Eastern Illinois University

New Course Proposal

EDU 4553, Alternative Certification: Teaching Methods

1. Catalog description
   a. Course number: EDU 4553
   b. Title: Alternative Certification: Teaching Methods
   c. Meeting times and credit: Monday-Friday (3-1-3)
   d. Terms to be offered: SU
   e. Short title: ALT CERT METHODS
   f. Course description: This course addresses the Illinois Content Standards for the secondary teacher. Methods of teaching in the chosen discipline, philosophies of teaching and learning in the discipline, skills in planning for teaching, and identifying appropriate teaching materials are among the topics covered. The course is part of the academically rigorous, intensive Alternative Certification Program. Specific academic disciplines are addressed by different sections of the course.
   g. Prerequisite(s): Must be admitted to the Alternative Certification Program and have received a “B” or better in EDU 4550 (Alternative Certification: Introduction to Teaching).

2. Objectives and Evaluation of the Course
   a. Objectives: 1) Provide potential secondary teachers with teaching methods and materials for teaching in their chosen discipline.
      2) Familiarize potential secondary teachers with the issues facing educators and students in their chosen discipline.
      3) Discuss curriculum issues in potential secondary teachers’ chosen discipline.
      4) Study the involvement of technology in teaching in the chosen discipline.
      5) Provide opportunities to plan, discuss, and present content in the discipline to peers.
   b. General Education: Does not apply.
   c. Assessment: 1) Projects: Projects based on the chosen discipline and methods of teaching it will allow students to demonstrate what they have learned about specific teaching ideas related to their selected academic discipline.
      2) Curriculum Analysis: Students will analyze curriculum within the discipline. This will allow students to demonstrate their current understanding of the curriculum and how to teach it.
      3) Peer Teaching: Students will teach sample lessons to their peers. This gives students experience and feedback that focuses on their teaching practices.
      4) Problems and Short Writing Assignments: Solving problems and providing written answers to various topics in teaching the discipline will allow students to interact with one another, build skills, and coherently present ideas about secondary education.
   d. Graduate level: Does not apply.
   e. Writing Course: This course is not writing-active, writing-intensive, or writing-centered.

3. Outline of the Course
   a. Different sections will meet at times and for durations appropriate to the chosen discipline. A sample of daily content from the mathematics section are included to provide an example of specific content for the course. The mathematics section meets for ten 5-hour sessions.

   **Day 1:**
   Activities to bring forth the theory of Constructivism in teaching mathematics
   - What is a logarithm?
   - Fourteen Ways to Show (-1) × (-1)
   Discussion about Constructivism
   Perceptions of Mathematics
   Teacher Image
   Beginning of assignments to deal with solving different mathematical problems in different ways
   Development of lesson for Peer Teaching
   Textbook analysis

   Effective Date: Summer 2003
Day 2:
Discussion about Multiple Representation Theory
Specific mathematics content delivered activities to highlight various teaching strategies:
  - Pascal’s Triangle
  - Fibonacci Numbers
Use of student questions from the classroom to highlight issues student have with mathematics
Continuation of assignments dealing with solving different mathematical problems in different ways
Development of lesson for Peer Teaching
Textbook analysis

Day 3:
Specific mathematics content delivered activities to highlight various teaching strategies:
  - Figurate Numbers
  - Mayan Numbers
  - Number Bases
Continuation of student questions from the classroom
Continuation of assignments dealing with solving different mathematical problems in different ways
Development of lesson for Peer Teaching
Textbook analysis

Day 4:
Activities to focus on the different types of errors students can make and the types of teaching that lead to them:
  - Factoring Trinomials
  - Algebra Fallacies
  - Prime Number Generators
  - Error Patterns of Students
Start of discussion concerning the use of technology in the classroom
Completion of student questions from the classroom
Completion of assignments dealing with solving different mathematical problems in different ways
Development of lesson for Peer Teaching
Textbook analysis

Day 5:
Problem Solving Presentations
Completion of discussion concerning technology in the classroom
Mathematical problems to highlight appropriate uses of technology in the classroom:
  - Volume of a Box
  - Salary Comparison/Malthusian Dilemma
When does $a^x = \log_a x$?
Completion of lesson for Peer Teaching
Completion of textbook analysis

Day 6:
Peer teaching

Day 7:
Peer teaching analysis
Discussions and activities focused on equity issues in mathematics education
Historical perspectives on mathematics
Connection between mathematics and other disciplines
Day 8:
A discovery learning experience:
Pick’s Rule
Experiences with software used in mathematics:
Geometer’s SketchPad
Green Globs
Maple
Internet Resources

Day 9:
Discussion and activities concerning problems that mathematical terms can cause
Activities designed to deal with logic and proofs in mathematics

Day 10:
Videos exhibiting quality teaching
Activities dealing with different types of assessment

b. Does not apply.

4. Rationale
a. Purpose and need: The purpose of this course is to prepare students whose desire is to teach at the secondary level as a part of the Alternative Certification Program. This course is needed to address the Illinois Content Standards as part of a rigorous, intensive course of study in each discipline’s education theory, instructional methods and practice teaching.

b. Justification of the level: This course is listed at the 4500 level because those enrolled will have earned a bachelor’s degree, but will not receive graduate credit. All students in this course must first be admitted to the Alternative Certification Program and have received a “B” or better in EDU 4550 (Alternative Certification: Introduction to Teaching).

c. Similarity to existing courses and/or effect upon programs in other departments: Some aspects of this course contain content similar to that in sequences of courses in other existing programs. This course addresses the Illinois Content Standards in a more capsulated version and specifically in relation to other coursework in the Alternative Certification Program. No overlap with existing course will occur.

d. Impact on Program: Although the course is not designed for our current students, some post-baccalaureate students who meet the Alternative Certification Program criteria may be eligible for this program and may choose it over enrolling in our current post baccalaureate sequence.

5. Implementation
a. Faculty Member(s):
Education faculty whose specialty is secondary teaching in the discipline shall be assigned by the department responsible for preparing teachers in the chosen discipline to teach this course. For the Department of Mathematics example, currently this includes Dr. Marshall Lassak and Dr. Allen Davis.

b. Costs: There will be no additional costs to the student.

c. Texts: TBD

d. Term to be first offered: Summer 2003.

6. Community College Transfer: A community college course cannot be substituted for this course.

7. Date approved by the department: N/A

8. Date approved by the College or School curriculum committee: (Detailed course outlines for individual sections were approved in mathematics, foreign languages, and career and technical education on 10/7/02; the science section was approved on 10/21/02.)

9. Date approved by CAA: 12/5/02