CTSE 7530

Spring 2012

Curriculum & Teaching

College of Education

Dr. W. Gary Martin

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Office Hours

Tuesday, 3:00-5:00 p.m.

Wednesday, 2:30-4:30 p.m.

Or by appointment

Conceptual Framework

Mission

The mission of the Auburn University College of Education is to build a better future for individuals, our state, our nation and our world. We fulfill our mission by preparing competent, committed and reflective professionals as we engage in outstanding teaching, cutting-edge research and meaningful outreach.

Vision

Our vision is one of transformation. We strive to be and prepare agents of change. We seek to establish and work collaboratively within socially responsive learning communities that value the mosaic of a diverse society. Our vision includes engaging in the continuous learning necessitated by a rapidly advancing world; identifying and addressing critical issues related to the education of all people; and using technology to broaden and support learning opportunities. Ours is a vision of change embracing the inclusive, collaborative and technological aspects of our mission, thereby establishing us as a college representing educational advocacy and innovation in the 21st century.

Philosophy, Purpose and Goals

Our philosophy of learning and teaching emphasizes that building a better future for all means creating learning environments for diverse learners that acknowledge the active, collaborative and ever-evolving nature of learning. This philosophy also values teaching that promotes the development of safe, stimulating learning communities enriched with diverse perspectives; is grounded in reasoned and purposeful decision making; and is enacted in proactive, flexible and self-regulating ways.

The keystone, the topmost stone of an arch, serves as a visual reminder of our mission and our goals. Just as the keystone supports and holds an arch together, education holds intact the promise of a better future for all. We believe that education is the keystone of opportunity and equity in a richly diverse, increasingly technological, and ever-changing world. It is the critical building block that enables individuals and societies to flourish in a global community.

CTSE 7530 Syllabus, Spring 2012

Instructor Information
Dr. W. Gary Martin
Haley 5008
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Class Meetings
Tuesday, 5:00-7:50 PM
Haley 2456
(No class on February 7 and April 24)

1. **Course Number:** CTSE 7530
   Course Title: Organization of Program-Mathematics Education
   Credit Hours: 3 semester hours
   Prerequisites: None; **Corequisites:** None

2. **Date Syllabus Revised:** January 2010

3. **Texts or Major Resources:**
   National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics.* Reston, VA: Author.
   Stanic, G.M.A., & Kilpatrick, J. (Eds.) (2003). *A history of school mathematics, volumes 1 and 2.* Reston, VA: National Council of Teacher of Mathematics.
   Jones, P. S. (Ed.) (1970). *A history of mathematics education in the United States and Canada*, Thirty-second Yearbook. Reston, VA: National Council of Teachers of Mathematics.
   In addition, journal articles, books chapters, books, and monographs that focus on issues related to changes in mathematics education curricula and education in general.

4. **Course Description:** An overview of forces shaping critical issues in mathematics education today, including perspectives from the history of school mathematics, learning theory, and curriculum.

5. **Course Objectives:** To prepare mathematics educators who:
   1. Understand issues and trends that have emerged over the history of mathematics education in the U.S. and can relate them to issues we are currently facing.
   2. Apply a range of theoretical perspectives to analyze issues in mathematics education.
   3. Are aware of how decisions made at the local, state, and national levels may influence mathematics instruction.
   4. Can analyze and plan curriculum that is responsive to a range of student needs.

6. **Course Content and Schedule:**

10-Jan	Course introduction; Current status of mathematics education
17-Jan	Current issues in mathematics education; Nature of standards
24-Jan	History of math education (Up to 1894); National recommendations
31-Jan	History of math education (1894-1920); Theorists (Dewey; Thorndike); National recommendations II
7-Feb	*NO CLASS*
14-Feb	History of mathematics education (1920-1945); Theorist (Brownell); National recommendations III
21-Feb	History of math education (1945-1970); Theorists (Piaget, Dienes, Fehr); International comparisons
28-Feb	History of mathematics education (1970-2000); Theorists (Vygostsky, von Glasersfeld; Gagne); State and local standards
6-Mar	History of mathematics education (synthesis); Curriculum alignment
13-Mar	*SPRING BREAK*
20-Mar	Curriculum organization and planning; Standards and alignment
27-Mar	Curriculum organization and planning II; Criteria for textbook reviews
3-Apr	Curriculum organization and planning III; Textbook reviews II
10-Apr	Textbook reviews III; Individual project presentations
17-Apr	New directions in mathematics curriculum; Individual project presentations
24-Apr	*NO CLASS*
2-May	Final exam, 7:00-9:30 p.m. (per official course schedule)

