



## **COURSE DESCRIPTION:**

This course will focus on coordinating number and computation concepts across grades four through nine as called for by the Core Content for Assessment created by the Kentucky Department of Education. Participants will gain experience in the use of physical models, calculators and computers to strengthen their skills in the teaching of number and computation ideas.

This course places particular emphasis on the School of Education themes of technology and intellectual vitality. EDU 659 specifically addresses the following Kentucky Experienced Teacher Standards (means of assessment in boldface below each performance criteria):

**Standard I:** The teacher provides professional leadership within the school, community and education profession to improve student learning and well being.

Performance Criteria:

1.5 Contributes to the professional knowledge and expertise about teaching and learning.

**Peer Outreach (project)**

**Standard 2:** The teacher demonstrates content knowledge within own discipline(s) and in applications(s) to teacher disciplines.

Performance Criteria:

2.2 Communicates a current knowledge of discipline(s) to be taught.

**Examination**

**Reflection on Readings**

2.6 Plans lessons and develops instructional material that reflect knowledge of current constructs and principles of the discipline(s) being taught.

**Classroom Lesson Plans and Implementation**

**Reflection on Readings**

**Standard 3:** The teacher designs/plans instruction that develops student abilities to use communication skills, apply core concepts, become self-sufficient individuals, become responsible team members, think and solve problems and integrate knowledge.

Performance Criteria:

3.1 Focuses instruction on one or more of Kentucky's learning goals and academic expectations.

**Classroom Lesson Plans and Implementation, Open Response Project**

**Competency Chart**

3.4 Creates and utilizes learning experiences that challenge, motivate and actively involve the learner.

**Classroom Lesson Plans and Implementation**

3.8 Includes creative and appropriate uses of technologies to improve student learning.

**Web Page Development**

**Standard 4:** The teacher creates a learning climate that supports the development of students' abilities to use communication skills, apply core concepts, become self-sufficient individuals, become responsible team members, think and solve problems, and integrate knowledge.

Performance Criteria:

4.4 Shows flexibility and creativity in the development of classroom processes and instructional procedures.

**Classroom Lesson Plans and Implementation**

4.9 Works with colleagues to develop an effective learning climate within the school.

**Peer Outreach Activities with Colleagues**

**Standard 5:** The teacher introduces/implements/manages instruction that develops student abilities to use communication skills, apply core concepts, become self-sufficient individuals, become responsible team members, think and solve problems, and integrate knowledge.

Performance Criteria:

5.7 Uses appropriate questioning strategies to help students solve problems and think critically.

**Classroom Lesson Plans and Implementation**

5.12 Makes efficient use of physical and human resources and time.

**Classroom Lesson Plans and Implementation; On-line discussion**

**Standard 6:** The teacher assesses learning and communicates results to students and others with respect to students' abilities to use communication skills, apply core concepts, become self-sufficient individuals become responsible team members, think and solve problems, and integrate knowledge.

Performance Criteria:

6.3 Assesses student performance using the established criteria and scoring guides consistent with Kentucky's assessment program.

**Open Response Project**

**Standard 7:** The teacher reflects on and evaluates teaching/learning.

Performance Criteria:

7.1 Assess and analyzes the effectiveness of instruction

**Classroom Lesson Plans and Implementation, Open Response Project**

**Standard 8:** The teacher collaborate with colleagues, parents and other agencies to design, implement and support learning programs that develop student abilities to use communication skills, apply core concepts, become self-sufficient individuals, become responsible team members, think and solve problems, and integrate knowledge.

Performance criteria:

8.1 Initiates collaboration with others and creates situations where collaboration with others will enhance student learning.

**Peer outreach activities with colleagues**

**Standard 9:** The teacher evaluates own overall performance in relation to Kentucky's learner goals and implements a professional development plan.

Performance criteria:

9.4 Applies to instruction the knowledge, skills and processes acquired through professional development.

**Classroom Lesson Plans and Implementation**

**Standard 10:** The teacher uses technology to support instruction; access and manipulate data; enhance professional growth and productivity; communicate and collaborate with colleagues, parents, and the community; and conduct research.

