6.1 – 6.2, 7.1 – 7.2

**Week XIV**

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|---|---|
| Lecture: | Mo 12/07, We 12/09, Fr 12/11 |
| Sections: | 10.1, 10.2 |
| Suggested exercises: | 10.1: (p. 585) 3, 13, 14, 20 |
| | 10.2: (p. 598) 6, 12, 13, 14 |
| Homework: | p. 585, ex. 13 (due on Tuesday 12/15) |

**Week XV**

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|---|---|
| Lecture: | Mo 12/14, We 12/16 |

Common Final exam on Thursday 12/17 covering material in chapters 1 - 7, and 10, except sections 1.6, 2.5 – 2.6, 3.7, 4.6, 6.3, 7.4, 10.3 – 10.5.