**AUBURN UNIVERSITY**

**SYLLABUS**

1. **Course Number:** CTEE 7446

**Course Title:** Curriculum and Teaching Mathematics

**Credit Hours:** 3 semester hours

1. **Term** Summer 2014

**Day/Time** Distance Learning during summer mini term

**Instructor** Dr. Megan Burton

**Office Address** 5020 Haley Center

**Contact Information** [megan.burton@auburn.edu](mailto:megan.burton@auburn.edu) 844-8141

**Office Hours** With appt. by email, phone, or Skype

1. **Texts or Major Resources:**

Featherstone, H., Crespo, S., Jilk, L.M., and Oslund, J.A. (2011). [*Smarter Together! Collaboration and Equity in the Elementary Math Classroom*](http://www.amazon.com/Smarter-Together-Collaboration-Elementary-Classroom/dp/0873536568/ref=sr_1_1?ie=UTF8&qid=1365432842&sr=8-1&keywords=0873536568)*.* Reston, VA: National Council of Teachers of Mathematics. ISBN 0-87353-656-8

b. Numerous articles will be handed out in class or posted on Canvas.  If posted on Canvas, it is the student’s responsibility to obtain access to read and respond to the article.

1. **Course Description:** Teaching practices and re-appraisal of selecting experiences and content for curriculum improvement in (K-6) mathematics education.
2. **Student Learning Outcomes:**
3. Goal: To help participants enhance teaching of mathematics and their understanding of certain mathematical concepts and skills. To support the development of professional educational leaders who can: 1) analyze critically theories on the teaching and learning of mathematics; 2) evaluate mathematics curriculum and instruction in light of current research on effective teaching.
4. Objectives:
5. Examine scholarly research concerning the teaching and learning of

elementary mathematics.

1. Examine the various dimensions of mathematical curriculum, teaching, and learning
2. Evaluate current curriculum trends based on research, social issues, cultural issues, and discuss political trends that impact mathematics education.
3. Discuss conditions that foster a spirit of mathematical inquiry.
4. Adapt and expand activities and lessons from commercially produced materials;
5. Develop strategies for learners to express their mathematical understanding in multiple ways.
6. **Course Content Outline:**

*The use of technologies for distance learning delivery is essential. The instructor will respond to posts made by students within a week and will respond to emails within 48 hours.*

1. This course is centered on close, careful observation of students and classrooms, lively classroom online discussions, and critically examining standards and theories of teaching and learning. Your participation in online activities and discussions is important not only for your own learning but also the learning of others. Sharing your ideas and questions with the group, as well as responding to those of your classmates, are critical to our work together. As a teacher, you need to do more than understand your own thinking—you have to listen to others’ thinking, figure out what others are saying, and determine whether and how it makes sense. In our class, the “others” will be both your colleagues and the children we see in videos and read about, and myself. Please be open and participate so we can all learn together.
2. Use of *Canvas* system, internet, and email for communication and instruction is an integral part of the course. All assignments must be submitted in either rich text or Microsoft word format unless directions were given to use PowerPoint or some other type of program. ***The file should be saved as your first name and an abbreviation for the assignment***. For example: meganfromtheclassroom.docx. It is the student’s responsibility to check the assignment, once submitted to Canvas, to ensure it went through properly.  It is also the student’s responsibility to check email daily and Canvas regularly for updates and announcements. It is the student’s responsibility to ensure access to the appropriate technology or this distance course. If help is needed with technology, students are encouraged to schedule an appointment with the professor or Auburn University technology personnel.
3. Although this course is a distance course, there will be virtual discussions on assigned readings. Responses to the readings and video clips will be submitted on Canvas according to the schedule. All responses to required readings, videos, posts, etc.for the week must be made before Friday at midnight.
4. You are expected to log on to Canvas and check your email **every week day**. This ensures you are quick to respond should there be any questions or difficulties with your posts or assignments. The assignments for each week are grouped into modules. You should be joining into discussions throughout the week. You will post a minimum of 2 different days during the week with a **minimum of 2 responses to posts by your peers. All posts for the module must be made by Friday at midnight. You should post your first response by Tuesday at 5pm**.