Performance criteria:

10.6. Uses the computer to do word processing, create databases and spreadsheets, access electronic mail and the Internet, make presentations, and use other emerging technologies to enhance professional productivity and support instruction.

**Web Page Development**

**Peer outreach activities**

**Classroom Lesson Plans and Implementation**

**Curriculum Evaluation**

10.9. Designs lessons that use technology to address diverse student needs and learning styles.

**Classroom Lesson Plans and Implementation**

**SPECIFIC OBJECTIVES**

At the completion of the course, participants should be able to:

1. Incorporate the concepts, skills, and relationships of the number and computation Core Content into their mathematics teaching emphasizing in-depth, open-ended investigations.
2. Use a variety of activities and techniques to assist students in mastering fundamental number and computation concepts and processes.
3. Incorporate the appropriate use of computers, calculators and physical models into the teaching of number and computation in the elementary, middle and secondary classrooms.
4. Identify factors to be considered in selecting instructional materials, including software and hardware, for students with special needs.
5. Assist other teachers with the above-mentioned processes.

## **REQUIREMENTS FOR ALL PARTICIPANTS**

### **Before Class Begins**

1. Read assigned materials and complete reflections – Due June 17, 2002

### **During June 2002**

1. Participate in all class sessions.
2. Complete chart of student competencies as a district – due June 26, 2002
3. Present evaluation of NSF curriculum materials as a group – Due June 28, 2002.
4. Begin development of peer outreach activities to implement during Fall semester, 2002.
5. Begin to write lesson plan to integrate concepts and skills from the Institute, including problem solving and the use of computers, calculators, and physical models into the teaching of mathematics for Fall implementation.
6. Begin a personal website for sharing and outreach with students, parents, and other education professionals – Due June 28, 2002
7. Successfully complete one examination. (Credit participants only) – June 28, 2002

### **During Fall and Spring 2002 - 2003**

1. Attend follow-up session on October 22, 2002 and turn in completed lesson plan with student work and reflection and completed peer outreach planning and evaluations. (All credit participants must turn in initial draft of lesson plan on August 27, 2002) Bring completed student competency chart to this meeting.
2. Participate in monthly on-line discussions.
3. Attend final session on March 25, 2005, to share work from the year and complete follow-up surveys. Bring completed student competency chart to this meeting.

## **ADDITIONAL REQUIREMENTS FOR THREE CREDIT PARTICIPANTS:**

1. Attend sessions on August 27, September 17, October 1, and November 12, 2002 from 4:30-7:15 PM
2. Complete Open Response Assignment. - Initial draft due on Sept. 17, 2002. Final draft with student work and evaluation due on November 12, 2002.
3. Complete personal website with links ready for lesson plan and open response question, rubric, and student work. – Due October 22, 2002.

## EVALUATION

1. Final grades will be based on the above-mentioned requirements:
2. The relative grading weights will be approximately as follows:

	Two Credits	Three Credits	Points
Peer outreach activities	25%	15%	100
Classroom implementation of instruction & assessment	30%	30%	200
Presentation of Curric. Evaluation	5%	5%	35
Number and Computation Web Pages	5%	5%	35
Competency Chart	5%	5%	35
Reflection on Readings	5%	5%	35
Summer Final examination	20%	15%	100
Class Participation/online discussion	5%	5%	35
Open Response Project		15%	100

Professional Behavior includes attendance, class participation, consideration of others, etc. While not assigned a weight, professional behavior will be considered in the final grade.

### 3. Grading Scale

A	92-100	621 - 675
B	85-92	574 - 620
C	75-85	506 - 573
F	Below 75	0 - 505

4. Cheating, plagiarism and unauthorized duplication of computer software will not be tolerated and may result in a failing grade. See student handbook for Dispositions and Code of Ethics.
5. Due dates will be given for all assignments. Points will be deducted for assignments received after the due date unless permission is received ahead of time or unusual circumstances warrant the lateness, in the judgment of the instructors.
6. If you are not satisfied with a grade on an assignment, you may redo the assignment once for a maximum grade of 91%. This policy only applies to assignments handed in on time.

The instructors reserve the right to make changes in the syllabus as circumstances dictate.