7. Course Requirements/Evaluation:

CTSE 7530 is intended to have a discussion-oriented, seminar environment. Thus, each participant will contribute actively to discussions based on readings and other assignments. Grades will be based on level and quality of class and written work, as well as written assignments. **All assignments must be typewritten and double-spaced. Use size 12-font. APA style should be used for papers and references.** Deductions will be made from assignments for grammatical mistakes, typos, and spelling errors.

Assignments

- Participation in class and on-line discussions (20% of grade), including completing all assigned readings, short essays as assigned, and other assignments.
- Presentations to class (individual or group) (20% of grade), including major presentations and additional smaller presentations.
- Individual project (35% of grade)
- Class project (10% of grade)
- Final examination (15% of class grade)

Grading

All assignments will be graded on a 4-point scale (4=A; 3=B; 2=C; 1=D; 0=F) and weighted averages will be computed following the percentages given in the preceding section. Final grades will be assigned by rounding to the nearest whole number; i.e., 3.5 and up is an A, 2.5 and up is a B, and so forth.

Descriptions of Major Assignments

Short Essays

Students will be asked to prepare two-page papers in response to assigned prompts. These papers should follow the guidelines above regarding style and presentation.

Class Presentations

During the semester students will be asked to lead at least two major discussions, as well various shorter presentations. Presenters must provide the instructor with a copy of their PowerPoint and other handouts. They will be responsible for handouts and any other materials needed to lead the discussion.

Historical Era (pairs). Presenters will provide an overview of the forces shaping mathematics education during their assigned era. They should provide a summary sheet for class members. (25 minutes in length)

a) What was the social context for this era, including major historical events and forces outside of education?
b) What were the major goals and priorities for mathematics education? Why?
c) Who were some of the key players who influenced that era?
d) What were some of the seminal events in mathematics education?

Theory Related to Learning Mathematics (individual). Presenters will read one or more articles about a learning theorist and report on how he or she has impacted mathematics education. They will prepare a PowerPoint presentation of their findings and be prepared to present it to the class. The presentation should be 20 minutes in length. They should also engage the class in an activity that exemplifies the learning theory. Also, they should prepare a one-page summary sheet of the person's contributions and make enough copies to hand out to their classmates. Their summary page should include the following headings:

a) Background (person's educational credentials and major field of study)
b) Main ideas and philosophy
c) Implications for mathematics curriculum
d) References (APA style)

Individual Project. The individual project should include one or both of the following components, based on the interests of the student. Both the topics and the comparative weights of the two components must be negotiated in advance with the instructor. These are formal papers that should follow proper APA style and include an extensive reference list.

a) Issue Brief. The student will prepare a 5-20 page paper addressing a contemporary issue in mathematics curriculum. The student should address the following areas:

a) Define the issue in mathematics education
b) Describe advantages and disadvantages of two or more suggested responses (or approaches); i.e., summarize major arguments, and
c) State and defend your personal view.

b) Curriculum Analysis. The student will prepare a 5-20 page paper addressing a content area in mathematics education that crosses some band of grades. Students should refer to recommendations given in various frameworks, journal articles discussing the teaching and learning of that topic, and implementation in various textbook series. Students should address the following questions, including both varying perspectives and their personal synthesis:

a) What are the goals for student learning in this content area?
b) What different approaches are taken to presenting the content?
c) How should the content grow across the grades?
d) What are some key tasks at different levels that will promote student learning?

Class project. We will work together on a class project. Individuals will be graded on their contributions to the group effort. Additional details will be provided.

Final exam. The final exam will include both a take-home and an in-class portion. The take-home portion should follow the requirements for written assignments and will consist of one or more essay questions. The in-class portion will be closed-note and will include items in a variety of formats.

8. 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