

**Auburn University
Course Syllabus
Fall 2014**

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1. **Course Number:** CTSE 7540
Course Title: Evaluation of Program in Area of Specialization: Secondary Mathematics
Credit Hours: 3 semester hours
Prerequisites: None
Corequisites: None
2. **Date Syllabus Prepared:** January 2007, Revised August 2014.
3. **Texts or Major Resources:**
Brown, C.A. & Clark, L.V. (Eds.) (2006). *Learning from NAEP: Professional development materials for teachers of mathematics*. Reston, VA: National Council of Teachers of Mathematics.
Collins, A. (Ed.) 2011). *Using classroom assessment to improve student learning: Math problems aligned with NCTM and Common Core State Standards*. Reston, VA: National Council of Teachers of Mathematics.
Kloosterman, P. & Lester F. K. (Eds.). (2007). *Results and interpretations of the 2003 mathematics assessment of the National Assessment of Educational Progress*. Reston, VA: National Council of Teachers of Mathematics.
National Council of Teachers of Mathematics. (1995). *Assessment standards for school mathematics*. Reston, VA: Author.
National Council of Teachers of Mathematics. (2014). *Principles to actions: Ensuring mathematical success for all*. Reston, VA: Author.
Stenmark, J. K. (1991). *Mathematics assessment: Myths, models, good questions, and practical suggestions*. Reston, VA: National Council of Teachers of Mathematics.

Articles and chapters from various journals and books.
4. **Course Description:** Theoretical perspectives of evaluation and methods of evaluating learners, teachers, and curriculum.
5. **Course Objectives:** The goal of this course is to provide teachers the opportunities to:
 - Examine the four purposes of assessment from both a theoretical perspective and a practical perspective: Monitoring Students' Progress, Making Instructional Decisions, Evaluating Student Achievement, and Evaluating Programs
 - Acquire knowledge of Alabama's state assessment requirements and processes. **(5)(c)3.(ii)**
 - Study the impact of local, state, national, and international assessments.
 - Examine the forces that dictate the need for different types of assessments.
 - Study and use a variety of alternative assessments, such as portfolios, journal writing, open-ended assessments, interviews, projects, observations, etc.
 - Use theories of learning to create a variety of assessment tasks.
 - Diagnose and prescribe remedies for common disabilities in the learning of mathematics.
 - Develop knowledge of the purposes, strengths, and limitations of formative and summative assessment and of formal and informal assessment strategies. **(2)(c)5.(i)**
 - Gain knowledge of measurement-related issues such as validity, reliability, norms, bias, scoring concerns, and ethical uses of tests and test results. **(2)(c)5.(iii)**
 - Develop knowledge of a range of professional learning opportunities, including job-embedded, district- and state-sponsored workshops, university offerings, and online and distance learning. **(5)(c)2.(ii)**

