

MATH 5803.001: Introduction to Mathematics Pedagogy Research
Fall 2006: MW 3:30-4:45 p.m., PHSC 1105

instructor: Dr. TJ Murphy

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The best way to reach me is by e-mail. I tend not to answer my phone and I am better about replying to e-mail than I am about returning phone calls.

phone: 325-4071 (answering machine); 325-6711 (Department of Mathematics office)

office hours: Mon Wed 11:30-12:20; Tues 12:00-1:00; also by scheduled appointment.

office: PHSC 1115

class websites: learn.ou.edu and www.math.ou.edu/~tjmurphy (follow the 5803 link)

textbook: *Educational Research: An Introduction (8th edition)*. Gall, Gall, & Borg, 2006.

course content: This course is intended for students who will be consumers of mathematics education research as well as those who will be producers of this research. The course offers an overview of the mathematics pedagogy research process and a detailed survey of selected aspects of this process. Particular topics include: reviewing existing mathematics teaching research literature, designing research studies, gathering research data (surveys, tests, interviews, observations, etc.), analyzing research data (major statistical methods and their purpose; major qualitative research methods and their purpose), and reporting pedagogical research. Students who have taken the course will be better able to evaluate existing research in teaching undergraduate mathematics and to be able to plan and conduct research of their own.

grades: Final grades will be determined by a weighted average of the grades on individual assignments.

- 10% attendance, preparing for class, and in-class participation
- 4% IRB training
- 8% critical summary of common articles (4% each)
- 21% written critical summary of seven articles (3% each)
- 21% in-class oral presentation of seven critical summaries (3% each)
- 16% feedback to classmates about their critical summaries (1% each)
- 20% literature review in selected area

Each assignment will be graded on a four-point scale, by both the instructor and/or classmates:

- 4 (A) points for an expert answer or an expert answer with a minor transgression
- 3 (B) points for a competent answer
- 2 (C) points for good progress
- 1 (D) points for a worthy effort

attendance and participation: Come to class! Be prepared to discuss reading assignments. Turn in Self-Check Tests at the end of the assigned chapter.

IRB training: Complete the human subjects research training at <http://www.ouhsc.edu/irb-norman//training.asp>. Bring a copy of your completion record to Dr. Murphy.

critical summary of common articles: To practice evaluating research, the entire class will read two articles and critique them. Students will discuss the articles in class and turn in written evaluations of the articles.

critical summary of seven articles on one RUME topic: Student will have the option of working in pairs (approved by the instructor) or individually on these critical summaries. These pair or individuals will select a RUME topic they are interested in and read seven articles related to this topic. For each article read, students will complete two tasks: (1) a written critical summary of the article (1-3 single-spaced pages each) and (2) an in-class presentation of their critical summary (5-10 minutes each). The written critical summary must be completed in Word and submitted via learn.ou.edu.

feedback to classmates on their critical summaries: Each critical summary will be given to two students for review. These reviewers will provide suggestions related to clarity of writing as well as additional questions about the article that they would like to see addressed in the critical summary.

final exam: For the final exam, students will complete a well-written, critical review of the literature in an area of their choice within research in undergraduate mathematics education (10 single-spaced pages).

For the Record:

- Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities. Be prepared to bring documentation from the Office of Disability Services 325-3852.

All cases of academic misconduct will be reported to the Dean of the College of Arts & Sciences for adjudication.