Instructor: Beth Lloyd, Ph.D.
Office: School of Education, Health, and Human Performance, Room 227
Office Phone: 953-7432
Email: LloydB@cofc.edu
Office Hours: Wed: 9-11:30 am; Thurs: 1-3:30 pm; or by appointment
Email Hours: Mon & Tues: Latest check and response 4 pm; Due to teaching/meeting schedule, do not expect immediate feedback if email after office hours on Thursday (may not respond until M)
Home Hours: Mon & Tues: 10-4; call: 843.873.8090; if not home, leave a message with #

Course Description:
This course focuses on the knowledge, dispositions, and performances necessary for quality early childhood mathematics education. Emphasis is on developmentally appropriate instructional strategies linked to the grades 2-8 content and process standards. Active learning, lesson planning, ongoing and worthwhile assessment, and informed teacher decision-making are major components.

Required Texts:


Recommended Text:
Available online at www.nctm.org

Class Supplies:
Common Core Standards (both practice and content) for mathematics 2-8 (online http://www.corestandards.org/Math)
NCTM Standards (both process and content) for 2-8 (online http://nctm.org/standards)
Smarter Balanced Assessment Consortium (online http://www.smarterbalanced.org/)
Value of collaborative and cooperative work, *thoughtful, constructive critiques of others’ work, participation in class activities*

Sensitivity toward community and cultural contexts, *participation in class and group discussions, tolerating, discussing, and respectfully listening to differing points of views*

Engagement in responsible and ethical practice, *performance on assessments, class attendance, and participation in group activities*

Development of professional mastery over time, *performance over time in writing, thinking, and expression of knowledge*

Utilization of Computer Applications (Available in the CofC managed computer labs located in JC Long, Library, and other campus sites. If unfamiliar with these applications, set up a time for tutoring with me.)

- Internet
- Word processing
- OAKS

Completion of all assigned readings and assignments **ON TIME.**
See Course Assignments below for detailed descriptions.

**Responsibility for ALL course content**
Including lecture, text, outside reading, handouts, research, etc.

**Responsibility for keeping up with grades and attendance**
If you miss a class, ask a classmate for the missed assignments and notes.

**Course Assignments:**
Due dates for course assignments, as well as scheduled exams, are listed on the tentative daily schedule at the end of the syllabus. Any changes will be announced in class or posted on OAKs. All assignments must be turned in during the class on the date due. If, for medical or serious personal reasons, an assignment is late, the instructor should be informed of the reasons. Otherwise, **each late course assignment will receive a FIVE-PERCENT deduction per day that it is late.** **DO NOT** give assignments to School of Education personnel. Assignments will NOT be accepted via email (unless specified explicitly).

All assignments must be typed and follow APA style guidelines, unless otherwise specified.

**Tests (2)**
TCs will be expected to complete two in-class tests. Material on these assessments comes from (1) in-class warm-ups, lectures, discussions, and activities; (2) out-of-class readings and assignments; and (3) NCTM and Common Core Standards. (Dates indicated on the schedule.)

**Reading Reflections & Focusing Questions and Tasks (RR/FQ) (8) – JOURNAL FORMAT**
To maximize the development of how to teach mathematics, it is imperative that TCs engage in their readings. Some of the readings will be addressed in class, but due to the vast body of pertinent literature in this field, some of the topics covered in the out-of-class readings will not. Therefore, to ensure active engagement with the readings and maximum knowledge gained from this course, TCs will be responsible for reflecting on readings throughout the semester.

TCs are to respond to **assigned** focus questions per week. Too, TCs are to reflect on each week’s reading by indicating points of confusion, descriptions of “AHA!” moments, topics connected to field, topics connected to personal experiences in school or with other children in school, and/or topics of concern (elaborating on why a concern). **DO NOT SUMMARIZE; SUMMARIES ARE NOT REFLECTIONS.**

At the beginning of the class indicated on the daily schedule, TCs will discuss the questions and reflections with their peers and/or with me and add insightful comments to their work as they see fit. Forms of assessment will vary related to this assignment (individual conferences, collection of responses and reflections per individual, collection per group, checklist based on responses during class discussion, site checking for completion, or open-notes/closed readings quiz). Feedback will be provided either on individually or to the class as a whole.
If late to class or not in class the day these are due, TCs will not receive credit for the assignment.

Mathematics is Everywhere
Throughout the semester, TCs should take note of how the CCSS for Mathematical Practice are integrated into other courses and in the real world. In a table format, with one of the eight CCSS Mathematical Practices per row, TCs should indicate the “location” where they observed the practice and provide a brief narrative describing what they observed and why it aligns with the given practice. At least two examples should be observed per week.