6. Course Content and Schedule:

Dates	Topics	Assignments																
8/19/2014	Introduction: What is assessment? Discuss major issues related assessment today. Discuss productive and unproductive beliefs about assessment. Overview of the Course: Go over Syllabus Homework: Read pages 1 - 57 of <i>Principles to Actions</i> . Discuss how and why assessment is a key element in all of the mathematics teaching practices. (Summary)																	
8/26/2014	Focus: Assessment and the Mathematics Teaching Practices Homework: Introduction (pages 1-6; & 9-22, <i>Assessment Standards</i> ; pages 59 – 98, <i>Principles to Actions</i>) Group Discussion Leader I	<i>Summary is due.</i>																
9/2/2014	Focus: Assessment Standards <table><tr><th>Assessment Standards</th><th>Name</th></tr><tr><td>Mathematics Standard</td><td></td></tr><tr><td>Equity Standard</td><td></td></tr><tr><td>Learning Standard</td><td></td></tr><tr><td>Openness Standard</td><td></td></tr><tr><td>Inferences Standard</td><td></td></tr><tr><td>Coherence Standard</td><td></td></tr><tr><td>Learning Standard</td><td></td></tr></table> <p>See list of assignments for Group Discussion Leader I Instructions.</p> <p>Homework: Purpose: (pages 29-44; <i>Assessment Standards</i>; Seeley article</p>	Assessment Standards	Name	Mathematics Standard		Equity Standard		Learning Standard		Openness Standard		Inferences Standard		Coherence Standard		Learning Standard		<i>Discussion I: Assessment Standard</i>
Assessment Standards	Name																	
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9/9/2014	Focus: Overview of the Purposes of Assessment <ul style="list-style-type: none">Overview of the Four Purposes of Assessment and Classroom Assessment <p>Homework: Choppin article; Boston and Smith article (Summary)</p>																	
9/16/2014	Focus: Monitoring Students' Progress <ul style="list-style-type: none">Monitoring Students Progress: Connecting Assessment and InstructionMaintaining Cognitive Demand of TasksDiscourse <p>Homework: Discussion II: Assessment Types</p>	<i>Summary is due</i>																
9/23/2014	Purpose: Monitoring Students' Progress <table><tr><th>Assessment Type</th><th>Name</th></tr><tr><td>Closed tasks</td><td></td></tr><tr><td>Open-middle tasks, & Open-ended tasks</td><td></td></tr><tr><td>Projects</td><td></td></tr><tr><td>Performance Tasks</td><td></td></tr><tr><td>Journals & Exit Prompts</td><td></td></tr><tr><td>Interviews & Observations</td><td></td></tr></table>	Assessment Type	Name	Closed tasks		Open-middle tasks, & Open-ended tasks		Projects		Performance Tasks		Journals & Exit Prompts		Interviews & Observations		<i>Discussion II: Assessment Types is due.</i>		
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	<div> <div>Checklists & Anecdotal notes</div> <div></div> </div>	
	Homework: NCSM & AMTE Position Statement on Formative Assessment; Leahy, Lyon, Thompson and Wiliam article (Summary); Choike article; Hodge Article	
9/30/2014	Focus: Exploring Assessment Resources http://www.insidemathematics.org/ http://nces.ed.gov/nationsreportcard/itmrlsx/ http://nces.ed.gov/surveys/pisa/educators.asp See list of assignments for directions for the explorations. (No Class)	
10/07/2014	Purpose: Monitoring Students' Progress—Formative Assessment <ul style="list-style-type: none"> Formative Assessment Differentiated Instruction Homework: Read Making Instructional Decisions (pages 45-55; <i>Assessment Standards</i>), Dieker and colleagues article (Summary), and Teague and colleagues article	Summary is due.
10/14/2014	Purpose: Making Instructional Decisions <ul style="list-style-type: none"> Special Needs Students Homework: Purpose: Evaluating Student Achievement (pages, 56-65; <i>Assessment Standards</i>), NCTM's Position Statement on High-Stakes Tests, Stiff & Johnson Article	Issue Brief is due.
10/21/2014	State Department Person Alabama Assessments	
10/28/2014	Purpose: Evaluating Student Achievement Homework: National and International Assessment articles	
11/4/2014	Purpose: Evaluating Student Achievement—Summative Assessment <ul style="list-style-type: none"> Student Achievement National and International Assessments Impact of Assessments an Students' Mathematical Progress Homework: Purpose: Evaluating Programs and Evaluating Teaching (pages, 66-77 <i>Assessment Standards</i> ; pages 99 -108, <i>Principles to Actions</i> (Summary)).	Summary is due.
11/11/2014	Summative Assessment <ul style="list-style-type: none"> Student Achievement National and International Assessments Impact of Assessments an Students' Mathematical Progress Homework: Purpose: Evaluating Programs and Evaluating Teaching (pages, 66-77 <i>Assessment Standards</i> ; pages 99 -108, <i>Principles to Actions</i> (Summary)).	Summary is Due
11/18/2014	Purpose: Evaluating Programs and Evaluating Teaching <ul style="list-style-type: none"> Examining Teacher Effectiveness Examining Programs 	Summary is due
11/24 – 29, 2014	Thanksgiving Holidays	
12/2/2014	Oral Reports	Report on Project.

