

# Differential Equations I (Math 376) — Fall, 2012

**Location and Time:** 1:00-1:50 pm, MWF, Hebeler 116

**Instructor:** Dr. Dan Curtis

**Office:** 107a Bouillon

**Office Hours:** MTWThF 11:00-11:50 am. Actually, you can come by my office at any time and, unless I am occupied, I will be happy to talk with you.

**CWU e-mail:** curtiswd@cwu.edu

**Web Page:** [www.cwu.edu/~curtiswd](http://www.cwu.edu/~curtiswd)

**Final Exam:** Wednesday, December 5, 12:00-2:00 pm

**Textbook:** Fundamentals of Differential Equations and Boundary Value Problems (6-th edition) by Nagle, Saff, and Snider. **The textbook is required.**

**Calculator and Computers:** A graphing calculator will be useful for this course. But more useful will be software like *Mathematica*. I will use *Mathematica* frequently for classroom demonstrations. *Mathematica* is available for student use in the Bou103 lab or in the computer lab in the library.

**Course Content:** The course will cover material from chapters 1-5 of the text. You should read the book. The examples in the text will supplement those given in class and the discussion and examples given in the text will provide reinforcement for material presented in class.

**Class Attendance:** You are expected to attend class daily, but your attendance does not count toward your grade. If you miss class, you must consult classmates to find out what you missed.

**Homework:** Numerous problems will be assigned but not turned on for grading. Homework problems will provide material for discussion in class.

**Course Prerequisites:** Basic calculus skills will be essential. Linear algebra methods will be used but largely will be developed as needed.

**Learner Outcomes:** Upon successful completion of this course, the student will know:

- What a differential equation is and what an initial-value problem is.
- How to set up initial-value problems to describe a variety of situations from science and engineering.
- Analytical methods for solving first-order differential equations.
- Analytical methods for solving certain classes of linear differential equations of second order and higher.
- How to use *Mathematica* to solve differential equations: both exact solutions and numerical solutions can be obtained using this software.
- How to use the graphics capabilities of *Mathematica* to visualize the results of calculations.

**Students with disabilities:** If you require accommodation based on a documented disability, have emergency medical information to share, or need special arrangements in case of emergency evacuation, please make an appointment with me as soon as possible.

**Grading:** Your course grade will be determined by the following:

1. Two **100-point** in-class exams will be given. The **dates** of these exams can be found in the Schedule portion of this syllabus. The in-class exams are therefore worth up to **200 points** toward your course grade.
2. Two **50-point** take-home assignments, for a possible total of **100 points**.
3. A **comprehensive final exam** worth **100 points**

A perfect score on each of the above categories would result in a total of 400 points. Your course grade will be determined by the percentage  $p$  of these points you earn, according to the following scale.

$90 \leq p$	A	$65 \leq p < 77.5$	C
$89 \leq p < 90$	A-	$64 \leq p < 65$	C-
$87.5 \leq p < 89$	B+	$62.5 \leq p < 64$	D+
$80 \leq p < 87.5$	B	$50 \leq p < 62.5$	D
$79 \leq p < 80$	B-	$p < 50$	F
$77.5 \leq p < 79$	C+		

## Class Schedule

<b>Date</b>	<b>Class Activity</b>	<b>Date</b>	<b>Class Activity</b>
09/17		10/29	
09/18		10/30	
09/19	Classes begin	10/31	
09/20		11/01	
09/21		11/02	
09/24		11/05	
09/25		11/06	
09/26		11/07	
09/27		11/08	
09/28		11/09	<b>In-class Exam 2</b>
10/01		11/12	<b>HOLIDAY: Veteran's Day</b>
10/02		11/13	
10/03		11/14	
10/04		11/15	
10/05	<b>In-class Exam 1</b>	11/16	
10/08		11/19	<b>Second Take-home set given</b>
10/09		11/20	
10/10		11/21	<b>HOLIDAY: Thanksgiving</b>
10/11		11/22	<b>HOLIDAY: Thanksgiving</b>
10/12		11/23	<b>HOLIDAY: Thanksgiving</b>
10/15		11/26	
10/16		11/27	
10/17		11/28	<b>Second Take-home set due</b>
10/18		11/29	
10/19	<b>First Take-home set given</b>	11/30	<b>Last day of classes</b>
10/22		12/03	<b>Prof. Dev./ Student Study Day</b>
10/23		12/04	
10/24	<b>First Take-home set due</b>	12/05	<b>Final Exam (12:00-2:00 pm)</b>
10/25		12/06	
10/26		12/07	