Due: Week 11

Clinical Interview
TCs will interview two adults (not at the same time), to gain insight into their understanding and conceptual processes for solving a mathematical task. Interviews should be audio or video taped. After the first interview, TCs will reflect on how it went and what to do differently. TCs should take detailed notes of the reflection as it will be part of the final write up. The write up will include the following sections:

Global Introduction
Briefly describe what a clinical or diagnostic interview is.
Briefly describe the value of this type of assessment.

For Both Interviews: Specific Introduction
Report the question(s) used and (1) identify the content that the question(s) is/are intended to elicit in the interviewee’s thinking and (2) identify the conceptual ideas you expect the interviewee to elicit when answering this question.
Give a brief introduction of the interviewee (something about their background).
Describe the setting where the session took place, and how you introduced the activity to them.
How do TCs expect the interviewee to answer the question posed?

Description of Interviewees’ Ways of Thinking...
Provide a description, remembering that the focus is on the development of the ideas, thus, important to describe what the interviewee’s ideas (not the TC’s) were. Focus should not be on what the solution to the problem is but more on the interviewee’s conceptions, explanations, and views.
TCs are there to listen, not to intervene. Thus, no teaching or suggestions for solution should be given during the interview. Once TCs have faithfully reported on the interviewees’ ways of thinking about the specific content selected, it is time to make interpretations.

Interpretation About Your Interviewees’ Ways of Thinking
How would TCs explain or interpret the interviewee’s ways of thinking about the question posed?
What did TCs find out about the interviewee’s knowledge on the particular concept/idea selected?

Thoughts: What did TCs learn from this interview?
How did TC’s initial expectations about how interviewees were going to answer compare to how they answered. Were they the same? Different? Did anything surprise TCs? Explain.
INTERVIEW 1: What problems did TCs encounter? Would it have been possible to avoid them? If so, how?
INTERVIEW 2: If TCs were to have a second interview with the same person, and the purpose was to extend the interviewee’s ways of thinking, what would TCs teach him/her?

Global Conclusion
What did TCs learn about Clinical Interviews (as a Methodology)?
What did TCs do differently in the second Clinical Interview compared to what was done in the first one?
TCs should mention 3 things that were the most important guidelines for conducting an interview.

Appendix: Transcript and Participants’ Work
TCs are to create a transcript of each interview and attach all interviewees’ work, including their final solutions.

Length: 1500-2000 words, not including Appendices

Due: Week 9
Grading Criteria on OAKs

WWW Lesson Plan
TCs will choose an activity or lesson from any NCTM source (Illuminations, TCM, MTMS, etc.). The activity must incorporate an online resource in a meaningful way (i.e., Illuminations interactive tool, NASA data, Weather data, etc.) that has value for teaching mathematics. TCs will have 3-5 minutes to show the resource using the classroom computer. The purpose of this project is to integrate technology (in this case the online resources) into the development of worthwhile tasks for teaching mathematics.

Specifically, TCs are to construct one full lesson plan based on one online resource. The resource sites can be sites with data and/or other information that are useful for developing a lesson, or they can be sites that contain actual interactive activities. Chosen activities/lessons should be problem-based, student centered, and truly enhance learning – not just to show use of technology for technology sake. Additionally, chosen activities/lessons should not be part of traditional, direct instruction or drill and practice. Given that TCs will be assessed on the quality of their lessons rather than where they came from, TCs likely will need to adapt what is found to make sure the quality of the tasks meet the criteria of the provided lesson plan. TCs’ lessons should reflect the characteristics of effective lessons outlined in class. TCs must choose a grade level from 2 - 8 and can assume that students have access to the web either in the school library or their classroom.

The assignment will have 3 major components: the creation of a lesson, providing feedback to others, and the revision of his/her own lesson based on peer feedback. See the grading criteria below for specifics.

Post draft to a class discussion board. Read and give feedback on 3 drafts; if there are already 3 feedback posts, TCs must do someone else. To ensure a TC’s spot as a reviewer for a particular lesson, TCs should commit with a temporary post that is to be replaced by the actual review. Feedback elements include:

- What you like and why?
- What you don’t like and why?
- Are all of the EHHP lesson-plan components present and appropriately connected? For example, are all the materials listed needed for what the procedures indicate; do the objectives, standards, and assessments relate; are the suggestions made for addressing individual differences related to the objectives and standards; etc.
- Is there sufficient information in the write-up for you to use it “as is” to teach a lesson? If not, what is missing?