· Course Requirements/Evaluation:

Class Activities and Assignments: Five types of activities will be utilized to accomplish the goals and objectives of the course throughout the semester: reading and discussing literature about mathematical assessment, experiencing alternative assessment tasks, developing assessment tasks, completing a major assessment project, and writing an issue brief.

Evaluation and Course Grading: Since this is a very small enrollment course with a seminar environment, participants will contribute actively to discussions based on readings and other assignments. 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.** Deductions may be made for grammatical mistakes, typos, spelling errors, and APA format errors.

Descriptions of Major Assignments:

- *Assessment Resources Reflection:* Participants will write reflection based on their explorations of assessment websites. The reflection will be based on the activities participants are assigned to do at each website. See the appendix for directions for the explorations.
- *Reflections on Current Issues:* Participants will respond to a posted newspaper article related to some aspect of assessment. These articles will be posted on Edmodo so that class members can respond to each others thoughts related to the articles. This assignment is designed to raise students' awareness of the impact that assessment has on the teaching and learning of mathematics.
- *Lead Role in Group Discussions:* Participants will lead two class discussions throughout the semester. Each person will be responsible for handouts and any other materials needed to lead the discussion. Participants should make copies of PowerPoint presentations and ensure that all of the materials for use are readable from the document camera.
 - *Discussion I: Assessment Standard:* Lead Discussants will discuss one of the assessment standards and compare and contrast it to the elements from *Principles to Actions*. They will also enumerate the major points of the standard as well as discuss the elements that take into account some of the major points of the standard. Finally they will provide a scenario/vignette that is representative of the standard. (Each presentation should last no longer than 20 minutes.)
 - *Discussion II: Assessment Type.* Lead Discussants will need to find one recent article to supplement the material in the book that discusses their assigned assessment type. They should make a copy of the article for everyone in the class or bring the article to the professor to copy. They should come prepared to lead the class in an activity that exemplifies the assessment type as well as be able to define the assessment type and how it is used in the classroom. (Each presentation should last no longer than 35 minutes.)
- *Summary of Readings.* Prior to each class meeting, students will be required to write a reflection related to a specific article or chapter that they read for homework. Below are questions that should be answered:
 - For each article or chapter with summary in bold proceeding it students will write four-page reflection. Students will use the APA Manual of Style as a reference as to how to reference the articles. Below is the information that students should include in the summary.
 - 1) Reference information
 - 2) Discuss the major points of the article or chapter.
 - (i) Important terms
 - (ii) Theoretical basis if there is one

- (iii) Major implications for mathematics education
- (iv) How it relates to other assigned readings
- 3) Discuss questions that arose in your mind as you read the article.

- *Issue Brief:* Students will prepare one issue brief (six to eight pages each). The issue brief should focus on an issue related to helping students with disabilities learn mathematics. Students must:
 - Define the issue in mathematics education
 - Describe advantages and disadvantages of two or more suggested responses (or approaches); i.e., summarize major arguments,
 - State and defend their personal view,
 - Include, in APA format, a list of at least 5- 8 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. Students will discuss their papers in class (10-minute presentation).
- *Mathematics Project:* Students will create a mathematics project that will culminate in a class presentation. Below are the requirements.
 - Phase 1: Design of Project -The project has to have a data collection component or some component where the students would have to do some mathematical analyses to make an informed decision on an issue, purchase, or other appropriate event.
 - Purpose of the Assessment
 - Content Standards and Standards for Mathematical Practice Addressed
 - Instructions for completing the project
 - Materials list
 - Handouts
 - A description of what the finish products should look like.
 - Phase 2: Create a rubric for the different components of the project.
 - Phase 3: Implement the project.
 - Phase 4: Report to the class on the conception, implementation, and results of the project.
 - Written report

