

**Course Syllabus**  
**Southeast Missouri State University**

**Department of Mathematics**  
**Title of Course: Internship in Algebraic Reasoning**

**Course No. MA 617**  
**New: Fall 2013**

**I. Catalog Description and Credit Hours of Course:**

Supervised teaching practicum and online seminars in which candidate acquires experience working with a range of students and adult learners on Algebraic Reasoning concepts. (1)

**II. Co-requisite:**

MA627 Algebraic Reasoning

**III. Purposes and Objectives of the Course:**

This course is a supervised mathematics teaching practicum in which candidate acquires experience working with a range of student and adult learners including elementary students (e.g., primary, intermediate, struggling, gifted, English language learners) and elementary school teachers, both novice and experienced, in a variety of professional development settings. The mathematical focus of this practicum is Algebraic Reasoning concepts.

The primary objectives of the course are to

- A. Collaborate with individual teachers through co-planning, co-teaching, and/or coaching.
- B. Facilitate teachers' use of successful, research-based strategies.
- C. Construct and evaluate multiple representations of mathematical ideas or processes, establish correspondences between representations, and understand the purpose and value of doing so.
- D. Analyze and evaluate student ideas and work, and design appropriate responses.
- E. Develop skillful and flexible use of different instructional formats—whole group, small group, partner, and individual—in support of learning goals.
- F. Design, select and/or adapt worthwhile mathematics tasks and sequences of examples that support a particular learning goal.
- G. Know the different formats, purposes, uses, and limitations of various types of assessment of student learning; be able to choose, design, and/or adapt assessment tasks for monitoring student learning.
- H. Use the formative assessment cycle (administer a formative assessment task, analyze student responses to the task, and design and reteach lessons based on this analysis) and be able to find or create appropriate resources for this purpose.

**IV. Student Learning Outcomes:**

- A. Student will demonstrate a greater understanding of how to teach and apply algebraic reasoning in a classroom setting.
- B. Student will effectively communicate their mathematics related classroom experiences gained during the internship
- C. Student will effectively evaluate the impact of the internship on themselves and their classrooms.

## V. Expectations of Students:

### Working with Students:

- A. Administer a formative assessment task related to algebraic reasoning. Analyze student response to the task, and then design and reteach a lesson based on this analysis. Write a reflection about this process.
- B. Implement two different forms of formative assessment (interview, journaling, etc.) to assess algebraic reasoning. Reflect on what you learned from this process. Describe strengths and weaknesses of each.
- C. Collect algebraic reasoning related work from 4 students in your class. Two of these should be from students whose work you feel is strong. The other two should be from students whose work is not strong. For each piece of work, write a reflection that describes the strengths and weaknesses noted in the work.
- D. Keep a weekly journal of your experiences in teaching algebraic reasoning concepts to students in your classroom. What are you learning about your students and yourself as a teacher?

### Working with Adults:

Lead a lesson study with a group of teachers. Work together to create a research lesson that includes formative assessment. Implement the lesson. Use the formative assessment data collected to help revise the lesson before it is retaught.

## VI. Course Outline:

Topics	Class Hours
A. Assessment	
1. Formative versus summative	3
2. Formative assessment types	3
3. Formative assessment cycle	3
4. Using formative assessment data to guide instructional planning	3
B. Lesson Study	<u>3</u>
	15

## VII. Textbook:

None

## VIII. Basis of Student Evaluation:

A. Online participation	15 %
B. Assessment Plans	25 %
C. Lesson Studies	60 %

## IX. Grading Scale

90% - 100% = A  
80% - 89% = B  
70% - 79% = C  
0% - 69% = F

The weight of the evaluation criteria may vary according to each instructor and will be communicated at the beginning of the course.

**X. Academic Policy Statement:**

Students will be expected to abide by the University Policy for Academic Honesty regarding plagiarism and academic honesty. Refer to:

<http://www6.semo.edu/judaffairs/code.html>

**XI. Student with Disabilities Statement:**

If a student has a special need addressed by the Americans with Disabilities Act (ADA) and requires materials in an alternative format, please notify the instructor at the beginning of the course. Reasonable efforts will be made to accommodate special needs.