

- CLASS: MWF: 11:00 am – 11:50 am; MA 312; CRN: 74778
- MOODLE: <https://moodle.umt.edu/course/view.php?id=28515>  
This site will contain all information on this sheet plus more. Homework assignments and other information pertinent to this course (such as office hours) will be posted at this webpage, which will be updated frequently, so you should visit it regularly.
- INSTRUCTOR: Karel Stroethoff  
OFFICE: MA 307;  
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OFFICE HOURS: To be announced (see moodle page)
- THE COURSE: Functional Analysis, developed in the first part of the 20<sup>th</sup> century, brings together various areas of application into one model that draws its axioms from (linear) algebra and topology. In this course we will survey some of the tools of this abstract mathematical discipline, paying attention to various applications. I am planning to offer a sequel to the course during Spring Semester as M 564 — Functional Analysis II.
- TEXT: The lecture notes and handouts will be the official textbook for the course.
- PREREQUISITES: Prerequisites for the course will be kept to a minimum: a course in Linear Algebra and an undergraduate Analysis course should suffice. The topology and real analysis necessary for this course will be developed as needed. One of the reasons for not adapting a textbook, is to have maximum flexibility with regard to the level of the course. I will try to teach the course at a level appropriate for all enrolled in the course.
- TOPICS: TOPICS: In addition to the usual theory (normed linear spaces, linear functionals, separation theorems, topological linear spaces, weak topologies, dualities), I will make an effort to discuss applications from various areas of mathematics. If the course continues through Spring Semester, we will cover more of the usual material (Hilbert space theory, operator theory, Banach algebras,  $C^*$ -algebras), and students will then be given projects to study special topics.
- IMPORTANT DATES: Aug 26: Instruction begins  
Sep 2: Labor Day Holiday, no class  
Nov 11: Veteran's Day Holiday, no class  
Nov 27–29: Thanksgiving Vacation  
Dec 9–13: Final Exam Week
- GRADING: Homework problems will be assigned regularly. The course grade will be based on these assignments.