Minnesota State University Moorhead

MATH 361: Intermediate Analysis I

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites: MATH 323 and MATH 310

Corequisites: None

MnTC Goals: None

A rigorous treatment of concepts of calculus and foundations of mathematics including logic and sets, Bolzano-Weierstrass Theorem, limits, Heine-Borel Theorem, continuity, and derivative.

B. COURSE EFFECTIVE DATES: 06/01/1995 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Sets and the real numbers
2. Sequences and their limits
3. Continuity of functions and Intermediate Value Theorem
4. Open, closed and compact sets
5. Differentiability
6. Rolle¿s Theorem and Mean Value Theorem
7. L¿Hospital¿s Rule

D. LEARNING OUTCOMES (General)

1. Demonstrate Analytic Proof Techniques including and proofs
2. Understand sequences and limiting behavior thereof
3. Understand limiting behavior of functions at a point
4. Understand the underpinnings of continuity and differentiability
5. Construct coherent mathematical proofs

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted