

◆ Ordinary Differential Equations

MA2051 Sections C11-C18, C20 • C'17 • OH107

▢ [Course Information](#) ▢ [Homework Assignment](#) ▢ [Course Materials & News](#) ▢

Syllabus & Calendar

Text: S.J. Farlow, *An Introduction to Differential Equations and Their Applications*, Dover Publications, Inc., 2006.

- The following plan for the lecture meetings is tentative. It will be followed rather closely, but there may be minor deviations from the outlined schedule.
- Some additional topics important for the course (but not mentioned below) may be covered in conferences.

<i>Lecture Meetings: Day & Date</i>	<i>Conference/ Quiz</i>	<i>Topic</i>	<i>Text's Section</i>
1: Thur, Jan 12	# 1	Introduction. Background review. Basic concepts	1.1
2: Fri, Jan 13	-	Basic theory. Classifying ODEs. Verifying solutions	1.2
3: Tue, Jan 17	# 2 / 1	Initial value problems. General and particular solutions. Separable equations	1.2, 2.2
4: Thur, Jan 19	# 3	Integrating factors	2.1
5: Fri, Jan 20	-	Growth/decay phenomena	2.3
6: Mon, Jan 23	-	Introduction to 2nd-order linear equations	3.1
7: Tue, Jan 24	# 4 / 2	Linear independence of two functions. The Wronskian	3.2, 3.4
8: Thur, Jan 26	# 5	Homogeneous equations with constant coefficients - real and complex roots	3.4, 3.5
9: Fri, Jan 27	-	Nonhomogeneous equations	3.6
10: Mon, Jan 30	-	Method of undetermined coefficients	3.7
11: Tue, Jan 31	# 6 / 3	Method of undetermined coefficients (<i>cont'd</i>)	3.7
12: Thur, Feb 2	# 7	Method of variation of parameters for nonhomogeneous equations	3.8
13: Fri, Feb 3	-	Method of variation of parameters (<i>cont'd</i>). Review of topics in Exam I	3.8
14: Mon, Feb 6	-	<i>All covered topics in Chapters 1, 2, Sections 3.1, 3.4-3.7</i>	Exam I
15: Tue, Feb 7	# 8 / 4	Mechanical systems and harmonic motion	3.9
16: Thur, Feb 9	# 9	Simple harmonic motion (<i>cont'd</i>)	3.9

17: Fri, Feb 10	-	Unforced damped vibrations	3.10
18: Mon, Feb 13	-	Forced vibrations	3.11
19: Tue, Feb 14	# 10 / 5	The Laplace Transform - definition and properties.	5.1
20: Fri, Feb 17	-	The Laplace Transform properties (<i>cont'd</i>)	5.2
21: Mon, Feb 20	-	Table of Laplace Transforms	5.2
22: Tue, Feb 21	# 11 / 6	Inverse Laplace Transform	5.3
23: Thur, Feb 23	# 12	Initial-value problems	5.4
24: Fri, Feb 24	-	Step functions and delayed functions	5.5
25: Mon, Feb 27	-	Laplace Transform of delayed and periodic functions	5.5
26: Tue, Feb 28	# 13 / 7	Equations with discontinuous forcing functions. Review of topics in Exam II	5.6
27: Thur, March 2	-	<i>All covered topics in Sections 3.8-3.11 and Chapter 5</i>	Exam II

vadim@wpi.edu

Last modified: Thur, Jan 12, 2017