MANHATTAN COLLEGE
Syllabus

Course Title   **Differential Equations**
Course Number   **MATH 286**
Section Number(s)   **11**
Semester   **Spring**
Year   **2013**

Course Description
This course focuses on techniques of solving first- and second-order ordinary differential
equations. Methods include separation of variables, variation of parameters, and the Laplace
transform. Applications include linear and nonlinear models.
Prerequisite: MATH 285/201 (Calculus III) or 287/209 (Honors Calculus III) or permission
of instructor.

Class Meeting Times

| Lecture | 12:20-1:15 PM | M | LEO 235 |
| Lecture | 12:20-1:15 PM | TR | LEO 252 |

Instructor's Name   **Dr. Tyler Markkanen**
Office Location   **RLC 200A**
Office Hours   **TBA (See HW 0.)**
Contact Information **tyler.markkanen@manhattan.edu**
                     (718) 862-7831

Required Textbook for the Course
Option 1:
Bundle ISBN: 9781133804062 (Physical text and EWA access with eBook)
Zill. *A First Course in Differential Equations with Modeling Applications, 10th Edition*
Text and Enhanced Web Assign with eBook Printed Access Card

Option 2:
Standalone EWA ISBN: 9780538738101
Enhanced Web Assign with eBook Printed Access Card

Subject Material Covered in the Course
Topics are from selected sections in the following chapters (see Assignment List below):
Chapter 1: Introduction to Differential Equations
Chapter 2: First-Order Differential Equations
Chapter 3: Modeling with First-Order Differential Equations
Chapter 4: Higher-Order Differential Equations
Chapter 5: Modeling with Higher-Order Differential Equations
Chapter 7: The Laplace Transform
Chapter 8: Systems of Linear First-Order Differential Equations

Outcome Expectations
- Improve problem-solving skills and quantitative literacy
- Interpret differential equations and models with various representations (e.g., numerical, graphical, analytical, and verbal)
- Gain familiarity with Maple and how to use it to model and solve differential equations
- Understand and apply some classical mathematical models and techniques for dealing with and changing quantities
- Appreciate the beauty and significance of differential equations

Howework Assignments and Suggested Exercises
- For each section of the textbook, there is a list of *suggested exercises* from the book. You are responsible for submitting a subset of those exercises. The homework due dates will be announced in class and will be displayed on WebAssign (see below). ALL WORK and steps should be clearly shown in your notebook (which I will randomly inspect!) and no credit will be given for just the answers. Remember, office hours are a good place to get homework help.
- **HW 0:** Logon to our course website on **Moodle** at **https://lms.manhattan.edu.** Click on the **My Schedule** link. Fill out and submit the schedule form that comes up. **HW 0 IS DUE BY MONDAY 1/28 AT 11:55 PM.**

WebAssign
All graded homework assignments will be on the **WebAssign** online homework system. To access WebAssign, go to **www.webassign.net** and click on **"I Have a Class Key."** Enter our Class Key: **TBA.** This is NOT the same as an Access Code, which you need for PERMANENT access to WebAssign. If your textbook did not come with an Access Code, then ask the bookstore for help. You can also purchase an Access Code by logging into your WebAssign account and clicking **"purchase an access code"** or **"Get access now."** You need to get your Access Code immediately. Temporary access ends on: **TBA.**

Dates and Times of Quizzes and Exams
- **QUIZZES:** There will be a quiz **once a week** (except on the first week of the semester and exam weeks). They will be given **in class** on the following Thursdays: 1/31, 2/7, 2/14, 2/28, 3/7, 4/4, 4/11, 4/18, and 5/2.
- **EXAMS:** There will be **three in-class exams** and a **cumulative final exam.** The dates of the in-class exams are shown below. The date, time, and location of the final exam will be announced later once it is determined by the registrar.

EXAM	DATE
Exam 1	Tuesday 2/19
Exam 2	Monday 3/25
Exam 3	Thursday 4/25
Final Exam	TBA (Finals Week: R-S 5/9-5/11 & M-W 5/13-5/15)

Grading Method, Extra Credit Assignments, and Make-Up Policy
- *GRADE:*

	Percentage of Final Grade
Class Participation	5%
Homework	15%
Quizzes	15%
Exams (3)	15% (each)
Final Exam	20%

- *EXTRA CREDIT:* There will be occasional extra credit opportunities. Stay tuned for the details of each extra credit assignment as the semester progresses.
- *MAKE-UPS:* Make-up quizzes and exams are generally not allowed unless you tell me **in advance** that you will be absent on a quiz/exam day. After solutions to a HW or quiz have been posted, make-ups for that HW or quiz will not be allowed.

Attendance Policy
You are expected to attend each class. Please come to class prepared and ready to learn. Ask questions and make helpful comments. Be ready to participate in class discussions and activities. If you miss class, you are responsible to get the notes and assignment details from someone in the class, as well as any handouts. **You must notify me IN ADVANCE if you will be absent on a quiz/exam day.**

Expected Academic/Professional Conduct
- All written work must conform to standard English usage. Failure to meet such standards will affect your grade.
- When placed on your assignments, your name verifies that the work is your own.
- All Manhattan College students are expected to maintain the highest standards of academic and personal integrity. Any violations of academic integrity like exam cheating, facilitation of dishonesty, plagiarism, i.e. copying from any source (e.g., classmates, published sources, and the Internet) for an assignment without proper quotation and citation, will be dealt with in accordance with the student handbook of Manhattan College and will result in disciplinary penalties.

