

MITx

6.002x – Circuits and Electronics

General Information

Prerequisites: In order to succeed in this course, students must have taken an Advanced Placement (AP) level physics course in electricity and magnetism. Students must know basic calculus and linear algebra, and have some background in differential equations.

Course Overview: The course is organized by weeks. Unless indicated otherwise, to keep pace with this inaugural version of the class, you are expected to complete by the end of each week all the work assigned at the beginning of that week. Homeworks and labs must be completed by the Friday of the week following the one in which they are posted. Weekly coursework includes:

- Interactive video sequences (known as *sequences* for short).
- Readings from the textbook
- Homework
- Online laboratories
- Optional tutorials

The course will also have a midterm exam and a final exam. If you successfully complete the course, you will receive an electronic MITx certificate indicating your grade.

Interactive video sequences: There will generally be two sequences per week. Each sequence includes a succession of videos and online exercises. You are strongly encouraged to watch the videos and complete all the exercises. Although not encouraged, you are able to skip to the next item in the sequence without completing a previous item.

Although you can submit the answers to exercises to be checked, exercises will not be part of your grade.

Textbook: The course textbook is Foundations of Analog and Digital Electronic Circuits by Agarwal and Lang, Elsevier, 2005. It may be purchased from Amazon. While recommended, the book is not required: relevant sections will be provided electronically as part of the online course for personal use in connection with this course only. The Course-at-a-glance handout under the Course Info tab shows the textbook readings for each week. Furthermore, there is a link to the relevant section of the book below each video.

The underlined readings are particularly important as they provide important intuitive approaches to solving circuits problems.

Homework: Homework will be issued during each week, and must be completed by the Friday of the following week.

Late homework will not be accepted. However, total homework grade will be based on the best ten out of twelve individual homework grades. Thus, two homework assignments may be missed without a grade penalty.

According to the honor code you have signed, you are not allowed to post answers to homework problems.

Labs: Like homeworks, the labs will be issued during each week, and must be completed by the Friday of the following week.

Late labs will not be accepted. However, your total lab grade will be based on the best ten out of twelve individual lab grades. Thus, two lab assignments may be missed without a grade penalty.

Tutorials: Optional tutorials showing how to solve 6.002x problems or labs will be available.

Midterm and Final Exam: 6.002x will include a midterm and a final exam. We will announce with the exams the deadline by which you must complete them (typically, 1 or 2 days later).

In this prototype version of 6.002x, MITx will not require that you be tested in a testing center or otherwise have your identity certified.

You are welcome and encouraged to collaborate with others on the exercises, homeworks and labs. However, the midterm and the final exams must be worked on your own. In addition, once you view an exam, you must work on your own till you have submitted all your work, and do not discuss the exam until the deadline for exam submissions is past. Also, you are not allowed to post answers to exam problems.

Although the exams will be open book, we encourage you to create a couple of sheets of notes for each exam. These notes will not only help you prepare, but they will also serve as a convenient reference during the exam.

You may also use a calculator.

Exercises, homeworks and labs are critical to learning the material and for doing well on the exams. *With a high likelihood, one or more of the exercise, homework or lab problems will appear in each of the exams.*

Grading: Grades will be based on the following weighting: *homeworks 15%, labs 15%, midterm 30%, and final exam 40%*. Each of the homeworks and labs carries equal weight.