

# Course Syllabus    MTH 335    Section 101    Fall2014

---

<b>Course Title:</b>	Differential Equations
<b>Course Number:</b>	MTH 335 -- Section 101 -- CRN 3266 -- Credit: 4 Hours
<b>Textbook:</b>	Differential Equations with Boundary Value Problems by Zill and Wright, Eighth Edition, ISBN-13: 978-1-133-49140-8
<b>Sections Covered:</b>	1.1-1.3, 2.1-2.6, 3.1-3.2, 4.1-4.10, 5.1-5.2, 6.1-6.4, 7.1-7.6, 8.1-8.2
<b>Course Description:</b>	First, second, and higher-order ordinary differential equations, Applications including vibrations and electrical circuits, Series Solutions, Laplace transform, approximate solutions, System of first order linear equations
<b>Calculator:</b>	TI-83 or higher, (TI-89 highly recommended)
<b>Prerequisites:</b>	MTH 231
<b>Meeting Time:</b>	MTWR: 8:00 – 8:50 AM
<b>Classroom:</b>	Smith Hall 513
<b>Instructor:</b>	Dr. Basant Karna
<b>Office:</b>	Smith Hall 741B
<b>Office Hours:</b>	MTW 9:00-10:00AM, R 9:00-11:00 AM, Others by appointment
<b>Phone/Email:</b>	Phone: (304) 696-4332, Email: <a href="mailto:karna@marshall.edu">karna@marshall.edu</a>
<b>Webpage:</b>	<a href="http://www.science.marshall.edu/karna/">http://www.science.marshall.edu/karna/</a>
<b>Course Objectives:</b>	The objectives of this course are to provide students with a clear understanding of First order DEs, Second and higher order linear DEs and different methods to solve them including series solutions and using the Laplace Transform. Students will also learn the applications including vibrations and electrical circuits.
<b>Course Contents:</b>	<ul style="list-style-type: none"> <li>- Introduction</li> <li>- First Order Differential Equations</li> <li>- Modeling with First-Order Differential Equations</li> <li>- Higher Order Linear Equations</li> <li>- Modeling with Higher-Order Differential Equations</li> <li>- Series Solutions of Linear Equations</li> <li>- The Laplace Transform</li> <li>- Systems of Linear First Order Differential Equations</li> </ul>
<b>Attendance Policy:</b>	Attendance is required and you must come with your text. Attendance will be taken every class day either by sign-in-sheet or by quiz. Having more than <b>30%</b> absences (excused or unexcused) may result in a course grade of <b>F!</b> Absences which can be excused include illness, emergencies, or participation in another university activity. Documentation from an outside source must be provided.
<b>Grading Policy:</b>	<p>A. <i>Quizzes:</i> Throughout the semester, there will be 12 quizzes given during the last 15 minutes of the class on Mondays. Problems in quizzes will be given from assigned homework problems (textbook will not be allowed). The lowest two quizzes score will be dropped.</p> <p>B. <i>Exams:</i> There will be 2 exams given in class during the semester.</p> <p>C. <i>Homework Problems:</i> 10 homework assignments will be collected on regular basis. You are responsible for reading the text, working the exercises, coming to office hours for help if you need and being aware of the dates for the major exams.</p> <p>D. <i>Final Exam:</i> There will be a two-hour final exam on December 11.</p>

<b>Points Distribution:</b>	<div> <div>Quizzes(10)100 Pts</div> <div>Homework(5)50 Pts</div> <div>2Exams200 Pts</div> <div>Attendance35 Pts</div> <div>Final Exam115 Pts</div> </div> <div>-----</div> <div>Total Points:500 Pts</div>
<b>Grades</b>	<p>The semester grade will be based on the percentage of the 500 total possible points, using the following scale.</p> <p>A: 90 -100 % , B: 80 - 89 % , C: 70 - 79 % , D: 60 - 69 % , F: 0 - 59 %</p>
<b>Make-ups:</b>	<p>A. Quizzes: There will be no make-ups on missed quizzes for any reason. For unavoidable missed quizzes with valid documentation, I will give you average points of rest of your quizzes for a maximum of two quizzes. A score of 1 point will be given in rest of the missed quizzes.</p> <p>B. <i>Homework Assignments</i>: I expect you to submit me the homework assignments on time.</p> <p>C. <i>Exams</i>: Making up a missed exam is possible only if you receive prior permission from me and only for serious and unavoidable circumstances. Make-ups exam must be taken within a week of the original exam date. You can't make up a make-up exam.</p> <p>D. <i>Final</i>: If you don't take final exam, you will receive "F" for the class.</p>
<b>Exam Dates:</b>	<p>Exam 1 – October 2, Exam 2 – November 13 (Thursdays)</p> <p>Quizzes: Q1-A28, Q2-S4, Q3-S11, Q4-S18, Q5-S25, Q6-O9, Q7-O16, Q8-O23, Q9-O30, Q10-N6, Q10-N13, Q11-N20, Q12-D4 (Thursdays)</p> <p>Final Exam: December 11 @ 8:00 AM(Thursday) in SH 513</p>
<b>Important Dates:</b>	<ul style="list-style-type: none"> <li>▪ September 1, Monday – Labor Day – No Class</li> <li>▪ September 2, Tuesday – "W" Withdrawal period begins</li> <li>▪ October 31, Friday – Last day to drop</li> <li>▪ November 24, Monday – November 29, Saturday – Fall Break- No Class</li> <li>▪ December 5, Friday – Last class day</li> </ul>
<b>Cell Phones:</b>	All electronic devices should be shut off during class. <b><i>No Text Messaging!</i></b>
<b>Academic Honesty</b>	Please see the Marshall University Academic Affairs website <a href="http://www.marshall.edu/academic-affairs/?page_id=802">http://www.marshall.edu/academic-affairs/?page_id=802</a>
<b>University Policies</b>	for policies regarding Academic Dishonesty, Excused Absence Policy, University Computing Services Acceptable Use, Inclement Weather, Dead Week, Academic Dismissal, Academic Forgiveness, Academic Probation and Suspension, Academic Rights and Responsibilities for Students, Affirmative Action, Sexual Harassment.
<b>Disable Students:</b>	The Disabled Student Services web site is now available. You may visit it at <a href="http://www.marshall.edu/disabled">http://www.marshall.edu/disabled</a> . Students seeking special accommodations need to follow the university policy detailed at this web site. It is their responsibility to initiate the process for receiving accommodations based upon their disability. If you have any questions or comments, please contact Sandra Clements, the Director of Disabled Student Services.
<b>Coming Late:</b>	Students should come on time and stay in the class for entire class. If you are late by more than 10 minutes, you will be considered to be absent.

