

Purdue University
MA 26200-131, Fall 2015

Instructor's Name: Yuanzhen Shao

Office: MATH 850

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Office Hours and location: Monday 11:00am-12:00pm and Monday 1:00pm-3:00pm or by appointment, MATH 850.

Lecture Information

Lecture Time: MWF 9:30am-10:20am.

Lecture Location: PHYS 338.

Course Webpage: <http://www.math.purdue.edu/MA26200/>

Session Webpage: <http://www.math.purdue.edu/~shao92/Blake%20-%20262-131.htm>

Teaching Assistant's Name: Daniel Shankman

Office: MATH 633

Email: dshank@purdue.edu

Office Hours and location: Tuesday 10:30am-12:30pm, MATH 633.

Recitation Information:

Recitation Time: R 10:30am-11:20am.

Recitation Location: REC 123.

Course Description

Differential equations with linear algebra is an introductory course in differential equations. It will cover the following topics: scalar differential equations, systems of differential equations, Gauss elimination, algebra of matrices, determinants, vector spaces, linear operators, eigenvalues and eigenvectors. This material corresponds to topics from Chapters 1-7 in the textbook.

Required Texts

Differential Equations and Linear Algebra, by Stephen W. Goode and Scott A. Annin, 3rd edition.

Course Policies

Grading

The course will have two one-hour midterm exams, each constituting 100 points, one final exam constituting 200 points, and homework assignments and quizzes constituting 200 points. The two lowest homework scores and quiz scores will be dropped.

You will be allowed to take a make-up test only in very special circumstances. See Section Attendance below for more details. If you have to miss an exam, contact the instructor as soon as possible.

Homework and Schedule

Homework problems to be handed in will be assigned on a weekly basis. The primary way to submit homework will be through WebAssign. There will also be hand graded homework submitted on paper. The Assignment sheet is available on the course webpage. The login page for webassign is: <https://www.webassign.net/purdue/login>

Homework assignments are due on every Thursday and will correspond to the sections covered in the previous week. For example, on Thursday, Sept 3, you are expected to turn in the assigned problems from material covered on the week of Aug 23-29, which

corresponds to sections 1.1-1.7. Assigned hand graded problems will be collected every Thursday during the recitation. Note that the last homework assignment is due on Friday, Dec 11, not on Thursday, Dec 10. The student should turn in the last homework assignment during the lecture.

Notice, however, that depending on the pace of the course, small adjustments to the schedule may have to be made, in which occasion the problems which are due may also change. An up-to-date schedule will be maintained on Webassign and the session webpage: <http://www.math.purdue.edu/~shao92/Blake%20-%2020262-133.htm>,

indicating which problems will be collected on each coming Thursday.

No homework assignment will be accepted after its due day. The students should be responsible for handing in homework assignments on time.

Calculators

Calculators will not be allowed on exams or quizzes. It is important that you learn to do simple manipulations by hand.

Academic Integrity

Copying, or in any way giving or receiving help, on quizzes and exams is not allowed. Students must abide by the full Purdue University policy on Academic Integrity. It is available at:

<http://www.purdue.edu/odos/osrr/academicintegritybrochure.php>

Attendance

The student who misses a class meeting is responsible for any assignments and/or announcements made. Office hours will not be utilized to re-teach material presented in class.

Students are expected to be present for every meeting of the classes in which they are enrolled. Only the instructor can excuse a student from a course requirement or responsibility. When conflicts or absences can be anticipated, such as for many University sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification to an instructor is not possible, the student should contact the instructor as soon as possible by email, or by contacting the

main office that offers the course. When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor's department because of circumstances beyond the student's control, and in cases of bereavement, the student or the student's representative should contact the Office of the Dean of Students.

Conflicts arising from personal travel plans or social obligations do not qualify as excused absences.

