

Professor: David McClendon (2046 ASC, phone x2574 (231-591-2574 off campus), hours MW 9-10, MW 12-1 or by appointment, email: mcclend2@ferris.edu)

Lectures: TR 12:00-1:15 in STR 134. You can connect virtually to the lectures through Canvas (see below) or directly at <http://zoom.us/j/98522530056>.

My MATH 430 web page: <http://mcclendonmath.com/430.html>

Canvas: <http://ferris.instructure.com/courses/15707>

Prerequisites: The only actual mathematical knowledge required is MATH 220 (single-variable calculus). More useful than having taken any particular math course is some familiarity with the language of sets and functions. As such, the official prerequisites are MATH 320 and MATH 324, but for strong students, I'll waive these.

Required text: There is none; I will provide lecture notes to you as we go. As always, I recommend bringing colored pens or pencils to class.

Course material: There are three main goals in an undergraduate real analysis course:

1. rigorously derive the theory of elementary calculus (this is centered on making the notion of "limit" precise, but includes proving the Intermediate Value Theorem, Mean Value Theorem, and the Fundamental Theorem of Calculus, among other things);
2. study the properties of the real numbers and properties of exotic functions; and
3. learn how to write certain kinds of proofs, in particular a certain kind of argument which I call an " ϵ -proof".

Learning outcomes: At the end of the semester, it is my hope and expectation that students will be able to solve problems and write rigorous proofs involving:

1. the fundamental properties of the real numbers;
2. limits (both limits of sequences and limits of real-valued functions);
3. the continuity and/or differentiability of real-valued functions; and
4. the Riemann integral of a real-valued function.

Grading policy: Homework: 70%. Attendance and participation (either virtual or physical): 30%. Grades will be curved at the end of the semester, but 90% will be no worse than A-, 80% will be no worse than B-, etc.

Attendance policy: I have no formal attendance policy (other than that we'll do some things in class, and if you are repeatedly absent I'll notice). That said, I have taught many math courses, and **nothing** is more correlated with strong performance in my classes than attendance in lectures

Homework: Mathematics cannot be learned solely by watching other people present solutions to problems or by reading examples and proofs in the text. You have to **do** problems, and you have to **write** proofs. This is especially true in MATH 430. As

such, homework is the most important part of your grade. Exercises for you to do will be periodically assigned in class.

It is normal to have no clue how to approach some of the homework exercises. Come to my office or send me an email asking me how to proceed; some of your best learning might take place in this setting.

You can earn up to half the points deducted from any homework exercise by re-submitting the exercise within a week of receiving your initial grade.

Students with disabilities who require reasonable accommodations to fully participate in course activities or meet course requirements should register with the Educational Counseling and Disability Services office (x3057, ecds@ferris.edu). While ECDS will send me a "VISA" outlining the accommodations to make for you, I would appreciate it if you could contact me immediately for assistance with any necessary classroom accommodations.

Academic dishonesty: Papers will be monitored for "magic answers". Issues with academic dishonesty are taken very seriously, will almost always result in an F for the class, and will be referred to the Office of Student Conduct.