Differential Equations

MATH-2073-002

Spring Semester, 2015

Class Room and Class Times: Room 620 of Swift Hall
Monday, Wednesday, and Friday at 10:10-11:05 A.M..
except Monday, January 19 (Dr. Martin Luther King, Jr. Day)
and Spring Break, March 16-22.
From Monday, January 12 through Friday, April 24, 2015
and the Final Examination on Wednesday, April 29 at 12:00-2:00 P.M. in Room 620 of Swift Hall

Teacher: Roger Chalkley
Office: Room 4504, French Hall West
Office Hours: 1:00 a.m.-2:15 P.M. on Monday, Wednesday, and Friday
Phone: (513) 556-4074
Textbook: **Elementary Differential Equations,**
10^{th} Edition, by William E. Boyce and Richard C. DiPrima, John Wiley, 2012.
Syllabus: **See the next page for selected topics from Chapters 1 through 5**

Testing and Grading Policy: There will be two 55-minute examinations, four quizzes, and a 2-hour final examination. Each 55-minute exam will be graded on a basis of 100 points and weighted as 1/5 of your final grade. Each quiz will be graded on a basis of 25 points and weighted as 1/20 of your grade. The final examination will be graded on a basis of 100 points and weighted as 2/5 of your grade.

Quiz 1, January 23, Friday

Examination 1, February 6, Friday, 9:05-10:00 A.M.

Quiz 2, February 20, Friday

Quiz 3, March 6, Friday

Examination 2, March 27, Friday, 9;05-10;00 A.M.

Quiz 4, April 10, Friday

Final Exam, April 29, Wednesday, 12:00-2:00 P.M. in 620 Swift Hall

Partial credit on tests is awarded only for work that is mostly correct except for one on two minor errors. You will not be given partial credit for attempting to solve a problem by an incorrect method. You must show your work on the tests. A correct answer without the accompanying correct work will receive no credit; an incorrect final answer accompanied by mostly correct work will receive substantial credit. Also, arrange the work in a logical manner and write legibly. The grade is based on the work shown, not what was intended but not made clear.

Grade of W: March 20, a Friday, is the last day to withdraw from the class and receive a grade of W.

Differential Equations (15-MATH-2073-004)

(The 10th edition of Boyce and DiPrima)

Section Description	Suggested Homework Problems
1.3 Terminology	pages 24-25, Numbers 1–20
2.1 Linear first-order differential equations	page 40, Numbers 1, 3, 5, 7, 13-20
2.2 Separable first order differential equations	page 48, Numbers 1-9, 11, 13
and homogeneous (nonlinear) first-order ones	pages 50-51, Numbers 31, 33, 35, 37
2.3 Word Problems	page 60, Numbers 1–4
2.4 Comparisons	page 76, Numbers 1, 3, 5, 7, 9, 11
2.6 Exact differential equations	page 101, 1-15
(ignore integrating factors for other than linear first-order equations)	
Review Problems on pages 133-134. This is an excellent selection; but some need integrating factors.	
3.1 Second-order homogeneous linear equations	
having constant coefficients	page 144, Odd Numbers 1–17, 21, 23
3.2 Solutions, linear independence,	
and the Wronskian	pages 155–156, Numbers 1, 5, 9, 13, 17, 21, 25, 29, 33
3.3 Complex Roots	pages164, Numbers 1–6, 7, 9, 11, 13, 15, 17, 19
3.4 Repeated Roots	page 172-173, Odd Numbers 1–13
3.5 Nonhomogeneous	
– method of undetermined coefficients	page 184, Odd Numbers 1–17
3.6 Nonhomogeneous	
– variation of parameters	page 190, Numbers odd 1–15
4.1 General theory – nth order linear equations	pages 226–227, Odd Numbers 1–17
4.2 Homogeneous with constant coefficients	pages 233–234, Odd Numbers 1–23
4.3 Nonhomogeneous ones	
– undetermined Coefficients	pages 239, Numbers 1–8 and 13–18
4.4 Nonhomogeneous ones	
– variation of parameters	page 244, Number 1 and 7
5.1 Review of power series	page 253, Odd Numbers 1–27
5.2 Series solutions, Part I	pages 263-264, Odd Numbers 1–13