**CTEE4040 A– Curriculum Mathematics**

**Haley Center 2414/ Tuesdays  9:30-11:20/ Lab MWF 7:30-3pm**

A.   Catalog Description: This course includes the principles, current thinking, and approaches to the teaching of elementary school mathematics. It also includes the relationship between pedagogy and mathematical understanding appropriate for the instruction of children in kindergarten through grade six.  During this course the students will participate in part of the AMSTI precertification training for schools in the state of Alabama.

B.   Course Credit: Three hours

C. Prerequisites: This section is restricted to Elementary Education Cohort C

D.   Intended Audience: Undergraduates pursuing Elementary Teacher Certification

E. Instructor: Megan Burton, PhD

                    Department of Curriculum and Teaching

                    5020 Haley Center

F. Office Phone: (334) 844-8141

G. Cell Phone: (803) 338-1800\* Please only use in emergencies

H. Email: megan.burton@auburn.edu or meb0042@auburn.edu  \* please note that there is another Megan Burton at auburn so ensure you are using the correct email. It is the student’s responsibility to ensure the correct address is used.

**I. Course Goals and Objectives**

**A. Goal:** To critically analyze curriculum and the process of teaching and learning mathematics in the elementary grades.

**B.     Objectives**Students will:

1. Increase their knowledge of current reform in mathematics education (NCTM) & Common Core Standards (CCS) in regard to developmentally appropriate curriculum and methods.
2. Recognize the importance of communication skills in themselves and in the children they teach, including strategies for reasoning, problem solving, inquiry and debate.
3. Have knowledge of techniques for using manipulative materials and play as instruments for enhancing development and learning.  Recognize and develop lessons that use techniques such as mathematical recreation, manipulative materials, and technology to enhance development and learning.
4. Develop and implement appropriate lessons and curricular materials for the (K-6) classroom that reflect meaningful mathematics and build on prior knowledge.
5. Recognize the importance of special factors that influence learning and how to provide for them,
6. Demonstrate knowledge and ability to plan and use a variety of appropriate individual and group activities that build on student interests and emphasize student participation in a stimulating classroom space.
7. Demonstrate knowledge to be used in selecting, organizing, and evaluating available space, resources, experience and equipment for the elementary curriculum.
8. Teach mathematics to children in real public school (K-6) classrooms using Alabama state guidelines, CCS Standards, and NCTM Standards, including planning, integration of content areas, implementation, and reflection/evaluation.
9. Demonstrate knowledge of the characteristics of appropriate and effective learner-centered lessons and units that integrate technology, and the resources for enhancing professional growth using technology.

**II. Required Texts:**

            Student Membership to the National Council of Teachers of Mathematics. You may join at: <http://www.nctm.org/benefits-student.aspx>. We will be using information and reading articles that may only be accessed with membership.

Bamberger, H. J., Oberdorf, C. & Schultz-Ferrell, K. (2010). *Math misconceptions: From misunderstanding to deep understanding*.  Portsmith, NH: Heinemann

**Required Materials**

Current copy of TB Test, composition notebook, nonphoto blue pencil (may be purchased at J&M downtown) 2 dvds, mini-DV videotapes if using the LRC digital cameras (one for math an one for science lesson), school pouch with supplies (tape, mini-scissors, mini-colored pencils (12 set), pencil, black ink pen, white out, calculator, protractor, compass), flash drive, COE name-button *[See Thomas in LRC for buttons.]* Materials needed to construct instructional charts, games, and other teaching resources.

**Alabama Course of Study 2010**<http://www.alsde.edu/general/ALCCS_Alabama_Mathematics_Course_of_Study.pdf>

**III. Evaluation**

|  |  |  |
| --- | --- | --- |
| **Date Due** | **Requirement** | **Value** |
| All class sessions- Oct. 2 & Nov. 16 | Class Activities and Journal entries-15 points will be earned and posted by midterm and the remaining 15 points will be posted at the end of the semester | 30 points |
| Sept. 18 | Math Unit | 20 points |
| Matches content day on calendar  | Investigative Co- teaching | 10 points |
|  August 29 | Math Games Assignment | 10 points |
|  Nov. 13 | Professional Work Sample | 20 points |
| August 24 | Math Webquest Assignment | 10 points |
|  See lab manual | \*Summative Lab Evaluation Form |   |
| See lab manual | \*\*Weekly Lab Hours & Professionalism Form  **(All copies required)** |   |
| *See lab manual*  | *\*\*\*EducateAlabama* Observation Form **(‘Emerging’ Performance Required on all standards)**  |   |
|   |   |   |
|  | **Total** | **100 points** |

