I. Course Title: Methods of Teaching Secondary School Mathematics

II. Course Prefix/Number: MATH 350

III. Credit Hours: 3.0

IV. Prerequisite(s): Math 331 or permission of the instructor.

V. Catalog Description:
This course is designed to provide the student with methods and techniques for teaching mathematics at the secondary school level along with a study of current National and Colorado State Standards for secondary school mathematics. Techniques for assessing student knowledge and ways of integrating mathematics with other disciplines will also be covered.

VI. Curricular Relationships:
This course is required of all mathematics majors seeking secondary licensure. The course addresses the Colorado Performance-Based Standards for Colorado Teachers numbers 1.3, 2 (all bullets), 3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 4 (all bullets, mathematics content), 7.1, 7.2, 7.3. This course also enhances content knowledge in the following state model content standards areas of mathematics: 1, 2, and 6.

VII. Student Learning Outcomes:
• Students will be able to list and describe the current National and Colorado State Standards for Secondary Mathematics.
• Students will be able to demonstrate appropriate use of popular tools used in secondary schools to teach various skills.
• Students will be able to read and write mathematically.
• Students will be able to demonstrate an ability to use technology to manage and communicate information.
• Students will be able to demonstrate an ability to use technology, including computers, calculators, and other devices, to increase student achievement.
• Students will be able to demonstrate an ability to apply technology to the delivery of standards-based instruction.
• Students will be able to critically discuss research into the teaching of secondary mathematics.
• Students will be able to articulate tried and proven methods for presenting mathematics at the secondary level.
• Students will be able to discuss methods of assessing student progress including CSAP assessment.
VIII. Content Outline:
- Visit secondary classrooms throughout the San Luis Valley to observe and discuss methods of teaching mathematics in the middle and high school. This discussion will include classroom management techniques, assessment practices, material delivery and standards being presented.
- The National and Colorado State Standards will be introduced comparing the two sets as well as discussing their impact on teaching secondary school mathematics.
- Reading and writing assignments from the textbook on a specific, published schedule.
- Popular computer software and scientific calculators will be explored, not how to use them but how to effectively incorporate them into the classroom.
- Alternate learning and teaching styles will be explored other than just the lecture method.
- Methods for motivating students in mathematics at the secondary level will be discussed.
- Portfolio assignments such as abstracts of secondary mathematics education articles, reaction to secondary student work, and reflections of field based experience.
- All students must present a secondary math lesson using either a computer or graphing calculator. This lesson will be given in class near the end of the semester and in the field-based experience classroom.

IX. Course Procedures/Policies/Grading Scale:
1. Because this course involves both lecture and hands-on laboratory activities, attendance at all class sessions is required and constitutes a portion of the overall grade.
2. The grade for the course will be based on:
   a. Participation
   b. Written Assignments
   c. A portfolio
   d. Final lesson presentation both in class and in a secondary school classroom. A student must present an acceptable standards based lesson in order to successfully complete this course.
   e. Final examination
3. No credit will be given for this course without successful completion of the laboratory component.

X. Required/Recommended Readings:
2. Colorado Model Content Standards For Mathematics
3. Other materials will be supplied by the instructor.

XI. Issues Unique to Course:
This course has a separate, required 0 credit laboratory to be taken concurrently with the course. This laboratory will include eighty (80) hours of supervised, field-based experience related to teaching of relevant mathematics. The laboratory experience is administered through the Department of Teacher Education.

XII. Additional Departmental Issues: None