Assignment List & Schedule

Homework assignments to be submitted on WebAssign will be similar to/same as selected * exercises.
The exercises without a * are **suggested** and will be used as **quiz items**.

Week	Day	Date	Section	Assignment (DUE DATES TBA)
1	T	1/22	1.1	pp. 10-11: #2, 4*, 9, 12*, 13, 15, 21*, 22, 29, 31*, 34, 35*, 37, 39*, 43
	R	1/24	1.2	pp. 17-18: #2, 4*, 5, 7*, 9, 12, 13, 16*
2	M	1/28	1.3	pp. 27-30: #1, 2*, 3, 5*, 7, 9*, 12, 13, 14*, 15, 19*, 21, 23, 26*
	T	1/29	2.1.1, 2.1.2	pp. 41-43: #3*, 6*, 8, 10*, 11, 15, 19*, 21, 23*, 27, 30*
	R	1/31	2.2	pp. 50-51: #1, 3*, 6, 9, 12*, 14, 15*, 17, 19, 24*, 25, 33, 34, 39*, 41, 42*
3	M	2/4	2.3	pp. 60-61: #1, 3*, 5, 7, 9, 12*, 14, 17, 19, 22*, 25*, 27, 30, 31*, 34, 36*
	T	2/5	2.4	pp. 68-69: #1*, 4, 7*, 12, 15, 24*, 27, 29*, 31, 34*, 37, 39
	R	2/7	2.5	p. 74 #1*, 5, 9, 13*, 15, 17*, 21*, 25, 27*, 29
4	M	2/11	2.6	p. 79: #1, 3*, 5, 9*, 11
	T	2/12	3.1	pp. 89-94: #1, 3, 5, 8*, 11, 12*, 15, 19, 21*, 23, 25*, 30*, 46, 47(a)*, 47(b)(c)(d)
	R	2/14	3.2	pp. 99-101: #1*, 3, 8, 9*, 11, 15, 17, 19*
5	M	2/18	REVIEW	
	T	2/19	**EXAM 1**	
	R	2/21	4.1.1	pp. 128-129: #2*, 4, 5* (Thm 4.1.1 part is for E.C.), 7, 9, 10*, 11, 13*
6	M	2/25	4.1.2	p. 129: #15, 16*, 20, 21*, 23, 25*, 27*, 28
	T	2/26	4.1.3	pp. 129-130: #31*, 33, 35*, 37, 39*
	R	2/28	4.2	pp. 132-133: #1, 2*, 3, 7*, 9, 13*, 15, 18*, 19, 21(a)*(b)*, 21(c)
7	M	3/4	4.3	pp. 138-139: #1, 3, 5*, 7, 9, 11, 13*, 15, 19, 23*, 29, 31*, 33, 39, 43*, 45, 47*
	T	3/5	4.4	pp. 148-149: #1, 3*, 5, 7, 11, 13*, 15, 19, 27, 31*, 33, 39*
	R	3/7	4.6	pp. 161-162: #1, 3*, 5, 7, 11, 15*, 17, 19*, 23*
8	M	3/11	4.7	p. 168: #3*, 5*, 7, 11, 13, 19, 21*, 23, 27, 29, 31, 33*, 35, 37*
	T	3/12	4.8	pp. 172-173: #1*, 3, 5*, 9, 11*, 15, 17, 21*
	R	3/14	REVIEW	
9	M	3/18		*SPRING BREAK – NO CLASSES*
	T	3/19		*SPRING BREAK – NO CLASSES*
	R	3/21		*SPRING BREAK – NO CLASSES*
10	M	3/25	**EXAM 2**	
	T	3/26	5.1.1, 5.1.2	pp. 194-196: #1*, 5, 7, 9, [11(a)-(e)]*, 11(f)-(k), 17, 19*, 21, 25*, 27
	R	3/28	5.1.3	pp. 196-197: #29*, 33, 37, 39*, 41(a)
11	M	4/1		*EASTER HOLIDAY – NO CLASSES*
	T*	4/2	5.1.4	p. 198: #45*, 49, 53*, 57
	R	4/4	7.1	pp. 261-262: #1, 3*, 5, 9, 13, 17*, 19*, 23, 31*, 39, 41*
12	M	4/8	7.2.1	pp. 269-270: #1, 3*, 7, 11, 13*, 15, 19*, 21, 25, 27, 29*
	T	4/9	7.2.2	p. 270: #31*, 37, 41*
	R	4/11	7.3.1	pp. 278-279: #3*, 5, 9, 11, 13*, 15, 19, 21*, 25*, 27, 31, 33*
13	M	4/15	7.3.2	pp. 279-281: #37*, 41, 43*, 45, 47*, 49, 51, 57, 59, 65, 67*, 73
	T	4/16	7.4.1	pp. 289-290: #3, 7*, 9, 11*, 13, 17
	R	4/18	7.4.2	p. 290: #21, 23*, 25, 31, 37*, 41, 43
14	M	4/22	7.4.3	pp. 290-291: #49*, 51
	T	4/23	REVIEW	
	R	4/25	**EXAM 3**	
15	M	4/29	8.1	pp. 310-311: #2, 4*, 8, 10, 11*, 18*, 19, 21*
	T	4/30	8.2.1	p. 324: #1*, 5, 7, 9*, 11, 13*
	R	5/2	8.2.2	p. 325: #19*, 23, 25*, 29*
16	M	5/6	8.2.3	pp. 325-326: #33*, 39, 41*, 43, 45*
	T	5/7		REVIEW FOR FINAL

*Tues April 2 is a Monday schedule.
DATE, TIME & LOCATION OF THE FINAL EXAM: TBA