This sounds confusing, but is important to ensure there is interaction in this course, rather than individuals posting without reading the responses of others. Hearing from the others in this class can be very thought provoking and allow you to see perspectives you might not have considered before. An example of a way you could post is: on Monday you could post your responses to the assignments for Monday and Tuesday, on Wednesday you could post your responses to the rest of the assignments and respond to one post by a peer. On Friday you could respond to a post by another peer. You are expected to read all postings of your peers. Another example is to respond to each day’s assignment on that day and to respond to 2 peer posts on Thursday.

Please remember that the assignments you see on Canvas count as both the class time that would occur in a campus class and the homework that would be required for this course. Because this is a mini-semester, the workload will be intense. Please don’t hesitate to contact me with any questions or concerns. I am here to support you as much as possible. I am available to meet on campus, Facetime, Skype, or respond via email. I will respond within 24 hours to any email I receive.

My checklist to ensure you are responding appears like this:

Answered all required posts appropriately: Y/ N\_\_\_\_

Posted on e different days: Y/N\_\_\_\_

Responded to 2 posts by peers: Y/N \_\_\_\_\_

Posted first post by Tuesday at 5pm: Y/N\_\_\_\_\_

Posted all required responses and peer responses by Friday at midnight: Y/N\_\_\_

***Schedule***

*The weekly schedule below displays for the student how each assignment could be carried out if he/she wished to treat this as a scheduled class with daily meetings and assignments. However, the description above (and organization of modules) clarifies that each week students may complete the readings and posts at any point (with posts during 2 different days). You may not work ahead in modules, as interaction is important in this class.*

1 Week of June 23- June 27

June 23 Introductions

Your Math history

The importance of affect in mathematics

Assignment: Read Chapter 1

June 24 What is math understanding?

Problem Solving & the Mathematical Practices

Assignment: Read Chapter 2

June 25 Number Concepts

Problem Solving

June 26 Number Concepts/ Computation

              Communication- Sharing Problems- Mental Math

June 28  Learning from and responding to others

2 Week of June 30- July 3

June 30 Cooperative Group Work

Assignment: Read Chapter 3 & 4

July 1 Fractions, decimals, and percents/ Talk Moves

Manipulatives/ Representation

July 2 Fractions, decimals, and percents

July 3 Fractions/ Real world connections- *Mamadou-Half-Rectangle*

3 Week of July 7-July 11

July 7 Addressing Status Issues

Assignment: Read Chapter 5

July 8 Surface Area

Differentiation

July 9 Geometry

Differentiation

Assignment: Read Chapter 6

July 10 Algorithms/ Improper fractions

July 11 First grade addition/ Subtraction

4 Week of July 14- 18

July 14 Selecting Group Worthy Tasks

Read Chapter 7 & 8

July 15 Data Analysis

Probability

July16 **From the Classroom Paper**

July 17 Algebra

July 18 Integrating Subjects

5 Week of July 21- 25

July 21

July 22 Technology

July 23 **Exploration Into Topic of Choice Due**

July 24 Responding to topics of choice

July 25 Responding to topics of choice

Exam See University Schedule: Reflection: What is mathematical teaching and learning?

1. **Assignments/Projects:**

A. Exploration into Mathematical Issue, Practice, Curriculum, or Materials (15pts) Due 7/23

Students will select an issue practice, curriculum, or material that they would like to explore in greater depth. This will include at least 5 references. Students will design a way to share the information they have gained in a useful way with their peers. This could be by creating a unit, sharing a PowerPoint, sharing resources related to topic, etc.. The ultimate purpose of this assignment is to allow students to gain deeper understanding on a topic they are interested in and to gain a collection of resources from their peers. Students will be required to comment, share ideas and/ or ask questions on the information shared July 24 & 25

B. “From the Classroom” Paper (15pts) Due 7/17:

Students will write a paper about a technique, strategy or insight you have about teaching mathematics. It could be a description of a lesson, strategy, concept, or program you have found successful. The article will include a description of classroom context, learning, teaching and the thoughtful reflection on the issue. The article must reference a minimum of 2 articles and must be connected to the CCS. This paper will follow the manuscript format from the journal Teaching Children Mathematics. See example: <http://www.nctm.org/publications/article.aspx?id=32646>  and see instructions 1-8: <http://www.nctm.org/publications/content.aspx?id=22602>

C. Sharing Problems (4 points each= 20 pts):

Each week students will explore problems presented on Canvas. They will first work the problem on their own and take a picture to record their strategy (to share with the class). Then they will watch the classroom scenario and analyze what they see:

1. They will share the content that was explored (both content standards and standards of math practice).
2. How they solved the problem.
3. The understandings and/ or misconceptions they see from the student.
4. Ideas about future lessons, experiences, and/or problems for these students.

