



**Catalog Description:**

Concepts of Calculus for Middle School Math teachers.

**Prerequisite:**

A grade of C- or above in 1165, or credit for 1164 or 110; and enrollment in Middle Childhood Education major or pre-major with Math as area of concentration.

**Exclusions:**

Not open to students with credit for 111.

**Purpose of Course:**

The purpose of the course is to prepare teachers of middle school students. In particular, it intends to deepen and extend the prospective teachers' content knowledge of the mathematics and mathematical reasoning that they will teach as well as their ability to reason with and communicate that knowledge.

**Follow-up Courses:**

Math 2168

**Text:**

Under Consideration.

Optional text: *Calculus Connections: Mathematics for Middle School Teachers*. By Asma Harcharras and Dorina Mitrea (2007). Published by Prentice Hall. ISBN: 0-13-144923-0

Supplementary Text: Course Notes

**Topics List:**

1. Rates described pictorially, in writing, and with symbols.
2. Informal and formal measurement of (instantaneous) rates and their connection to middle school mathematics.
3. Informal and formal measurement of (accumulated) areas and their connection to middle school mathematics.
4. The Fundamental Theorem of Calculus.
5. Applications of differential calculus.
6. Applications of integral calculus.