MTH 232 Syllabus (12:30–1:45) Fall 2018

Instructor: James Angelos **Office:** Pearce 201G **Phone**: 774-4412
E-mail: james.angelos@cmich.edu **Web:** http://people.cst.cmich.edu/angel1jr/
Office Hours: 1:00-2:00 am MWF, 10:00-11:00 pm TTh, or by appointment
Textbook: *Differential Equations and Linear Algebra*, C. H. Edwards, D. E. Penney, D. T. Calvis, Pearson, 4Th Edition, 2018.

Welcome to MTH 232, Linear Algebra and Differential Equations. This course is designed for students in engineering. We explore the types, methods of solution, and applications of differential equations as well as the concepts of linear algebra, including matrix algebra, solution structure of system of linear equations, and vector spaces. We will consider how the two areas complement each other, in particular, how solution spaces of linear equations describe the solution structure of linear differential equations. The structure of linear transformations between vector spaces will be explored for its application to systems of differential equations as well as Laplace transforms.

Prerequisites

The prerequisite for this course is MTH 133 (Calculus II). Note that credit may not be earned in both MTH 223 (Linear Algebra and Matrix Theory) and MTH 232, or in both MTH 334 (Differential Equations) and MTH 232.

There will be 3 exams and a final. The final exam will be comprehensive in nature. In cases of extreme emergency, serious illness, or university related activity, when I have been notified in advance of the scheduled exam day. In these cases the student will be allowed to make up the missed exam. I will give these makeup exams on Friday, December 7 only. In addition, every week there will be a quiz, usually given on Fridays. These quizzes are worth 10 points each.

Absolutely no makeups for the quizzes will be given nor quizzes given early for any reason.

I will, however, drop your 2 lowest quiz scores.

Grading Scale

Point Total			Grading Scale (% of total)					
10	Quizzes	100	100–93	A	82–80	B-	69–66	D+
3	Exams	300	92–90	A-	79–76	C+	65–63	D
1	Final Exam	100	89–86	B+	75–73	C	62–60	D-
	Total	500	85–83	B	72–70	C-	59 ↓	E

Exam Dates

Exam 1:	Thursday, September 20	Chapters 1, 2, 3
Exam 2:	Thursday, October 18	Chapters 3, 4, 5
Exam 3:	Thursday, November 15	Chapters 5, 6, 7, 9
Final Exam:	Thursday, December 13 12:00–1:50 P.M.	Comprehensive

CMU provides students with disabilities reasonable accommodation to participate in educational programs, activities, or services. Students with disabilities requiring accommodation to participate in class activities or meet course requirements should first register with the office of Student Disability Services (120 Park Library, telephone: 989-774-3018, TDD 989-774-2568), and then contact me as soon as possible.

Material to be covered and assignments

Chapter 1

§1.1 (5,6,10,12,13,20,21,24,28,30,34,35,39,40,45,46)
§1.2 (2,3,6,7,10,11,14,18,19,21,25,27,29,30,33,38,43)
§1.3 (1,4,5,7,9,10,11,12,14,15,18,19,21,25,26,27,33)
§1.4 (3,6,9,12,14,19,22,24,28,31,36,39,46,49,52,57,64,66,68,69)
§1.5 (4,6,13,17,22,26,30,31,32,34,38,41,46)
§1.6 (3,6,12,15,18,21,22,27,30,31,34,37,40,47,50,56,59,63,72)

Chapter 2

§2.1 (3,5,9,11,15,19,23,26,29,30,32,34,39)
§2.2 (5,8,10,15,18,19,24)
§2.3 (2,3,6,7,9,12,17,21,23,28)

Chapter 3

§3.1 (1,3,6,10,13,15,20,22,23,26,29,31,33)
§3.2 (3,5,8,10,11,14,15,18,20,21,23,27,28,30)
§3.3 (1,3,8,10,17,10,32,37)
§3.4 (1,3,4,5,6,8,9,12,14,15,18,19,22,23,27,29,30,35,36,38,42)
§3.5 (2,3,7,8,9,13,16,20,21,23,24,27,32,33,35,43,44)
§3.6 (2,4,6,7,10,11,13,16,18,21,27,30,33,36,39,47,48,50,52,53,54,55,58)

Chapter 4

§4.1 (2,3,6,7,9,11,12,14,16,17,20,21,24,25,26,29,30,32,24,25,37,38,40,41)
§4.2 (4,5,6,11,13,15,18,19,22,24,25,28,29)
§4.3 (2,3,5,6,8,9,12,13,15,17,19,20,22,23,25,27,30)
§4.4 (2,3,5,7,9,10,12,14,16,17,19,23,25,26,27,29)
§4.5 (1,4,7,10,12,13,15,16,17,19,25,26,27,29,31)
§4.6 (2,3,6,7,15,17,20,21,213,24,25,27,29,34,35)
§4.7 (1,2,5,7,9,11,13,14,17,23,26,29,31)

Chapter 5

§5.1 (2,3,5,6,10,11,13,15,21,24,27,29,32,33,35,38,40,43,46,48,51,52,55)
§5.2 (3,4,7,9,10,13,15,18,22,23,25,26,30,33,36,39,42,44)
§5.3 (3,5,11,14,17,20,22,23,26,28,29,31,34,35,39,40,48,50,53,55,56)
§5.4 (2,3,6,9,10,12,13,16,17,19,24,25,30)
§5.5 (3,5,11,12,17,18,22,23,27,28,32,33,35,37,44,47,53,56,57,59,60)
§5.6 (1,4,5,8,9,16,17,21,23)

Chapter 6

§6.1 (2,4,5,10,13,19,23,26,27,30,33,34,37,38,40)
§6.2 (1,5,9,10,16,17,23,25,30,32,36)
§6.3 (1,3,8,10,11,14,18,20,21,24,25,28,34,38,39,40)

Chapter 7
§7.1 (1,4,6,9,11,14,17,19,21,24,25,27,28)
§7.2 (3,5,8,10,13,15,18,20,22,24,27)
§7.3 (1,3,6,8,14,17,20,22,25,26,29,39,40,41,42,46)
§7.4 (17,18,20,25,26,35)
§7.5 (1,4,6,8,11,12,16,17)
§7.6 (2,3,7,10,15,18,23)

Chapter 9
§9.1 (1–8,9,14,17,20,23)
§9.2 (1,4,9,20,23,25,28)
§9.3 (1,2,18,19)
§9.4 (1,3,6,7)

Chapter 10
§10.1 (3,6,8,11,14,17,20,21,23,26,27,30,32,35,37,39,40)
§10.2 (3,4,7,10,12,15,17,20,21,25,27,28,31,35,37)
§10.3 (1,4,5,8,9,11,14,17,22,23,25,29,31,34,40)
§10.4 (3,4,5,7,10,13,17,20,21,23,26,29,31,32,37)
§10.5 (1,4,5,8,18,20,23,26,27,29,31,34)

Chapter 11
§11.1 (3,6,9,15,25)
§11.2 (1,4,8,11,18,21,27,28)
§11.3 (1,3,4,6,7,9,12,15,17,20,23,26,28,31,37)