MTH 320, Section 003: Analysis I

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Course Webpage: www.math.msu.edu/~hendricks/MTH_320.html Most course content can be found both here and on D2L.

Location and Time: MWF 12:40-1:30 in A336 Wells Hall.

Content: This course is a rigorous introduction to analysis on the real line, and covers sequences, limits, continuity, convergence of functions, and derivatives. It will focus on building skills for reading and writing proofs.

Textbook: K. A. Ross, *Elementary Analysis: The Theory of Calculus.* Springer-Verlag 1980. **Second Edition.** The textbook is available for free through MSU libraries at https://link-springer-com.proxy1.cl.msu.edu/book/10.1007/978-1-4614-6271-2

Prerequisites: (MTH 133 or MTH 153H or LB 119) and (MTH 299 or MTH 317H or approval of department).

Homework: Homework will be assigned weekly and due at the beginning of Friday's lecture. There will be thirteen homeworks. (There will not be a homework due the week of Thanksgiving.) **No late homework will be accepted. Homework will not be accepted electronically.** However, your lowest two homework scores will be dropped when computing your grade.

Typically three homework problems will be graded carefully, and some points will be given for completeness of the rest of the assignment. Full homework solutions will be posted online promptly.

You are encouraged to work in groups on your homework – this is generally beneficial to your understanding and helps you learn how to communicate clearly about mathematics. However, you must write up all solutions yourself. Moreover, since crediting your collaborators is an important element of academic ethics, you should write down with whom you worked at the top of each assignment. You must also cite any sources you use other than the lecture or the textbook (other textbooks, a blog about analysis, etc.)

Quizzes: There will be two short in class quizzes at the beginning of lecture on **Monday, September 18** and **Monday, October 30**. There will not be any make-up quizzes except in extreme and documented circumstances.

Exams: There will be two in-class midterms on **Monday, October 9** and **Monday, November 20**. There will also be a final exam **Tuesday, December 12, 12:45-2:45 p.m.** There will be not be any make-up exams except in extreme and documented circumstances. Note that department policy forbids early final exams for any reason.

Grading: Grades will be computed as follows:

- Homework: 20%
- Quizzes 1 and 2: 2.5% each
- Midterms 1 & 2: 20% each
- Final: 35%

A reasonable curve will be applied to the composite numerical scores. In past iterations of this class, typically about half of the class has received a grade of 3.5 or above.

Schedule: We will cover Sections 1-4, 7-12, 14-15, 17-20, 23-25, and 28-30 of Ross, essentially linearly. Precise reading for each week will be provided as the course goes on. You will get the most out of lecture if you do the reading *before* coming to class.