Differential Equations – Spring Semester 2016
Section 10 Syllabus

TR 10:30 – 11:45 CLBN 302

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Basic Information

The textbook is the 10th edition of *Elementary Differential Equations and Boundary Value Problems* by William Boyce and Richard DiPrima. We shall cover much of Chapter 1 (Introduction to Differential Equations), Chapter 2 (First-Order Differential Equations), Chapter 3 (Second-Order Linear Differential Equations), Chapter 4 (Higher-Order Linear Differential Equations), Chapter 5 (Series Solutions of Second-Order Linear Differential Equations), and Chapter 6 (The Laplace Transform).

Differential Equations is based on Calculus and so to succeed in the class you will need a good foundation in that subject. In addition to basic differentiation and integration skills, it would be helpful to review implicit differentiation, the Fundamental Theorem of Calculus, power series (for Chapter 5), and improper integrals (mostly for Chapter 6). Partial derivatives will occasionally be needed in this class. This topic is covered in Calculus III, so if you came to this class directly from Calculus II then you should take a look at Section 14.3 in Rogawski's Calculus book (or the corresponding section in another calculus book) or consult an online source, and then ask me if you have any questions. (The Wikipedia page on partial derivatives is accurate but pretty compressed. The page at Paul's Online Math Notes is also accurate and has more examples. There are many other good choices. I don't recommend the introductory Khan Academy video on this topic – it rambles too much through other topics before getting to the point.)

Grades

Your grade in this class will be based on your performance on three preliminary exams, a final exam, and homework. The weights of these categories are as follows:

PRELIMINARY EXAMS	18% EACH
FINAL EXAM	25%
HOMEWORK	21%

The dates of the preliminary exams and the due dates for the homework assignments are shown on the course schedule. The final exam will be held in NCLB 302 on Thursday, May 5, from

A total score of at least 90% will ensure an A, a score of at least 80% will ensure at least a B, a score of at least 70% will ensure at least a C, and a score of at least 60% will ensure at least a D.

Homework

Each homework assignment will have two parts of equal value. Part 1 will consist of some problems taken from the textbook. These problems will not be graded, but simply counted, and you will receive a grade reflecting the proportion of the assigned problems that you made a serious attempt to solve. Note that the answers to these problems are found in the back of the textbook, so you will always know whether you got the correct answer. If you did not then it is your responsibility to ask me (or to consult another source) about the problem to find out what went wrong. Part 2 will consist of a smaller number of similar problems. These will be graded in detail and you will receive a grade based on the correctness of your solutions.

The two parts should be submitted separately. In Part 1, the solutions should be clearly labeled with the section and problem number (for example, 1.2.12 for Problem 12 from Section 1.2), and the solutions should be presented in order. In Part 2, you should record your solutions on the assignment sheet. In both parts, your work must be legible and well organized. To strike out work that you do not want to be graded, draw a single diagonal line through it rather than attempting to obscure it completely.

Calculators and Other Technology

You will require a scientific or graphing calculator for this class, and will be permitted to use this calculator during quizzes and exams. The Mathematics Department has graphing calculators available for check out to students who are enrolled in mathematics courses. You will not be permitted to use any device that can establish a connection to a cellular or wireless network during quizzes and exams. This means, for example, that you cannot use a cellphone calculator app or a tablet computer at these times.

What I'm Looking for When I Read Your Work

Part of my job in this class is to give you feedback to assist you in making progress. Another part is to assess your knowledge and skills so that I can eventually assign you a grade. I'm not interested in the final answers to the problems; I can already solve them for myself. What I'm interested in is how you arrived at your answer and whether that process demonstrates a sound grasp of the skills that you are supposed to have and an accurate understanding of the underlying concepts. If these things are taken care of then the final answer will be correct as a matter of course. Consequently, always show your work in sufficient detail that I can find what I'm looking for, and don't try asking for more credit because "the answer is right!" Think about what you're writing and make sure that you really mean it. Don't, for example, use the symbol "=" to mean "and the next step is." That symbol means several things – "is equal to," "should be equal to," "is defined as" – and you should only use it when you mean one of those things. To express things that don't fit easily into formulas, consider using words, sentences even, as well as pictures, tables, and whatever else seems likely to be effective.

Missed Work

The Mathematics Department suggests a policy on missed work, which I shall be following in this class. Here it is in full:

(A) Every student shall be offered reasonable accommodation in the event that he or she misses a major assessment activity for a valid and documented reason.

(B) Appropriate documentation shall be provided by the student in a timely fashion to support his or her request for accommodation.

(C) Major assessment activities are those such that a zero on that activity could reasonably be foreseen to impact the student's grade substantially; this category includes, but is not limited to, exams.

(D) Valid reasons include official University activities, activities associated with military service, illness, family emergencies, mandatory court appearances, and any other events of comparable gravity.

(E) Reasonable accommodation means that the student will be given the opportunity to earn a grade on the assessment activity that is based on criteria as similar as possible to those used to grade his or her classmates. This opportunity should normally be made available in a timely fashion.

What all this means is that if you have to miss a quiz or exam for a *serious* reason, *and you are able to provide acceptable documentation verifying that reason*, then you will be allowed to make up the missed work. If you have a scheduled University activity then it is normally best to do this beforehand. I try to be flexible and fair, so if you encounter an unusual circumstance then it is worth at least asking about make-up work, although I might say no.

D2L and Email

I use OSU's online classroom (D2L) to post important information about the class. I suggest that you add a little basic information to your D2L profile, particularly if you are interested in studying with other students in the class. I use email to contact individual students and the class as a whole. This means that you must check your OSU email regularly. If you prefer to use another email address then you should arrange to have your OSU email forwarded to that address.

Miscellaneous Information

You should read the syllabus attachment for Spring 2016, which I shall post on D2L. This is a document that outlines some of the general academic policies of the University, as well as listing important dates. You are subject to the University's policy on academic integrity. Information about this policy may be reached from the Division of Academic Affairs web page at http://academicaffairs.okstate.edu.