THIS IS AN EXERCISE ALIGNED WITH MATHEMATICAL PRACTICE STANDARD 3: Construct viable arguments and critique the reasoning of others.

For the final project to be submitted, TCs are to create a bulleted summary of the feedback received, commenting on how it was addressed within the revised lesson plan. This should be between one and two pages, typed, and double spaced. They must also include the revised lesson plan. TCs should highlight revisions made based on peer feedback. TCs must also include an appendix of the feedback they provided for their peers.

Draft due to discussion board: WEEK 4  
Peer feedback to discussion board: WEEK 5  
Final project and brief presentation due IN CLASS: WEEK 6

Grading criteria on OAKS

Teaching Children Mathematics (TCM) and Mathematics Teaching in the Middle School (MTMS): Shared Lessons  

Teaching Children Mathematics (TCM) and Mathematics Teaching in the Middle School (MTMS) are official journals of the National Council of Teachers of Mathematics (NCTM) and a forum for the exchange of ideas in curriculum, instruction, learning, and teacher education. The primary audiences of TCM and MTMS are elementary-school teachers and upper-elementary/middle-grades teachers, respectively. The journals contain many articles with ideas that are directly applicable to the classroom. The objective in having TCs look at the journals is to help them gain familiarity with them as resources for teaching mathematics.

TCs are to find an activity in TCM or MTMS (or another NCTM resource) that fits their assigned content area and grade level. There are to be no duplicates in activities. TCs are to write a complete lesson plan using this activity. The lesson plan should contain all of the components of the EHHP lesson plan format provided on OAKS and discussed in class.
TCs will (a) provide a copy of the lesson to and (b) rehearse the lesson for their content group prior to presenting it to the class. The content-group peers must EACH provide constructive feedback about the lesson plan and implementation. Feedback elements include:

- Are all of the components present and appropriately connected? For example, are all the materials listed needed for what the procedures indicate; do the objectives, standards, and assessments relate; are the suggestions made for addressing individual differences related to the objectives and standards; etc.
- Is there sufficient information in the write-up for you to use it “as is” to teach a lesson? If not, what is missing?
- Does the lesson meet the criteria for being a problem-based lesson? Why or why not?
- During the presentation, what was communicated well? What was not communicated well? How could communication be improved so to maximize student learning?
- Did the implementation of the lesson match the lesson plan?

**TCs will not be permitted to teach the lesson to the class unless approved by their peer group ahead of time. If for some reason, a content peer did not provide feedback, documentation must be presented to indicate an attempt was made early enough for the peer to provide expected feedback.**

Each TC will have time set aside in class to review how the lesson should be implemented to a classroom of students. This means that TCs should have all of the materials ready to demonstrate the lesson to their classmates. They will have fifteen minutes per group (three groups total – 2-3, 4-5, and 6-8) to go over the lesson implementation. Peers are expected to provide “the teacher” with constructive feedback. TCs will utilize this feedback to update the lesson.

To be submitted to me a week following the lesson demonstration/rotations: (1) TCs should write a brief explanation of why they chose this article and its activity to share with their classmates (see grading criteria for specifics). (2) TCs must include all peer feedback in a bulleted list (telling who it came from). (3) TCs must include the final lesson plan draft which should take into account both the content-peer feedback and the remaining peer feedback from the day of the demonstration. In some organized, clear fashion, the feedback used to revise the final draft should be indicated on the final draft (tracked changes, highlighting, comments, change in font color, strike-through font, etc.), (4) a brief written reflection (see grading criteria for specifics), and (5) an appendix with the TCs feedback to his/her content peers.

These lessons are categorized by the NCTM content standards. Presentations will be in center format. That is, there will be three centers – 2\textsuperscript{nd}/3\textsuperscript{rd}, 4\textsuperscript{th}/5\textsuperscript{th}, and 6\textsuperscript{th}/7\textsuperscript{th}/8\textsuperscript{th}. Each center will have 15 minutes to teach a small group. Small groups will rotate through all three centers. Presenters must keep in mind the time limit, along with what materials they need to teach to all three groups. The rationale for sharing lessons in this center format is to allow each TC multiple times to teach the same activity, ideally improving with each iteration, and to provide TCs with a multitude of lesson ideas for future teaching across the grade band.

**Draft and Rehearsal:** Due A WEEK BEFORE PRESENTING IN CLASS to content peer group for approval and feedback

**Presentation:** Due date indicated on daily schedule

**Final Project:** Due a week following the presentation

**Grading Criteria and Lesson Plan Template on OAKS**

**SUGGESTION:** TCs should begin building a toolbox of lessons/activities based on what is shared in this class. I recommend that throughout the semester, TCs compile the lessons gained from their classmates into a portfolio organized either by grade level or content standard. TCs are reminded that they can email their classmates via OAKs or request that I post their lessons to OAKs.