**\***\*\*Meeting weekly attendance, planning, teaching, and professional dispositions in the classroom is required for all field students in this course to show readiness for internship. Students who are not continuously meeting all of these expectations will fail their lab placement and this course. **See Lab Placement Handbook.**

\*\*\*Students must meet professional performance expectations as beginning teachers at the ‘emerging’ level on all Standards and indicators listed on the *EDUCATEAlabama* Observation Form in order to pass this course. **See Lab Placement Handbook.**

\*\*\*\*Students must meet the total required lab hours and Standards on the EDUCATE Alabama Observation Form in order to pass this course. **See Lab Placement Handbook.**

**All assignments must be completed in order to get credit for this course, even if turned in late for less credit.**

The Auburn Standard Grading Scale will be used to determine grades for this course.

A   =  90-100          B   =  80-89           C   =  70-79

D   =  60-69            F    =  below 60 points

**IV. Academic Requirements**

1. Class Activities and Journal: This course is designed to allow opportunities to ask questions, contribute to class discussion, and share relevant experiences.  Therefore, *participation and professionalism are extremely important.*  Requirements for acceptable participation include prompt, timely, and consistent attendance; attentiveness; verbal contributions to small group and whole class discussions; reflection of a positive attitude about learning and class participation; and respecting and supporting the needs of others, including the professor. Participation includes completing all assignments which facilitate the class and or cohort experience including displaying materials, sharing teaching ideas and examples of classroom incidents, writing productively and correctly in all written assignments, and bringing in other materials/information as requested.  Actively participate in class in ways that reflect your preparation including thoughtful completion of required readings. At times this may also involve assignments that you need to complete during your field work and bring back to class. Information about each assignment will be shared in class. You will receive a mid-semester and end of the semester score for a total of 30 points.

You will complete math journal entries that are related to your experiences in the field, readings, activities, and class discussions. They are designed to help you make connections between the readings, mathematical content and your fieldwork.

2. Math Website Assignment:   The webquest activity is designed to provide an opportunity for students to explore virtual manipulatives and other mathematical resources that are available online to support student learning. It is also designed to encourage you to explore the Common Core, the Alabama State Standards, and the NCTM website.

3. Student Mathematics Games: Games are a central part of mathematics. Games develop familiarity with the number system, provide opportunity for practicing computation, encourage strategic thinking, develop fluency with numbers, and provide a school to home link. While students play games, the teacher is free to observe student’s work or to work with few students individually. You will find at least 2 different small group math games according to constructivist guidelines developed by Kamii (2000). Both games will be brought to class and played on the due date. You will prepare a description of each game with the purpose, specific directions, materials, and way to determine the winner. This will be posted in Canvas under Collaboration for your peers AND under Assignment for Dr. Burton to grade.

4. Math Unit**:**Compiled by each student on a mathematical concept or big idea of his or her choice. The unit will include math activities, that match the Common Core Standards and the CCS Mathematical Practice. It will also include content skills, children’s literature, assessments, websites, and a vocabulary list. This unit will be based on the same topic as the AMSTI activity presented to the class, unless otherwise approved by the instructor. A rubric for evaluation will be provided.

5. Investigations Co-teaching: Includes joint preparation and implementation of an Investigation lesson from an AMSTI math bundle. The co-teachers will share the lead in teaching this lesson to their peers during class. A rubric for evaluation will be provided.

