Math 312H Section 1 - Spring 2016
HONORS CONCEPTS OF REAL ANALYSIS

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Office hours (subject to change): Monday 4:30 - 6 PM
                                      Tuesday 5 - 6:30 PM

Please, email if you need to reach the Instructor outside of class or office hours.

Class meets: M W F 10:10 AM - 11:00 PM in 113 MCALLISTER (Sched. # 597391)

ONLINE COURSE MANAGEMENT: We will use CANVAS, Penn State new Course Management System. You can access CANVAS via ANGEL or directly at:
https://psu.instructure.com/.

COURSE DESCRIPTION: An introduction to rigorous analytic proofs involving properties of real numbers, continuity, differentiation, integration, and infinite sequences and series.

PREREQUISITES: You MUST have completed Math 141 to register.

We will review Chapter I on properties of Real Numbers and cover Chapters II on Sequences, III on Series, VI on Continuity, and V on Limits as time permits. We may skip some sections as needed.

TOPICS: The aim of the course is to introduce you to Mathematics with proofs. We will study the basic concepts of Analysis and learn how to write a rigorous proof. The concepts we will learn are very important, but it is more important to understand how to read and write a proof correctly. This skill is useful outside of Mathematics as well. A detailed list of topics will be available on the course web page and/or CANVAS as the course progresses.

COURSE FORMAT: There are three 50-minute lectures each week.

GRADING: The grade for the course is based on a total of 500 points, divided as follows:
Midterms: 100 points each  
Final Exam: 150 points  
Homework: 70 points  
Quizzes: 30 points  
Final Project: 50 points

Grading will follow a ten-point base (i.e., 90-100% is A, A-, etc). Your final score may be curved. Grades will be available through CANVAS.

Note: Your grade will be based EXCLUSIVELY on the midterms, final examinations, homework/quizzes, and the final project. There is no “extra-credit” work.

EXAMS/QUIZZES: There will be TWO MIDTERM EXAMS and a COMPREHENSIVE FINAL EXAMINATION. The midterms will consist of two 50-minute, in-class exams, scheduled for Wednesday February 10, 2016 and Wednesday March 16, 2016 (subject to change). The final exam is scheduled for final exam week, May 2-6, 2016. Resolving conflicts with a final exam is responsibility of the students. Conflicts must be filed with the Registrar’s office. You should not plan to leave University Park before Saturday May 7. THERE WILL BE NO MAKE-UP EXAMS except for valid and documented reasons, such as illness. Make-up exams need to be requested IN ADVANCE. Personal business such as travel, employment, weddings, graduations, or attendance at public events such as concerts, sporting events, etc. are not valid excuses. If a student requests a make-up exam, but cannot document a valid reason, 20% of his/her grade will be automatically deducted.

There will be three quizzes in class, approximately half a class period long, one before each of the examinations. Quizzes will be based on the homework. All exams policies apply to quizzes as well, in particular regarding make-up quizzes.

HOMEWORK: There will be weekly homework assignments consisting in problems usually taken from the book. Homework assignments and solutions will be available through CANVAS. Homework will be assigned usually each WEDNESDAY and collected the following Wednesday. Homework is due IN PERSON IN CLASS when due. NO LATE HOMEWORK will be accepted for whatever reasons (including illness). Your two lowest homework scores will be dropped.

FINAL PROJECT: Each student will choose a final project from a list, which will be available in the second half of the course, and return a written report at a specified date. The projects will typically consist in longer, more complex homework assignments. As part of learning how to write a mathematical proof, you will be required to type your report using a freely available scientific typesetting program, called \LaTeX. One class period will be devoted to introducing you to \LaTeX.

COURSE SPECIFIC POLICIES: You MAY NOT use calculators, personal notes, or the textbook and NO COLLABORATION is allowed during examinations.
You MAY (and are encouraged to) collaborate on the homework, but each student must turn in individually written solutions. The homework must be LEGIBLE, STAPLED together, and must BEAR THE SECTION NUMBER, DATE, AND ASSIGNMENT NUMBER.

Attendance is not required for this course, but strongly encouraged. If you miss class, you are responsible for materials due, concepts covered, and assignments given. It will NOT BE TOLERATED that students arrive late, leave class early, or disrupt class in any way. I will make all efforts to start and finish class on time. Please, discuss any logistic problem with me.

Classroom seating: you may choose any seat you like in the classroom, but you are asked to keep the same seating throughout the semester.

Cell Phones must be TURNED OFF during ALL course activities. ANY electronic device (phones, ipods, ipads, computers, etc) used in class or that disturbs class activities, except when allowed by the instructor, will be CONFISCATED until the end of the class period.

You are required to carefully read and understand this syllabus. Occasional changes in the syllabus or schedule will be available on the Instructor’s web page, or through CANVAS, or announced in class.

ACADEMIC INTEGRITY: All Penn State policies regarding ethics and integrity apply to this course. For more information, see:
http://www.science.psu.edu/academic/Integrity/index.html

DISABILITIES: Penn State welcomes students with disabilities into the University’s educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services Web site at http://equity.psu.edu/ods/. In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see the documentation guidelines at http://equity.psu.edu/ods/guidelines/documentation-guidelines). If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact ODS and request academic adjustment letters at the beginning of each semester.