Math 387: Analysis I — Section 1 — Spring 2017
MW 2:00-2:50 (Leo 256); R 2:00-2:50 (Leo 113A)

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Office Hours: MWR Noon ; and by Appointment

Textbook: Lebl, Jiří. *Basic Analysis: Introduction to Real Analysis*, December 17, 2014, `http://www.jirka.org/ra/`.

Course Description: A rigorous treatment of differential calculus of one variable: sequences, limits, continuity, the derivative, the Riemann integral. Math 387 is a 3 credit course. This course meets 3 hours per week. Prerequisites: MATH 201 and MATH 213 or MATH 285 or MATH 287 and MATH 243.

Course announcements and resources will be regularly posted online at `http://home.manhattan.edu/~andrew.greene/387/`.

Attendance: Attendance is mandatory. Four or more unexcused absences must be reported to the dean of your school. If you are late, please notify the instructor at the end of the class.

Grading: In addition to a cumulative final exam, there will be three midterm exams, period LaTeX assignments, and (suggested but not graded) weekly homework problems.

- LaTeX Problems: 20%
- Midterm Exams: 60% (20% each)
- Final Exam: 20%

Notes: Midterm grades are due March 3rd. They will not appear on your transcript. The last day to withdraw from a course with a "W" is April 18th.

Homework:

There will be homework problems suggest on a weekly basis. They will be individually assigned to be written up in LaTeX in `https://cloud.sagemath.com` and due Wednesdays by 5PM.

Exams: There will be three in-class midterm exams. Tentative dates and coverage may be found on `http://home.manhattan.edu/~andrew.greene/387/`. The final exam will be cumulative, and will be held on the day designated by the Registrar's Office.

Extra Help: It is imperative that you seek extra help as soon as possible if you need it. You can always come to my office hours, however, please do not feel restricted to those times. If you see that I'm in my office, feel free to stop by and ask questions. You can also set up an appointment with me outside of scheduled office hours.

Make-Up Policy: *No make-ups will be granted unless in the case of an emergency.* In such cases you need to notify the instructor and provide proper documentation detailing the emergency in

order to receive permission to have a make-up.

Special Accommodations: Please notify the instructor as soon as possible if you have commitments as an athlete or other special needs. Students with special needs should bring appropriate documentation to the Specialized Resource Center, Miguel 300, `http://manhattan.edu/academics/specialized-resource-center`, to obtain an Academic Adjustment/Auxiliary Aid form. Bring the completed form to me as soon as possible, and together we will decide on how best to fulfill the adjustments and/or aids listed on the form. Student athletes should bring their event schedules to me as soon as possible.

Calculators: You will not need a calculator in this course. No electronic devices, including cell phones, may be used for any reason during an exam. If you must use the restroom during an exam, you must place your phone on your desk while you are gone.

Academic Integrity: Recall that as students of Manhattan College, you have each signed The Manhattan College Honor Pledge as a part of the Honor Code:

> As a Manhattan College student, I will not lie, cheat, or steal in my academic endeavors, nor will I accept the actions of those who do. I will conduct myself responsibly and honorably in all my activities as a Manhattan College student. I am accountable to the Manhattan College community and dedicate myself to a life of honor.

Whenever you put your name on work to be handed in for grading in this class, you are reaffirming the above pledge—you are certifying that the work is your own, and that you have not violated the Honor Code in any way while doing the work. Students who violate the Honor Code are subject to various sanctions, including suspension or expulsion from Manhattan College. Violations of the Honor Code include, but are not limited to, cheating, plagiarism, fabrication, and other forms of academic misconduct. Please see the Manhattan College Community Standards, pp 45-47, for specific examples of the above.

In particular, you may not use, in whole or in part, any fragment of text or LaTeX code written by someone else or obtained from an internet source. Collaboration, as opposed to mere copying, is a different matter. Everyone in the sciences collaborates extensively, and I urge you to do so as well; it will invariably enhance your understanding and hence the quality of your work. Here the measure of integrity is that *you explicitly credit everyone you worked with.*

In addition to collaborating, it is common to consult other sources, either other authorities (e.g. other professors), or text or on-line resources, when you are struggling to understand things. This is also entirely appropriate, with the provisos of the previous items: (1) You may not simply copy material, and (2) you must explicitly credit every source you have used. For texts, this means titles, authors, and page references. For internet sources, this means specific URL's and further navigation information if is is needed to locate the material you consulted.

The absolute prohibition on copying and yet the encouragement for collaboration and consultation requires an additional comment. It is fine to discuss problems with other students and professors, and it is fine to consult mathematical works in search of insights. But what you have to do with the results of these interactions is to digest the information you have obtained and give your own personal account of it. The write-up you submit must be yours alone. The fact that you have processed the material you obtained and have expressed and hopefully elaborated on the results in your own words is what makes these collaborations both worthwhile learning experiences and acceptable submissions in the course.

Course Learning Outcomes: By the conclusion of this course, the student will

- understand the structure of the real number system;
- be able to work with metric spaces;
- understand the concepts of completeness, compactness, and connectedness;
- be able to prove basic results on limits, continuity, differentiation, and integration;
- understand the theoretical foundations of calculus.

Good Luck!