

18.03: Differential Equations

Spring, 2012

Staff: Lecturer: Professor Haynes Miller

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Office hours: Wednesdays, 3:15–5:15

Course Administrator: Joel Lewis

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Home page: <http://math.mit.edu/classes/18.03/>. Here you will find information about this course, including this syllabus, recitation leaders' office hours, problem sets and solutions, recitation problems and solutions, practice exams, and Professor Miller's own ideas of what he said or at least what he wanted to say in lecture. You will also find a link to a Stellar site, where you will be able to access your grades and adjust your recitation assignment.

Grading: You should plan to achieve a real mastery of the **Ten Essential 18.03 Skills**, <http://math.mit.edu/classes/18.03/skills.pdf>. These are the skills courses at MIT with 18.03 as a prerequisite will expect you to know, and the faculty teaching these next courses are aware of this list.

The final grade will be based on a cumulative total of 800 points computed as follows:

Eight Homework Assignments	200
Three Hour Exams	300
One Final Exam	300

Hour Exams: Hour exams will be held during the lecture hours, on Wednesdays, February 29, March 21, and April 25. Examination rooms will be announced in lecture and on the web. If you must miss an exam, contact Joel Lewis *before the exam*.

Final Exam: There will be a three hour comprehensive examination, during the Final Exam Period, at a time and place to be announced in mid February.

Lectures: Monday, Wednesday, Friday at 1:00 and 2:00 in 10-250.

The lecture period will be used to help you gain expertise in constructing, solving, and interpreting differential equations. You must come to lecture prepared to participate actively. At the first recitation you will be given a set of flashcards. Bring these with you to each lecture. (Extras will be available in lecture in case of need.) You will use them to announce your answer to questions posed occasionally in the lecture. In case of divided opinions a discussion will follow. As a further element of your active participation in this class, you will occasionally be asked to spend a minute responding to a short feedback question at the end of the lecture. Despite the large size of this class, I will listen and respond to this feedback.

Texts: Edwards and Penney, *Elementary Differential Equations with Boundary Value Problems*, Sixth Edition.

18.03: Differential Equations Notes & Exercises, (unchanged since the Spring, 2005, edition) available in sections through the course website.

18.03 Supplementary Notes, available in sections through the course website.

Recitations: These small groups will meet twice a week, on Tuesday and Thursday, to discuss and gain experience with the course material. Go to the section to which you have been assigned. To change sections, visit <http://stellar.mit.edu/S/course/18/sp12/18.03/>. Even more than the lectures, the recitations will require your active participation. Come prepared. Your recitation leader may begin by asking for questions, so be ready if you have them. He or she may then hand out problems for you to work on in small groups. These problems are also available on the website, and soon after recitation you can see solutions there too. Ask questions early and often. Recitation leaders' office hours are listed on the course website.

Homework: There are nine problem sets, each graded out of 100 points. We will drop the lowest problem set grade, leaving eight contributing to the total. Assignments will be due on Fridays by 12:45 in the appropriate box in the doorway at 2-106. Each homework assignment has two parts: a first part drawn from the book or notes, and a second part consisting of problems which will be handed out and available on the web. Both parts will be keyed closely to the lectures, and you should form the habit of doing the relevant problems between successive lectures and not try to do the whole set the night before they are due. Your recitation leader should have the graded problems sets available for you at recitation on the Tuesday after they have been turned in. Solutions will be available on the website on the afternoon of the day they are due, so **late homework cannot be accepted**.

Collaboration is encouraged in this course, but you must follow the rules. If you do your homework in a group, be sure it works to your advantage rather than against you. Good grades for homework you have not thought through will translate to poor grades on exams.

You must turn in your own writeups of all problems, and, if you do collaborate, you must write on your solution sheet the names of the students you worked with. Failure to do so constitutes plagiarism.

Mathematics Learning Center: M– Θ , 3:00–5:00 and 7:30–9:30 PM, Room 2-102.

<http://math.mit.edu/learningcenter/>. This is staffed by experienced undergraduates. Extra staff is added before hour exams. This is a good place to go to work on homework.

Piazza is a popular proprietary application with which you can start or join threaded discussions about course material. It will be monitored by recitation leaders. If registered for the course you should be enrolled; go to <http://piazza.com/class#spring2012/1803> if not. Don't abuse this useful service!

Crosslinks is a wiki designed to provide links between undergraduate MIT subjects. Feel free to use <https://crosslinks.mit.edu/>, and to contribute to it!

Disability accomodation. If you have a disability accomodation letter from SDS, please speak with Galina in the MAS 2-108 galina@math.mit.edu to make arrangements.