

Math 424 – School-based Methods for Middle School Mathematics Teaching (2 credits)

Course Outline

Math 424, a co-requisite for Math 425, consists of a one day per week field experience in a public school. This is a non-graded course and student performance is evaluated in satisfactory/unsatisfactory basis.

Course Objectives:

The course is designed to give pre-service teachers “hands-on” experience in order to increase awareness of and appreciation for the complexities involved in mathematics teaching.

Assignments help to develop each student’s knowledge base and repertoire of skills related to:

- Develop an increased awareness of and appreciation for teaching mathematics, specifically in the *middle school classroom*.
- Develop an increased knowledge base and repertoire of professional skills related to the following aspects of teaching specifically *mathematics*:
 - classroom management, instructional grouping
 - instructional and behavioral objectives
 - planning for instruction; use of appropriate resources for lesson planning
 - use of manipulative materials and technology
 - connections between mathematics and other disciplines or real-life applications
 - assessing the skill/concept development of middle school students
 - observing and using questioning techniques; guiding mathematical discussions
 - hypothesizing about the link between instruction and student learning
 - reflection and revision of instruction, based on hypothesized links.

It is recommended that students meet, on campus, for the first or first and second week of the semester; going into their field placement during the second or third week. Expectations are clarified and assignments can be explained during this time.

This course consists, therefore of thirteen or fourteen three-hour (or at least 2.5-hour) visits to the middle school. University students participate in all aspects of the classroom activities while with their mentor teacher. Twenty-five minutes prior to the end of the class time, students meet with their professor to discuss what they’ve observed, share concerns and ask questions, and talk about lessons they have taught.

Course Assignments:

1. Weekly reflections: Students will complete weekly reflections so that they may have an anecdotal record of this field placement experience.
2. List of manipulatives: Students will investigate the manipulatives and materials used for the mathematics classes and fill out the manipulative form.
3. Classroom Observation for Common Core State Standards-Mathematical Practice alignment. Students in pairs will observe one class session and examine the alignment of implementation of the class session with the *Standards for Mathematical Practice*.
4. Curriculum & Unit Plan Analysis Students will analyze the curriculum of the field placement school and choose one particular unit on which to focus.
5. Lesson plan & Implementation & Reflection: Students will *plan* and *teach* at least one teaching session (it can be less than one whole teaching period) during the semester.