

**EMAT 4000 – SPECIAL PROBLEMS IN MATHEMATICS EDUCATION  
SPRING 2006**

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*The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.*

**Overview:**

- (1) to revisit high school mathematics on a deeper level, and
- (2) to support you in your mathematics courses

The intent is that with the support of these seminars you will learn undergraduate mathematics in ways that will help you in your future work as mathematics teachers. These seminars are not tutoring sessions, but please send me questions that you have about the ideas in your mathematics courses, as those questions will help me organize the seminar to be partly responsive.

Many of the homework problems will be intended to give you sufficient “calculation experience” to be able to see the ideas embedded in the theorems and necessary for the proofs.

**Objectives:** The objectives of this seminar:

- To learn mathematics deeply and with understanding
- To see mathematics as more than knowing “what to do”
- To develop internal conviction about how mathematical ideas work and why certain statements are true
- To develop habits of working together, asking and pursuing questions, looking for connections, and looking for multiple explanations
- To develop precision (rigor) in use of mathematical language and notation
- To develop intuitive understandings of abstract ideas
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**Attendance:** Attendance and participation are essential in this class, both for you to learn and so that others may benefit from your input. Attendance is expected because most of class time will be spent on group discussions and activities. The ideas and concepts presented cannot easily be transmitted through class notes. You are responsible for all announcements made in class even if you are not there. It is important that you arrive promptly. Absences and tardiness will affect your grade.

**Outline:** There will be a total of 17 class meetings. Over the course of the semester concepts and topics within Abstract Algebra will be explored.

**Requirements:**

- Regular homework assignments, some of which will be graded
- Two or three expository pieces explaining a mathematical idea in multiple ways
- Participation in class discussions
- Keeping a journal of your questions and answers (connections, “ahas,” etc.)

**Conduct:** Inappropriate conduct as outlined by the University Honor Code and Academic Honesty Policy will be upheld. All academic work must meet the standards contained in “A Culture of Honesty.” Students are responsible for informing themselves about those standards before performing any academic work. Further information is available at <http://www.uga.edu/ovpi/honesty/acadhon.htm>.