William Paterson University  
College of Education  
Department of Curriculum and Instruction  

COURSE OF STUDY  

Theme—Preparing Inquiring Educators: Knowledge, Understanding, Application  

1. **Course Title and Credits:** ELCL 616, Contemporary Issues and Trends in Mathematics Education  
   3 graduate credits  

2. **Course Description:** 
   This course focuses on issues and trends currently affecting mathematics education in grades K-12. Curriculum and evaluation standards recommended by the National Council of Teachers of Mathematics and state-wide initiatives are analyzed in terms of their implications for educational practices and directions for educational research.  

3. **Prerequisites:** This course is open only to matriculated students in the M.Ed. in Education program  

4. **Course Objectives:**  
   To enable students  
   A. to examine current issues and trends affecting mathematics education in grades K-12 in the context of professional and public debates about curriculum, learning, and assessment as reflected in current national and regional state standards as well as in mathematics education research.  
   B. to have what they learn serve to inform their teaching.  
   C. to develop their own classroom research projects.  
   D. to act as potential agents of curricular change in your schools and districts.  

5. **Student Learning Outcomes:**  
   Students will:  
   A. identify and analyze current issues and trends in mathematics education in light of the NCTM's Curriculum and Evaluation standards, the state Professional standards, and Assessment standards for mathematics education and the preparation of teachers.  
   B. identify, analyze, and evaluate innovative mathematics education practices being implemented locally, nationally and internationally across the curriculum.  
   C. analyze, interpret, and apply a variety of assessment techniques  
   D. identify research issues in the field.  
   E. develop a knowledge base for evaluating and conducting empirical investigations in mathematics education.  
   F. formulate ideas and carry out a pilot classroom research project that could be followed up in CIEE 629, Educational Research I.
6. **Course Content:**
   A. Evolving trends in mathematics education: Historical perspective of mathematics education up to the adoption of the NCTM Standards
   B. The NCTM and NJ Standards: What are they and what does it mean to say we have standards?
   C. The effects of the national and state standards on teaching practices: The meaning and implications of "constructivist teaching"
   D. Expanded instructional formats currently in use (e.g., problem solving, cooperative learning, talking and writing about mathematics, manipulative materials, technology
   E. Implications of state and national standards for teaching new strands of mathematics content (e.g., number sense, estimation, mental calculation, number theory, patterns and functions, geometry, probability and statistics)
   F. Changing assessment based on the Standards: Informal and portfolio assessment
   G. Implications of the *Professional Standards* for teacher education: Mathematics content and pedagogical experiences
   H. Research issues in mathematics education: Evaluating programs using innovative techniques
   I. Equity issues in mathematics education research (e.g., gender, race, culture, tracking and ability grouping.
   J. Research on students' characteristics (e.g., learning styles, attribution theory, children's misconceptions, motivational issues, social and emotional factors)
   K. Research on teachers' practices

7. **Teaching/Learning Methods:**
   1. Assigned readings related to syllabus topics
   2. Lecture and discussion
   3. Case analysis
   4. Reviews of research literature
   5. Presentations by students

8. **Evaluation Methods:**
   1. Contributions to class discussions and activities
   2. Contributions to Blackboard discussions
   3. Selection and posting on Blackboard of articles pertaining to specific current issue in mathematics education related to curriculum content standards and principles
   4. Leading group discussion on selected articles pertaining to a specific current issue in mathematics education related to curriculum content standards and principles
   5. A midterm paper in which a topic for classroom research is developed
   6. A final paper in which the classroom research results and implications are reported

9. **Recommended Text/Readings:**
10. **Preparers’ Names and Dates:** Professor Rochelle G. Kaplan, Fall 1991; Updated 1993; 1994; 1995; Professor Peter Appelbaum, Revised, Fall 1998, Spring 2000; Professor Rochelle G. Kaplan, Updated, Spring 2002, Fall 2004

11. **Department Approval Dates:** Fall 1991; Spring 2000

12. **Bibliography:**


