

Dr. Marilyn E. Strutchens Room 5010 Haley Center Phone: (334) 844-6838 Office Hours: TR, 12:00 -2:00 or by appointment Email address: strutme@auburn.edu	Meeting Times: Designated Wednesdays from 5:00 to 8:00
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Syllabus Outline

1. **Course Number:** CTSE 8950
Course Title: Graduate Research Seminar in Mathematics Education
Credit Hours: 2 semester hours
Prerequisites & Co-requisites: None
2. **Date Syllabus Prepared:** January 3, 2010
3. **Texts or Major Resources:** Books and Articles listed below and References found by student
Sowder, J., & Schappelle, B. (Eds.) (2002). *Lessons learned from research*. Reston, VA: National Council of Teachers of Mathematics.
Carpenter, T. P., Dossey, J. A., & Koehler, J. L. (Eds.) (2004). *Classics in mathematics education research*. Reston, VA: National Council of Teachers of Mathematics.
Kilpatrick, J., Martin, W. G., & Shifter, D. (Eds.) (2003) *A research companion to principles and standards for school mathematics*. Reston, VA: National Council of Teachers of Mathematics.
Lester, F. K. Jr. (Ed.) (2007). *Second handbook of research on mathematics teaching and learning*. Reston, VA: National Council of Teachers of Mathematics and Information Age Publishing.
Grouws, D. A. (Ed.) (1992). *Handbook of research on mathematics teaching and learning*. Reston, VA: National Council of Teachers of Mathematics.
American Psychological Association. (2009). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.
Other readings as assigned.
4. **Course Description:** This seminar is designed for mathematics education graduate students who are exploring research topics in preparation for a thesis, field project, dissertation, or research article. The seminar is a continuing research workshop which covers all stages of the research process, from conceptualization and theory development, to preparation and defense of a proposal, to data collection, analysis, and writing, and finally to the preparation and defense of a research proposal for a project. The main goals of the seminar are to help students keep their research on track, ensure focus and consistency, and maintain quality of research and writing. The seminar also aims to create a supportive environment and provide students with feedback on their work in progress.
5. **Course Objectives:** The goal of this course is to provide students the opportunities to:
 - Conceptualize a study based on related literature.
 - To prepare a plan for a research study.
 - To receive and provide feedback to and from others in related stages of writing a research study.
6. **Class Activities and Assignments:**
 - a. The students and the professors will meet on specified Wednesdays for debriefings.
 - b. Students will meet with one of the instructors for individual consulting at times to be determined.
 - c. Additional on-line participation between scheduled classes will be facilitated through BlackBoard.
 - d. Written assignments will include Review of Literature, Research Question(s) and Rationale, and a Draft of a Proposal of Study for a research study.
7. **Course content and Tentative Schedule**

08/18/10	Plan for the Semester (Participants answer questions related to their research interest.)
08/25/10	Participants share information related to their research interest more formally. (Progress reports on research studies)

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| 09/01/10 | No class. Students work individually work on Literature Reviews and other components of the study |
| 09/08/10 | Library Session to focus on finding references and other resources related to conducting research. (Presentation given by the Education Librarian for Reference & Instruction Services) |
| 09/15/10 | Library Session (Students spend time on their own looking for references and other resources related to their study). |
| 09/22/10 | Discuss issues related to research studies; Progress reports on proposals for a research study |
| 09/29/10 | Library Session (Students spend time on their own looking for references and other resources related to their study). |
| 10/06/10 | Discussion of theoretical frameworks related to research in mathematics education;
Draft of Proposal or any components completed at this point. |
| 10/13/10 | Library Session (Students spend time on their own looking for references and other resources related to their study). |
| 10/20/10 | Progress reports on proposals for a research study
(Individual consultations) |
| 10/27/10 | Library Session (Students spend time on their own looking for references and other resources related to their study). |
| 11/03/10 | Discuss articles related to methodology
Draft of work up to this point is due. |
| 11/10/10 | Progress reports on proposals for a research study
(Individual consultations) |
| 11/17/10 | Discussion of Comparison of Studies Assignment. |
| 1122 - 26/10 | Thanksgiving Break for Auburn University |
| 12/01/10 | Draft of proposal for the research study is due. |
- 8. Course Requirements/Evaluation:** Grades will be based on level and quality of class and written work. Each written assignment will be reviewed and feedback given for revision where desired. **All assignments must be typewritten and double-spaced. Use size 12-font.** Points will be deducted from assignments for grammatical mistakes, typos, and spelling errors. The assignments will be graded on a point scale as follows:

