

Syllabus and Information Sheet
MATH 246H, Spring 2015, Sections 0201
Differential Equations for Scientists and Engineers

Instructor: Radu Balan, MTH 2308, phone x55492, or CSIC 4131, phone x51217

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Lectures: Tu, Th, 11:00am – 12.15pm, MATH 0303

Office hours: Thurs. 12:30pm-1:45pm in MATH 2308 or BY APPOINTMENT other time (TBD).

Tutoring Hours: see MTH 0301 for MATH 246 Tutoring schedule

Class Homepage:

<https://myelms.umd.edu/courses/1132888>

External webpage (less frequently updated):

<http://www2.math.umd.edu/~rvbalan/TEACHING/MATH246HSpring2015/index.html>

Course Description: This course is an introduction to ordinary differential equations. The course introduces the basic techniques for solving and/or analyzing first and second order differential equations, both linear and nonlinear, and systems of differential equations. The course will follow the online notes prepared by D. Lavermore & colleagues, and Chapters 1-10 and 12-14 of Hunt et al. The use of mathematical software system MATLAB is an integral and substantial part of the course.

Prerequisite: Minimum grade of C- in MATH 141. Credit only granted for: MATH 246 or MATH 341. For general honors students only.

EXAMS and QUIZZES

There will be *three* in-class exams (Thursdays 19th February, 2nd April, and Tuesday 5th May) and a *two-hour uniform final exam* (14th May). Their (optional) review sessions are tentatively scheduled as follows: Tuesdays, 17th February, 3:00pm - 4:30pm in TBD; 31st March, 3:00pm - 4:30pm in TBD; Thursday 30th April, 3:00pm - 4:30pm in TBD.

There will be up to *eleven short in-class quizzes* based on the homework. They are given at the beginning of the class period. They are short, so be on time! There are NO make-up quizzes. The best eight quiz scores count towards your course grade.

Homeworks are the problems embedded in the online lecture notes. They are not collected; however the material from homeworks may appear on the quizzes and exams.

No calculators, books, or notes may be used during these exams or quizzes. All items except pens, pencils, and erasers must be off the desktops.

At exams you are expected to sign the University Honor Pledge.

MATLAB PROJECTS

There are six MatLab projects worth 24 points each. Your best five scores count towards your course grade. Each Project assignment should be turned-in no later than its due date

by either: (i) electronically by email; (ii) bringing the print out to the class; (iii) bringing the print out during an office hour. If the University cancels class for any reason on the scheduled due date of a project then that project will be due on the first day that the lecture subsequently meets. Projects turned in late will be recorded, but may not be graded for full credit.

GRADING

Quizzes: The in-class quizzes will be worth 10 points each. Your eight best quiz scores will go toward your course grade. No make-up quizzes will be given.

In-Class Exams: The three in-class exams will be worth 100 points each. If the University closes on the day of a scheduled in-class exam, the exam will be given the next lecture time the class meets. You may appeal the score you receive on an exam by submitting your exam plus a note stating which problems you wish to have re-graded to Professor Balan within two weeks of the date the exam is given. Make-up tests for the in-class exams are permitted only if you present a legitimate and well-documented excuse.

Final Exam: The two-hour Final Exam will be worth 200 points. It will be based on the entire course, including material covered after the third in-class exam. It may also contain MATLAB problem(s). It will be common for all Math 246 sections. To take the make-up exam you must present a legitimate, well-documented excuse showing that for reasons beyond your control it was absolutely impossible for you to take the Final Exam. If the University closes on the day of a scheduled final exam, then it will be given whenever the University reschedules it.

In-class exams and the final exam are the Major Grading Events.

Your course grade will be based on the sum of your scores on

your three in-class exams (maximum of 100 points each)	300 points (about 43%)
your Final Exam (maximum of 200 points)	200 points (about 29%)
your eight best quiz scores (maximum of 10 points each)	80 points (about 11%)
your five best Matlab projects (maximum of 24 points each)	120 points (about 17%)

The maximum total score possible for the course is 700 points. The point cutoffs for course grades will be no higher than those set forth in the following table:

630 points (90%) for a grade of "A";
 560 points (80%) for a grade of "B";
 490 points (70%) for a grade of "C";
 420 points (60%) for a grade of "D".

The course grade of "I" will be awarded only if all the following conditions are met:

1. You have completed all but a small portion of the required work.
2. You have an average grade of ``C-" or better on the work completed.
3. You have a valid reason for not completing the course on time.
4. You agree to make up the material within a short period of time.
5. You request the incomplete no later than the day after the final exam.

TUTORING

Some free drop-in tutoring services appropriate for Math 246 students are listed below.

Math Tutoring Room

- o Mondays - Fridays, 8:00am - 4:50pm in MTH 0301

This service begins soon after the term begins and ends on the last day of classes. It is run by the Department of Mathematics and is located in the basement of the Mathematics Building.

Tutors will be scheduled for most hours, but maybe not all. Please check the tutoring schedule posted at <http://www-math.umd.edu/math-tutoring-schedule.html> to see when tutors are actually scheduled to be there. This schedule is subject to change.

Tutors are graduate students, and may therefore be your best source of help outside of office hours.

- ***MATLAB Tutoring for Math 246*** in the Parking Garage 2 Room 0504:

This service begins soon after the term begins and ends on the last day of classes. It is run by the Department of Mathematics, but is located in the Parking Garage 2 WAM Lab. The tutoring schedule should be posted at <http://www-math.umd.edu/matlab-tutoring-schedule.html>

Disabled Student Services (DSS): If you have a disability that might affect your performance on these timed exams, you may contact the [DSS office](#) in Susquehanna Hall. If they assess that you merit either private conditions and/or extra time then they will give you forms with which you must notify your instructors. This notification must be renewed for each course each semester. Because instructors must be notified of the DSS assessment at least one week before you use their service, you should arrange for it well in advance. Once I have been notified, you may arrange to take your exams at DSS with the extra time they indicate by giving me a "Test Authorization Form" one week prior to each time you plan to use their service. Your testing time at DSS must overlap the entire in-class exam time.

TEXTBOOKS AND OTHER RESOURCES

Required Resources

Principle Texts:

- Online lecture notes: link via your elms account.
- *Differential Equations with MATLAB* , Brian R. Hunt, Ronald L. Lipsman, John E. Osborn, and Jonathan M. Rosenberg, 2nd Edition J. Wiley and Sons, New York, 2005

MATLAB Computer Program:

- MATLAB Student Version.
This software is available in most OIT WAM labs, so you do not have to buy it.

Other Resources

- *Elementary Differential Equations* , William E. Boyce and Richard C. DiPrima, Ninth Edition J. Wiley and Sons, New York, 2009
- *A guide to MATLAB: for beginners and experienced users*, by Brian R. Hunt, Ronald L. Lipsman, Jonathan Rosenberg, [Cambridge University Press, 2006](#)
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Counseling Center

Counseling line: 301-314-7651

Location: Shoemaker Building.

Hours: Mon., Tue., Thur., Fri.: 8:30am-4:30pm

Wed.: 8:30am-9:00pm