Course Requirements and Assignments

<u>Assignment</u>	<u>Points</u>
1. Exploration of Assessment Resources Reflection	100
2. Lead Role in Group Discussion (2@50 points)	100
3. Issue Brief	80
4. Mathematics Project	100
5. Reflections on Current Issues (5 @10)	50
6. 4 page Summaries of Reading Assignments (10 points each)	60
Total	490

Evaluation

- Final course grades will be assigned based on the percentage of possible points earned by students.

A	90% or above
B	80 % - 89%
C	70% - 79%
D	60% - 69%
F	0% - 59%

7. 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

Recommended Resources:

American Psychological Association (2009). *Publication manual of the American Psychological Association (6th ed.)*. Washington, DC: Author.

Journals:

Mathematics Education

Journal for Research in Mathematics Education

Educational Studies in Mathematics

For the Learning of Mathematics

Journal of Mathematical Behavior

Journal of Computers in Mathematics and Science

Teaching

International Journal for Mathematics Education in Science and Technology

The Journal of Mathematics Teacher Education

Teaching Children Mathematics

The Mathematics Teacher

Teaching Mathematics in the Middle Grades

School Science and Mathematics

General Educational Research

Educational Researcher

American Educational Research Journal

Review of Educational Research

Cognition and Instruction

Harvard Educational Review

Teacher College Record

Appendix A. Directions for Assessment Resources Explorations

A. Inside Mathematics (<http://www.insidemathematics.org/>)

1. Read the introduction to the website.
2. Next click on the Tour of Inside Mathematics Button. Discuss the information that is available to users of the website.
3. Then click on tools for educators:
 - a. Choose a topic appropriate for your grade level.
 - b. Complete the task.
 - i. Is the task conceptually oriented or procedural?

- ii. What would a student gain by completing the task?
- c. Examine student work related to the task.
 - i. What were common mistakes made by students related to the task?
 - ii. What were strategies used by students to solve the problem?
 - iii. What other materials were available to you related to the task?
- 4. View a video appropriate to your grade level.
 - a. What did you gain from viewing the video?
 - b. How could you use the video in a professional development session?
- 5. What did you find to be the most useful component of the site?

B. NAEP Data Tool (<http://nces.ed.gov/nationsreportcard/itmlsx/>)

1. Click on Questions Tools.
2. Next click on Mathematics under the Main NAEP Category
3. Notice the Refine Search column on the left
 - a. Uncheck the categories that you do not to see and check the categories that you do want to see.
 - b. To focus on items that ask for students' explanations check only
 - i. Short Constructed Response
 - ii. Extended Constructed Response
 - c. Notice at the bottom of the Refine Search column that you can select task based on the following categories:
 - i. Select Content Classifications
 - ii. Complexity
 - iii. Ability
 - d. Select Years
 - e. Perform Keyword Search
4. Select an Extended Constructed Response Item representative of a grade level close to yours.
 - a. Complete the task.
 - i. Is the task conceptually oriented or procedural?
 - ii. What would a student gain by completing the task?
 - iii. Examine student work related to the task.
 - iv. What were common mistakes made by students related to the task?
 - v. What were strategies used by students to solve the problem?
 - b. What other information was available to you related to the task?

C. PISA (<http://nces.ed.gov/surveys/pisa/educators.asp>)

1. Click on [Mathematics Concepts and Mathematics Items](#).
 - a. Read through the document.
 - b. How could this document be used with students and/or teachers?
 - c. Examine the mathematics items.
 - i. What is the emphasis of the items?
 - ii. What would students gain by solving these types of items?
2. Explore other areas of the site related to mathematics education.
 - a. What other types of information can one learn from the site?
 - b. What did you learn that you were not aware of related to comparing students in the United States to other countries?