Accommodations for Students with Disabilities

If you have been certified by the Disability Resource Center (DRC) as eligible for academic adjustments on exams or quizzes, see <http://www.math.purdue.edu/ada> for exam and quiz procedures for your mathematics course, or go to MATH 242 for paper copies. In the event that you are waiting to be certified by the Disability Resource Center we encourage you to review our procedures prior to being certified. For all in-class accommodations, please see your instructor outside class hours, before or after class or during office hours, to share your Accommodation Memorandum for the current semester and discuss your accommodations as soon as possible.

Emergencies

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Here are ways to get information about changes in this course: by visiting the course web page indicated above, visiting your instructor's webpage, or by calling or emailing your instructor, see <http://www.math.purdue.edu/people/faculty/> for contact information.

Webassign

If you have enrolled in this class through Purdue Banner, you can login Webassign from <http://www.webassign.net/purdue/login.html>

by using your purdue careeer account information. An instruction to how to use Webassign can be found on the session webpage:

<http://www.math.purdue.edu/~shao92/Blake%20-%2020262-131.htm>

The following website also contains lots of useful information:

<http://intranet.math.purdue.edu/webassign>

You have a two-week grace period before you have to enter a WA access code or buy access online. (You will be prompted to do so after you login.)

You can either purchase the Purdue Edition (which comes with WA access code – one semester access only) at the Purdue University Bookstore or Follett's or you can buy the book and online access code separately. There is no e-book option.

After a two week grace period, the students must pay a non-refundable access fee.

You can ask questions on assignments by clicking Ask Your Teacher button in Webassign. I will sign on and respond on Tuesday and Thursday 7:00pm-7:30pm.

Tips for answering Webassign homework

(A) whenever possible, always enter exact expressions (not approximations from calculators), unless told otherwise by the question.

(B) for numerical answers, as a rule of thumb, always enter at least four decimal or four significant digits.

(C) Capital and small letter variables are different: Π (Pi), π (pi), Φ (Phi), ϕ (phi), Θ (Theta), θ (theta), etc.

(D) questions which prompt for the open or close brackets “(”, “)”, “[”, “]” are treated as True/False questions and hence allow only one chance.

Useful Resources

For a better idea of what will be on the final, see the following link to the past exam archive of MA 26200:

<http://www.math.purdue.edu/academic/courses/oldexams?course=MA26200>

If typically you can learn things only by seeing tons of examples, you should have a look at the textbooks "Schaum's outline of Differential Equations" and "Schaum's outline of Linear Algebra" (or one of their variants), which contains more than 1000 problems solved.

Class Schedule

This syllabus is subject to change.

Date	Sections	Webassign HW	Hand graded HW	HW due in class	Remarks
Aug 24	1.1, 1.2,1.3	p8: T/F 4,5,9; P 2,3,5— p18: P 20,22,36— p30: T/F 1,3; P 3,6,16,34	p8: 26— p18: 24— p30: 14		
Aug 26	1.4, 1.5	p40: T/F 3,7; P4,6,11,14,18,27— p47: T/F 3,6; P2,6,14	p40: 23		
Aug 27	Recitation				
Aug 28	1.6, 1.7	p55: T/F 2,4; P2,6,14,18,30— p65: T/F 5,6; P2,10	p56: 25— p65: 7		
Aug 31	1.8	p75: T/F 3,5,7; P12,18,26,30,38,50	p76: 56,61		
Sept 2	1.9	p89: T/F 3,6,9; P4,8,11,18,24,28	p89: 30,31		
Sept 3	Recitation			1.1-1.7	
Sept 4	1.11, 1.12	p103: P1,4,6,10,14— p108: P1,42	p103: 19— p108: 46		
Sept 9	2.1, 2.2	p118: P8,11,22— p130: T/F 5,7,8; P4,8,19	p118: 27— p131: 34		
Sept 10	Recitation			1.8, 1.9, 1.11,	

