A. Course Description

Credits: 4

Prerequisites: MATH 211 Calculus II

Corequisites: None

This is an introductory course in real analysis. Starting with a rigorous look at the laws of logic and how these laws are used in structuring mathematical arguments, this course develops the topological structure of real numbers. Topics include limits, sequences, series and continuity. The main goal of the course is to teach students how to read and write mathematical proofs.

B. Course Effective Dates: 01/20/2004 - 12/16/2006 01/20/2004 - Present

C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Understand the axiomatic development of number sets.
2. Understand the logical construct of a mathematical proof.
3. Understand and utilize the basic topology of the real numbers.
4. Understand the rigorous development of the calculus, including the theory of limits and differentiation, and the Mean Value Theorem

E. Learning Outcomes (MN Transfer Curriculum)

Goal 04 - Mathematical/Logical Reasoning
1. Apply higher-order problem-solving and/or modeling strategies.
2. Clearly express mathematical/logical ideas in writing.
3. Illustrate historical and contemporary applications of mathematical/logical systems.
4. Explain what constitutes a valid mathematical/logical argument(proof).

Goal LS - Upper Division Liberal Studies
None

G. Special Information

Note: Students whose prerequisites are not identified by the system would contact the Math and Statistics Department for an override at MATH@metrostate.edu. First day attendance required except by instructor permission.