6.Professional Work Sample: Includes pre-thinking about a lesson, a lesson plan, videotaped teaching, written and oral observer feedback, evidence of student learning (i.e., assessment, analysis, samples), and written reflection on practice towards continuous improvement. The reflection should include information learned about planning, teaching, and learning mathematics. Details of this assignment are given in the *Field Placement Handbook*. ***The instructor reserves the right to request additional teachings based on unsatisfactory performance.***

 7. Lab Professionalism and Observation Forms: Document your attendance, professional dispositions, and planning and teaching abilities in your field placement. You must meet weekly professional expectations in the field in order to pass this course – no continuous absences (more than 2) and no continuous NO marks on professionalism and teaching indicators. You must also demonstrate your abilities in teaching at the emerging level on all standards and indicators listed on the *EDUCATE Alabama* observation form in order to pass this course. ***See the Laboratory Placement Handbook for all lab forms and details.***

**V. Administrative Requirements**

1. Attendance is required at each class and scheduled lab time.  Students who miss class or lab because of illness need a doctor’s statement-note for verification of sickness and should clear the absence with the instructor no later than seven days after the absence per university policy. Other unavoidable absences from campus or lab must be documented and cleared with the instructor **in advance**.

* Excused absences include official and university-accepted documentation. You must also notify your instructor and cooperating teacher whenever possible PRIOR to any missed time. You will be required to make up missed lab time.
* **At two absences from class students will be required to meet in conference to discuss continuing in this course.** [See Lab Manual for similar lab attendance policy]. Students will be counseled and placed on an attendance contract in order to continue in the course. Expected professional dispositions and performance competencies in this field-based course require students to meet attendance requirements.
* Five points will be deducted from the final grade for any unexcused absence from class or lab. **At 2 unexcused absences students will be referred to the Office of Student Affairs to be withdrawn from the course.** Three unexcused tardies will be counted as one unexcused absence. Leaving class early counts as an absence without prior (not same day) approval.

2. 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: Engaging in responsible and ethical professional practices, contributing to collaborative learning communities, demonstrating a commitment to diversity, and modeling and nurturing intellectual vitality

     Each student is expected to exhibit courteous, mature, responsible, and professional behavior. This includes not texting messages during class, doing work for another class, not being prepared for class, and talking when someone else – a peer or instructor – is speaking. Students are expected to participate in all class discussions and participate in all exercises in class and outside of class. 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.

3. Some assignments will involve integrating readings & websites into your reflections & lessons. Plagiarism is the act of representing words, data, works, ideas, computer program or output, or anything not generated by the student as his or her own.  Plagiarism may be inadvertent or purposeful; however, plagiarism is not a question of intent.  All suspected incidences of plagiarism must be reported by the course instructor to the Assistant Dean of the College of Education.  Plagiarism is considered a serious act of academic misconduct and may result in a student receiving an “F” in the course and being suspended from the University.  Please be sure to cite any outside sources used in work.  Also all work is to be done individually unless otherwise specified.

4. Use of *Canvas* system, internet, and email for communication and instruction. All assignments must be submitted in either rich text or Microsoft word format unless directions were given to use PowerPoint or Excel. It is the students’ responsibility to check the assignment, once submitted, to ensure it went through properly.

5. Students will be expected to demonstrate basic skills in reading, writing, speaking, and mathematics. Assignments that have multiple mathematical, grammatical, or spelling errors will have to be revised correctly at a letter grade point loss.

6. Graded course assignments are due on the assigned date and must be completed in a thorough manner. Major assignments that are incomplete or not done on time will lose points equal to one letter grade for each day late up to three days. All assignments must be completed, whether or not credit is given, in order to pass this course. **Late weekly assignments will not receive credit.**

7.  There will be no unannounced quizzes.

8. 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. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me 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).

9.  The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.  Plagiarism policy is strictly enforced.

10. Cell phones need to be turned to off during class and lab experiences. In addition, students should not work on university course assignments that are not field based during their lab experience. During lab experiences students are expected to be fully and actively involved in the classrooms in which they are placed.

