

MTH 2201/2202 (§4): Differential Equations/Linear Algebra- Fall 2019

Time & Place: MW: 1 - 1:50pm CRF 112; TR: 8 - 9:15am CRF 401

Instructor: Dr. Jay Kovats *jkovats@fit.edu* GSA: TBA *tba@my.fit.edu*

Office: CRF 313 Phone: 674-7756

Office Hours: M: 11am - noon, TR: 9:30 - 11:30am (and by appointment)

Text(s):

(i) *A First Course in Differential Equations with Modeling Applications, 11th ed., by D. Zill.*

(ii) *Schaum's Outline Series of Linear Algebra, by S. Lipschutz and M. Lipson*

WebAssign Online Homework Class Key: (to be used at *www.webassign.net*): fit 1492 9646.

Topic:

§1: Vectors in \mathbb{R}^n, \mathbb{C} (1.1 - 1.4, 1.7)

§2: Matrices (2.2 - 2.10)

§3: Linear equations

§8: Determinants (8.2, 8.3, 8.6 - 8.10)

§9: Eigenvalues and Eigenvectors (9.4, 9.5)

Test 1: Tuesday, September 17, 8-9pm

§1.1: Definitions and Terminology

§1.2: Initial-Value Problems

§2.1: Solution Curves Without a Solution

§2.2: Separable Equations

§2.3: Linear Equations

§2.4: Exact Equations

§2.5: Solutions by Substitution

§4.10: Nonlinear Differential Equations

§3.1: Linear Models

§3.2: Nonlinear Models

Test 2: Tuesday, October 22, 8-9pm

§4.1: Preliminary Theory- Linear Equations

§4.3: Homogeneous Linear Equations with Constant Coefficients

§4.4: Nonhomogeneous Linear Equations- Undetermined Coefficients

§4.6: Nonhomogeneous Linear Equations- Variation of Parameters

§4.7: Cauchy-Euler Equations

§5.1: Linear Models: Initial-Value Problems

§8.1: Preliminary Theory- First Order Linear Systems

§8.2: Homogeneous Linear Systems

§8.3.2: Nonhomogeneous Linear Systems

Test 3: Tuesday, November 19, 8-9pm

§7.1: The Laplace Transform

§7.2: Inverse Transforms and Transforms of Derivatives

§7.3: Translation Theorems

§7.4: Derivative of a Transform, Transform of an Integral

§7.5: The Dirac Delta Function

Final Exam: Wednesday, December 11, 10:30am -12:30pm Room TBA

Grading: Your course grade will be based on a quiz score (10%), a homework score (20%), a project score (10%), 3 midterm exam scores (30%) and a final exam score (30%). Your quiz score will be sum of the best 3/5 quiz scores. There are no make-up quizzes. Except for hw#1, homework assignments will be done on WebAssign. Your homework score will be the sum of the hw#1 score and the best 8/9 WebAssign scores. Projects are available only to those students with excellent lecture attendance (88.4% by 12/5). You may do a project any time after 11/21, but if your attendance is below 88.4% at 12/5, your project score will be forfeited. Only students with *excused absences* may make-up work. An excused absence requires a *University* excuse or official documentation. e.g. a doctor's note. If a student misses an exam due to an excused absence, it is the instructor's choice whether to give the student a make-up exam or to substitute the final exam score for the missed exam score. Electronic devices are not allowed on any quiz or exam.