D. Seminar Participation & Responses to Readings (10 pts per week= 50 points):

Although this course is a distance course, there will be virtual discussions on assigned readings. Responses to the readings and video clips will be submitted on Canvas according to the schedule. A guide will posted on each module and at times the response is an open reaction to the readings. All responses to required readings, videos, posts, etc... for the week must be made before Friday at midnight.

For this component, you are expected to log on to Canvas and check your email **daily**. The assignments for each week are grouped into modules. You should be joining into discussions throughout the week with a **minimum of 2 posts that respond to peers in addition to your own posts about assignments. All posts for the module must be made by Friday at midnight. You should post your first response by Tuesday at 5pm**. You are expected to read all postings of your peers. Please remember that the assignments you see on Canvas count as both the class time that would occur in a campus class and the homework that would be required for this course. Because this is a mini-semester, the workload will be intense. Please don’t hesitate to contact me with any questions or concerns. I am here to support you as much as possible. I am available to meet on campus, Facetime, Skype, or respond via email. I will respond within 24 hours to any email I receive.

*Distance learning students will have access to libraries, learning centers, and/or laboratories on campus if they are local. They may also access all required materials electronically and are welcome to use their local libraries and personal computers.*

1. **Rubric and Grading Scale:**

Of course mastery of the material covered in this course is of greater importance than the actual grades.  I welcome individual discussion of progress in the course, including grades, at any time. The grading scale used for this course will be:

90 - 100 points = A

80 -89 points = B

70 -79 points = C

60 -69 points = D

59 points or below = F

1. **Class Policy Statements:**

*Following are AU recommended class policy statements. Any modifications are to be approved by the department head who will consult as needed with the associate dean for academic affairs to ensure consistency with university policies.*

1. Participation: Students are expected to participate in all class discussions and participate in all exercises. Assignments are due on announced dates. Unexcused late assignments are unacceptable. 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. Students must satisfy all course objectives to pass the course.
2. **Excused Absences**:  Students are granted excused absences from class for the following reasons:  Illness of the student or serious illness of a member of the student’s immediate family, the death of a member of the student’s immediate family, trips for student organizations sponsored by an academic unit, trips for University classes, trips for participation in intercollegiate athletic events, subpoena for a court appearance, and religious holidays.  Students who wish to have an excused absence from this class for any other reason must contact the instructor in advance of the absence to request permission.  The instructor will weigh the merits of the request and render a decision. When feasible, the student must notify the instructor prior to the occurrence of any excused absences, but in no case shall such notification occur more than one week after the absence.  Appropriate documentation for all excused absences is required. Please see the [Student Policy eHandbook](http://www.auburn.edu/student_info/student_policies/) for more information on excused absences (<http://www.auburn.edu/student_info/student_policies/>).
3. **Make-Up Policy:**Arrangement to make up missed major examination (e.g. hour exams, mid-term exams) due to properly authorized excused absences must be initiated by the student within one week from the end of the period of the excused absences.  Except in unusual circumstances, such as continued absence of the student or the advent of University holidays, a make-up exam will take place within two weeks from the time that the student initiates arrangements for it. Except in extraordinary circumstances, no make-up exams will be arranged during the last three days before the final exam period begins.  The format of the make-up exam will be (as specified by instructor).
4. **Disability Accommodations:** Students who need accommodations are asked to electronically submit their approved accommodations through AU Access and to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. To set up the meeting, please contact the instructor by e-mail. If you have not established accommodations through the Office of Accessibility, but need accommodations, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096 (V/TT).
5. Honesty Code:  All portions of the Auburn University student academic honesty code (Title XII) found in the [*Student Policy eHandbook*](http://www.auburn.edu/student_info/student_policies/) will apply to this class.  All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee.
6. Course contingency: If normal class and/or lab activities are disrupted due to illness, emergency, or crisis situation, the syllabus and other course plans and assignments may be modified to allow completion of the course. If this occurs, and addendum to your syllabus and/or course assignments will replace the original materials.

*In addition to the university recommended statements noted above, College of Education syllabi are to include the following statement:*

1. 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