				1.12	
Sept 11	2.2, 2.3	p130: P16,17,27,42— p138: T/F 4	p131: P18— p138: P11		
Sept 14	2.4	p149: T/F 4,5,6,8,9; P3,6,7,20,22,25	p149: 11,13		
Sept 16	2.5	p159: T/F 2,5,6; P2,10,18,22	p159: 23		
Sept 17	Recitation			2.1-2.3	
Sept 18	2.5, 2.6	p170: T/F 2,5,6,7,9; P6,18,20	p159: 26,47— p170: 26		
Sept 21	N/A				Review Session for Chapters 1, 2
Sept 23	3.2	p209: T/F 1,2,3,5; P1,6,20,21,24,30,35	p209: 41,43,52,54		
Sept 24	Recitation			2.4-2.6	
Sept 25	3.3	p222: T/F 4,5,6,7; P7,9,15,17	p222: 20,21		
Sept 28	3.3	p222: P22,27,36,42,45	p222: 32,44		
Sept 30	4.2, 4.3	p249: T/F 2,3,6,7; P1,2,3,5,12— p257: P3,5,6,20	p249; 16— p257: 18,24		
Oct 1	Recitation			3.2-3.3(Sept 25)	
Oct 2	4.3, 4.4	p257: T/F1,2,5,7,8; P22— p265: T/F 1,3,8,10; P1,2,3,8	p265: 9,13,28		
Oct 5	4.5	p279: T/F 1,2,3,5,8; P7,8,14,30	p279: 32,36		
Oct 7	N/A				Review Session for Exam1
Oct 8	Recitation			3.3(Sept 28), 4.2-4.4	
Oct 9	N/A				Midterm

					Exam 1
Oct 14	4.6	p291: T/F 4,6,7,11; P3,4,8,12	p291: 6,17		
Oct 15	Recitation			4.5	
Oct 16	4.6, 4.8	p291: 19,23,28— p306: T/F 4,5; P8,10	p291: 24— p306: 12		
Oct 19	5.1	p351: T/F 2,4,5; P1,4,11,14,23b	p351: 29,30		
Oct 21	5.3	p368: T/F 1,2,3; P1,2,3,17	p368: 14		
Oct 22	Recitation			4.6, 4.8	
Oct 23	5.6	p398: T/F 2,3,4,5,7,9; P5,7,9,15,28 p	p398: 31,32		
Oct 26	5.7	p406: T/F 2,4,5,6; P1,3,5,7,19	p406: 29,33		
Oct 28	N/A				Review Session for Chapters 4,5
Oct 29	Recitation			5.1, 5.3, 5.6	
Oct 30	6.1	p458: T/F 3,7; P1,3,5,6,9,13	p459: 32,36		
Nov 2	6.1, 6.2	p458: P31— p468: T/F2,3,4,5,8	p459: 33		
Nov 4	6.2	p468: 17,19,27,35	p469: 26,37,39		
Nov 5	Recitation			5.7, 6.1(Oct 30)	
Nov 6	6.3	p480: T/F1,2,3,5,8	p480: 20,23		
Nov 9	6.3	p480 P1,3,4,17,19,21,26	p480: 29,31		
Nov 11	N/A				Review Session for

					Exam 2
Nov 12	Recitation			6.1(Nov 2),6.2, 6.3(Nov 6)	
Nov 13	N/A				Midterm Exam 2
Nov 16	6.5	p495: T/F 2,4,5,8,9; P1,2,3,4,5	p495: 16,21		
Nov 18	6.7	p512: P1,2,4,5,16	p512: 30		
Nov 19	Recitation			6.3(Nov 9)	
Nov 20	6.7	p512: P19,23,28,29	p512: 21		
Nov 23	6.9	p528: P1,3,9b,15,17	p528: 6,16		
Nov 30	7.1	p540: T/F 6; P1,3,9,15,17	p540: 7,19		
Dec 2	7.2	p545: T/F 2,4,5; P12	p545: 1,5,8		
Dec 3	Recitation			6.5, 6.7	
Dec 4	7.3	p551: P1,3,4	p552: 7		
Dec 7	7.4	p560: T/F 2,3,4,5; P1,3,17	p560: 20,22		
Dec 9	7.6	p576: T/F 3,4; P1,3,8	p576: 10		
Dec 10	Recitation				
Dec 11	N/A			6.9, 7.1-7.4, 7.6	Review Session for Final Exam