# Homework Problems

## ----- HW 1 -----

- Section 1.1 ▶ 1 – 7(**Odds**), 9, 10, **11**, 17, 20, **23**, 27, **34**, 39, 52  
Section 1.2 ▶ 2, **5**, 7, **9**, 13, 14, **15**, 17, **19**, 22, 30, **35 – 38**  
Section 2.1 ▶ 1, **3**, 5, **7**, 9, 10, **16**, 19, **20, 21, 23**  
Section 2.2 ▶ 1, 2, **3**, 4, 6, **8**, 10, 12, **13**, 17, **19**, 21, 22, **23**, 25, 28, **36**, 43  
Section 2.3 ▶ 2, **3**, 5, 7, **9**, 12, **17**, 20, **24**, 28, **33**, 37, 53

## ----- HW 2 -----

- Section 2.4 ▶ 1, **3**, 4, **7**, 9, 10, **13**, 16, **21**, 25, **29**, 32, **35**, 38, 45(a)  
Section 2.5 ▶ 1, **4**, 6, **7**, 10, **11**, 13, **16**, 23, **26**, 27, **29**  
Section 2.6 ▶ **2**, 4, **5**, 7, **9**, 11  
Section 3.1 ▶ 1, **2**, **3**, 4, **5**, 6, **9**, 11, **13**, 14, **17**, **21**, 22, 23, **25**, 29, **31**, 32  
Section 3.2 ▶ **1**, 2, **3**, 5, **6**, 9, 19(try), 24(try).

## ----- HW 3 -----

- Section 4.1 ▶ 1, **3**, 4, **5**, 7, 9, **12**, 13, 15-30(**Odds**), 31-36(**Odds**)  
Section 4.2 ▶ 1, **2**, 4, **8**, 10, **11**, 13, **16**, **17**, 18, **19**  
Section 4.3 ▶ 1, **3**, 6, **9**, 13, **16**, 18, 20, **23**, 25, 28, **33**, 35, **37**, 40, **43-48**, 49, **51**, 59, 61, 65  
Section 4.4 ▶ 3, **5**, 6, **8**, 12, **14**, 17, **19**, 22, **24**, 27, **29**, 31, **39**  
Section 4.5 ▶ 1, **3**, 7, 8, **12**, 14, 15 – 26(**Odds**), **31**, 33, **37**, 40, **42**, 46, **48**, 53, **57**, 60, 67, 70

## ----- HW 4 -----

- Section 4.6 ▶ 1, **2**, 4, **5**, 6, **7**, 11, **12**, 13, **20**, 25  
Section 4.7 ▶ 1, **3**, 5, **7**, 9, **11**, 16, **19**, 21, **22**, 24, **29**, 31, **33**  
Section 4.8 ▶ 1, **3**, 5, **6**, 8, **10**, 16, **21**  
Section 4.9 ▶ **1**, **4**, 6, **13**  
Section 5.1 ▶ 1, 2, **3**, **5**(a, b), 6, 8, **11**(a-c),(f),(g),(h), **17-20**, 23, 26(a),(b), **29**, 32, **45**, 47, 49, 53

## ----- HW 5 -----

- Section 5.2 ▶ 1, **3**, **5**, **9**, 11, **12**, 16  
Section 6.1 ▶ **3**, 5, **7**, 11 **19**, 23, **27**, 28, 33  
Section 6.2 ▶ 1, **3**, **7**, 9, **13**, 18, **21**  
Section 6.3 ▶ **1-9**, **11**, 13, **15**, **17**, 18, **23**, 25  
Section 6.4 ▶ 1, **3**, 5, **7**, 9, **10**, 27(a)  
Section 7.1 ▶ 1, **3**, 5, **7**, **9**, 12, **14**, 17, **20**, 23, **28**, 32, **33**, 36, 37

## ----- HW 6 -----

- Section 7.2 ▶ 1, **4**, 8, **10**, 11, **13**, 15, **19**, 23, **26**, 30, **33**, 34, 35, 38  
Section 7.3 ▶ **3**, 6, **7**, 11, **15**, 20, **21**, 25, **37**, 41, 43, **47**, 48, **55**, 57, **63**, 65, 67  
Section 7.4 ▶ 1, **3**, 7, **9**, 11, **19**, 21, **28**, **31**, 37, **39**, 43  
Section 8.1 ▶ 1, **3**, 6, **8**, 10, **11**, 14, 17, **19**, 21  
Section 8.2 ▶ 1, **5**, 7, **9**, 13, **19**, 21, **23**, 25

Due dates are Mondays after the Sections are covered.