MATH 490 Seminar in Middle Grades Mathematics is a new course. It will be taught for the first time in Fall, 2010. The syllabus is not complete, but the emphasis will be on content standards for teaching middle school mathematics.

Course objectives and Content outline follow.

Course objectives: Students will participate in activities designed to
- Deepen content knowledge necessary to teach middle school mathematics effectively
- Make connections among various areas of mathematics
- Integrate mathematics content and pedagogical content knowledge
- Increase confidence and/or competence of middle school teachers
- Ensure that teachers can address student misconceptions and communicate mathematics effectively

Content outline: Students will perform hands-on activities that emphasize
- Connections among areas of mathematics essential to teaching the middle grades: number, measurement, geometry, algebraic thinking, probability, and statistics
- Study of mathematical topics appropriate for the middle school curriculum (e.g. numeration systems, number theory, functions, etc.) at a more rigorous level than in previous courses
- Addressing student misconceptions in mathematics
- Appropriate uses of technology
- Mathematical vocabulary and communication skills
- How students learn mathematics