Differential Equations (MA 2051 C01-C06)
Course Information

Worcester Polytechnic Institute C-Term Spring 2017

Instructor: Prof. B.S. Tilley

Course Objectives	This is a first course In ordinary differential equations which requires the material in Calculus (MA 1021-MA 1024). The material in this course provides fundamental mathematical content for topics in science and engineering, since the mathematical models that describe many processes in these disciplines are ordinary differential equations. So, the objectives of this course center not only on the mathematical topics, but also on the qualitative interpretation of the solutions to ordinary differential equations. The goal is for students to be proficient at the material covered, and at the end of the course, the student should be able to do: • Solve separable differential equations by integration • Solve first-order linear differential equations by different methods, and qualitatively interpret their solutions. • Find fundamental solutions to second-order linear constant-coefficient differential equations • Find homogeneous and particular solutions to second-order linear constant-coefficient differential equations • Mathematically model fundamental processes from science and engineering using ordinary differential equations. • Quantitatively and qualitatively interpret solutions to second-order linear constant-coefficient differential equations. • Use Laplace Transforms to find solutions to linear constant-coefficient differential equations.
Course Structure	The class meets five times per week: 4 lectures (MTRF) and 1 conference session (T). Students are responsible for any and all material discussed in lecture and in conference. Students are expected to spend an additional **8-10 hours per week** studying outside of class: reading the text, organizing notes, and solving problems. In previous years, the average time self-reported by students is **9 hours** per week for this class. Grades are determined through WebWorK homework assignments, quizzes, and exams. These are described in more detail below.

Place/Time	Lecture: MTRF: 2:00-2:50, SL 115 (Tilley)
	
	Conference:
	
	       C01: T: 8:00 – 8:50, SH 308 (jsresh -at- wpi -dot- edu)
	
	       C02: T: 4:00 - 4:50, SH 309 (pdfitzgerald -at- wpi -dot- edu)
	
	       C03: T: 11:00 - 11:50, SH 308 (cjbonner -at- wpi -dot- edu)
	
	       C05: T: 12:00 - 12:50, HL 154 (qzhang4 -at- wpi -dot- edu)
	
	       C06: T: 3:00 - 3:50, SH 309 (kkumar -at- wpi -dot- edu)

Instructor Info	Instructor: Prof. Burt S. Tilley SH 202A (508) 831-6664.
	
	e-mail: tilley -at- wpi -dot- edu (Not read between 7:00 pm – 7:00 am)
	  Office Hours: MR: 3:00-5:00pm or by appointment
	
	TA: Jill Resh SH 204 (508) 831-5556
	
	e-mail: jsresh -at- wpi -dot- edu
	
	  Office Hours: W: 3:00-5:00pm or by appointment.:

Textbook	*An Introduction to Differential Equations and Their Applications,* by Stanley J. Farlow, Dover. ISBN: 048644595X. **NOTE:** Although a very readable book, it does have some typos which have been catalogued at [UMBC](#) .
Electronics Policy	All lectures (audio and video) are captured through course capture, and can be found on the course Canvas page. No recording of audio or video recording by students is allowed during lecture or conference. Laptops, phones, and tablets should be turned off during the lecture and conference sessions. If you take notes (typing only) using these devices during lecture, then you should sit in the **back** of the room, since screen activity is distracting to your neighbors.

	Electronic devices and watches/wearable devices are not permitted during exams or quizzes. Please put *all* watches/wearable devices away before the quiz or exam starts.
Feedback	Students will be asked to write 'minute papers' periodically throughout the semester.
Special Arrangements	If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me, please make an appointment with me as soon as possible. My office location and hours are listed at the top of this syllabus. If you have not already done so: students with disabilities, who believe that they may need accommodations in this class, are encouraged to contact the Disability Services Office (DSO), as soon as possible to ensure that such accommodations are implemented in a timely fashion. The DSO is located in Daniels Hall, (508) 831-5235.
Academic Dishonesty	Each student should be familiar with WPI's Academic Honesty Policy (http://www.wpi.edu/Pubs/Policies/Honesty/policy.html) All acts of fabrication, plagiarism, cheating and facilitation will be prosecuted according to the University's policy. **If you are unsure whether your intended actions are considered academically honest or not, please see me!**

	Deliverable	**Description**	**Grade Weight**
Assignments	WebWorK:	There will be assignments using this online tool (you used it for the placement exam) to understand your basic knowledge of the topics for that day's lecture. You receive full credit for correct answers, independent of the number of attempts made. The first assignment is due on **19 January 2017.** Each problem is equally weighted (1 point is a perfect score) toward the overall average grade. Solutions to these problems need to be completed by **Thursday at 5:30pm.** The percentage grade for WebWorK is calculated by **minimum of {(total score) / (total number of problems – 10) , 1} x 100**	15.00%
	Quizzes:	Short (2 problem) quizzes will be in lecture, typically on Fridays, when there are no exams. The questions are formatted on the recommended written homework assignments. **These quizzes begin on 20 January 2017, and the quiz dates are listed on the Schedule Page**. The quizzes will be returned to you at the next conference. There are five quizzes, and the best four scores constitute the grade. No make-up quizzes are allowed.	40.00%
	Exams:	There are two 45 minute-exams given during the term: **3 February 2017** and **2 March 2017**. The sections covered for each exam are shown on the Schedule Page. These exams are given in lecture.	45.00%
Grading	Final grades will be assigned as A,B,C,I, or NR. In general, grades will be distributed	

	approximately as follows:
	A: 90-100%
	B: 80-89%
	C: 68-79%
	NR: other