<u>Assignment</u>	<u>Points</u>
Participation in Classes and On-line Discussions	S or P
Comparison of Two Major Research Studies Related to Research Topic	S or P
Literature Review	S or P
Dissertation Question(s) and Rationale	S or P
Draft of a Proposal of Research Study	S or P

Evaluation

Final course grades will be assigned based on a pass or fail.

Descriptions of Major Assignments

Literature Review

- 1) Define the issue in mathematics education
- 2) Summarize major studies related to the topic
- 3) Synthesize the studies
- 4) Include, in APA format, key references.

Papers are assessed on quality of ideas, quality of writing, adherence to APA format, use of key sources, integration of ideas from other readings, class discussions, etc.

Dissertation Question(s) and Rationale

The dissertation question should be based on the research. After completing a strong literature review related to the topic of interest, one should start creating the question itself keeping in mind it should be researchable, relevant, clear, and evocative. It should catch interest of the reader and draw him to the proposal. The question should be relevant to the field of mathematics education.

Proposal Outline (<http://www.sts.vt.edu/ProposalGuide.htm>)

Concept and Definition of the Project: Describe the specific program of study or research to be undertaken. Explain the basic ideas or questions to be explored. Illustrate the approach or line of thought to be taken insofar as it has been developed. Include a review of the relevant literature and, in addition, explain the relationship of the current project to the work of other scholars in the same general area.

Significance of the Study: Indicate clearly the significance of the study and the contribution it will make to the field.

Methods: Provide a general description of the proposed methodology including the analytic strategy or statistical techniques (if appropriate). Indicate the present state of the proposed study and identify any work thus far completed in the research. State where the study will be conducted. Comment on access to the archives, collections, or persons essential for carrying out the project. If appropriate, indicate competence in foreign language(s) needed for materials to be used in the study.

Plan of Work and Timetable: Present a general outline of the dates and times to be spent on various aspects of the research project. While the timetable will be only an estimate, it will give the student and the committee a measure of the manageability of the project within the time period designated.

Bibliography

9. Class Policy Statements:

Participation: Students are expected to participate in all class discussions and participate in all exercises. It is the student's responsibility to contact the instructor if assignment deadlines are not met. Students are responsible for initiating arrangements for missed work.

Attendance/Absences: Attendance is required at each class meeting. If an exam is missed, a make-up exam will be given only for University-approved excuses as outlined in the Tiger Cub. Arrangement to take the make-up exam must be made in advance. Students who miss an exam because of illness need a doctor's statement for verification of sickness and should clear the absence with the instructor the day they return to class. Other unavoidable absences from campus must be documented and cleared with the instructor **in advance**.

Unannounced quizzes: There will be no unannounced quizzes.

Accommodations: Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternative time can be arranged. To set up this meeting, please contact me by e-mail. Bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have an Accommodation Memo but need accommodations, make an appointment with the Program for Students with Disabilities at 1244 Haley Center, 844-2096 (V/TT).

Honesty Code: The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.

Professionalism: As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College's conceptual framework. These professional commitments or dispositions are listed below:

- Engage in responsible and ethical professional practices
- Contribute to collaborative learning communities
- Demonstrate a commitment to diversity

- Model and nurture intellectual vitality

Justification for Graduate Credit (for Graduate Credit Only)

+ = *Sample statement—modify as needed.*

++ = *Required statement—please include as written.*