**Expectations: Professionalism:**The following standards will be honored to create a professional learning environment.

1. Attendance and punctuality demonstrate that you value this course. Classroom teachers model these behaviors for their students.
2. It is a good idea to develop a buddy system with others in class in case of unexpected absences.  You will need to find out from a classmate what you’ve missed.
3. Teaching is a field that requires professional reading and reflection.  Your thoughtful reading before class, your engaged participation in class discussions and activities, and the positive stance you take in interacting with your instructor and with others in the group are expected.
4. Attend carefully to class presentations and discussions.  Professionalism is more than just showing up for class.  In this course you will be expected to treat the others in our group with respect and to support their successes. Respect does not mean always agreeing with others.  It means allowing others their dignity.  It means actively and courteously listening to what others say and responding with your own perspective.  It means taking an active role and enhancing others’ thinking by sharing your own rough draft thinking as it develops, and by clarifying the reasons that you might “agree to disagree” with others.  Developing strong relationships with colleagues is one of the most important things we do as a teachers.
5. **As a courtesy to the class, please do not leave on beepers, phones or pagers in class.**

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 as follows: (a) engage in responsible and ethical professional practices (b) contribute to collaborative learning communities (c) demonstrate a commitment to diversity (d) model and nurture intellectual vitality.

**CTEE 4040 Calendar**

* August 17: Introductions, Syllabus, What Do We Know
	+ HW: Read article and be prepared to discuss on Monday
	+ In your math notebook write 2 things that resonated with you about the article
* August 20: What Is Effective Teaching
	+ HW: Read one of the 2 articles on Canvas and view the video *Mingle and Count.* Write one thing that resonated with you from the article and one from the video. This could be a question, observation, concern, disagreement, or "ahaa" moment.
* August 21: Communication
	+ HW: Read one of the 2 articles on Canvas and write 2 things that resonate with you.
* August 22: Number Sense
	+ HW: Read 1 of the 3 articles and summarize in your notebook. You will share with your peers who read a different article. Be sure to select one specific idea that you learned, concerned you, or surprised you.
* August 24: Assignment Due
	+ WEBQUEST DUE
* August 27: Multiplication/Division
	+ HW: Read Chapter 1 of Math Misconceptions and write something that resonates with you about each of the following: Addition, Subtraction, Multiplication, Division, Factors, Fractions, and Decimals.
* August 28: Factors
	+ HW: Bring your 2 math games to class with the all materials prepared for 2-4 people to play each game. In addition post the handout under assignment for Dr. Burton to grade and post the same handout on the discussion board.
* August 29: Algorithms and Math Games and Assignment Due
	+ Assignment Due: Math Game
	+ HW: Read one of the 2 articles on Cooperative Learning. Post your reflection in your notebook.
* September 4: Handbook Class
* September 5: Cooperative Learning
	+ HW: Read Chapter 3- Geometry in Math Misconceptions
* September 6: Math-Geometry
	+ HW: Read Chapter 4 in Math Misconceptions and make an entry in your notebook.
* September 7: Measurement
	+ HW: Read an article you find in Teaching Children Mathematics that relates to questioning, discussions, and dialogue in math. Write an entry in your notebook and be prepared to share a summary with your peers. You will need to note the month and year of the edition you used.
* September 11: Questioning
	+ HW: Bring your math unit to class. Be prepared to discuss and share it with your peers.
* September 18: Sharing Math Units and Assignment Due
	+ Assignment Due: Math Unit
	+ HW: Find an article from *Teaching Children Mathematics* that explores fractions, decimals, or percents. Read the article and write a short summary in your journal. Be prepared to share the summary and your reaction with your peers.
* September 25: Fractions
	+ HW: Select one of the articles on Canvas and write a summary of it in your notebook. Be prepared to share a summary and your reaction with your peers.
* October 2: Decimals, Fractions, and Percents and Assignment Due
	+ Assignment Due: Journal and Class Activities
	+ HW: Read Chapter 2: Algebra and make notes in your notebook.
* October 9: Algebra
	+ HW: NONE ☺
* October 16: Differentiation
	+ HW: Find a *Teaching Children Mathematics* article on Parental Involvement. Take notes about the article in your notebook.
* October 23: Parental Involvement
	+ HW: Read chapter 5 and make notes in your notebook.
* October 30: Data Analysis and Probability
	+ HW: Read Chapter 6: Assessment and make notes in your notebook
* November 6: Assessment
	+ HW: PWS due next week
* November 13: Classroom Community and Assignment Due
	+ Assignment Due: PWS
* November 16: Course Performance Conferences
	+ Assignment Due: Journal and Class Activities
* November 27: Reflecting on Teaching and Assignment Due
	+ Assignment Due: CoTeaching Investigations
* December 4: Next Steps