**Curriculum Analysis Final Project**

TCs will be assigned units from a mathematics curriculum to **analyze and revise** to address a certain content area within the CCSS. As a group or in pairs, they will (1) analyze the ENTIRE unit, guided by the questions below; (2) revise and/or replace one lesson within the unit, choosing the lesson that is least effective in meeting the standards in a problem-based manner based on your analysis; and (3a) present to the class the results of the analysis and (3b) demonstrate the revised lesson, explaining why it was chosen and how it was adapted.
Questions to address in completing the narrative related to: Nature of classroom tasks, Social culture of the classroom, and Equity and accessibility

Do the tasks require students to think as opposed to simply practice?
Do the tasks encourage reflection, communication, and/or cooperative learning?
Are the tasks engaging and interesting enough that students want to pursue them? Specifically, are the tasks intrinsically motivating?
How well do the tasks take into account related tasks from previous experiences, both in and out of school?
Is the required thinking mathematical as opposed to simply rote learning?
Are the Common Core mathematics standards ACCURATELY aligned? If not aligned, what CC standards (both practice and content) align with each lesson within the given unit? What standards are missing?
To what extent does the text provide enough options to make it likely that all children will be successful? (How are students including special education, Gifted and Talented, English Language Learners, and students with special needs addressed?)
Are the suggested accommodations appropriate for all students?
What is done to help the teacher make sure every student contributes?

Revising a lesson
Based on the analysis, choose the lesson that is the least effective in meeting the standards in a problem-based manner. Revise and/or replace the lesson by utilizing what was discussed in class about high-quality mathematics instruction (addressing all learners; utilizing innovative techniques that encourage problem solving, communication, connections, multiple representations, and reasoning; integrating technology, literacy, and other content areas; etc.).
TCs are free to use resources discussed in class (NCTM journal articles, illuminations, the text, etc.) and/or seek help from expert teachers, making sure to cite accordingly.

Revising the unit (THIS PORTION WILL BE A SINGLE-PAGED HARD COPY GIVEN TO ENTIRE CLASS – can be front and back and two pages per sheet if necessary)
Explain how the unit was (based on the revised lesson) AND should be revised in order for it to address deficits related to standard alignment, nature of the classroom tasks and culture of classroom, and equity and accessibility. In order to prove that there were not deficits for certain standards, nature of classroom components, and/or equity/accessibility components, TCs must provide an example and location for each of the satisfactory/met criteria/standards. A table format can be used, or TCs may address each component/standard in its own brief paragraph. The below is an example using some of the old SC geometry standards.

<table>
<thead>
<tr>
<th><em>South Carolina Geometry Standard:</em></th>
<th>Example</th>
<th>Location in Revised or Original Unit Lessons</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.A.2.1 – Describe, model, and draw two-dimensional geometric shapes with up to eight sides</td>
<td>PROVIDE A BRIEF EXAMPLE OF HOW THIS STANDARD IS MET</td>
<td>Revised Lesson 1</td>
</tr>
<tr>
<td>I.A.2.1 – Identify, name, model, and draw two-dimensional geometric shapes with up to eight sides.</td>
<td></td>
<td>Original Lesson 2</td>
</tr>
</tbody>
</table>

Presentation
Part I Analysis: Specifically, report the results of the analysis by answering the guiding analysis questions above. Generally, answer what was good about the unit, what was not good, whether the text should be adopted based on the analysis, and why.
Part II Revising the unit: What should be done to improve the unit (how would you address the deficits indicated in the analysis including missing or weak standard alignment)? [A HANDOUT DESCRIBED ABOVE IS THE ONLY HARD COPY FOR THIS ASSIGNMENT.]
Part III Revised lesson demonstration: Demonstrate one of the revised lessons. First tell what, how, and why the lesson was changed. Then teach the content of the lesson based on the revision. Peers will assess if it meets the criteria for being an effective lesson based on what was learned this semester and if it aligns with the standards indicated.

Presentation: EXAM DAY
Participation and Attendance
There will be a number of warm ups, discussions, activities, and homeworks TCs will be expected to participate in and/or complete. For completed assignments indicated with an asterisk on the tentative daily schedule, a point will be earned.

Participation points will be deducted for cell phone use in class and disrespectful conduct. If an emergency, TAs may be excused to the hallway to talk or text. Otherwise, I should not see fingers typing on phones underneath tables.

TEDU Attendance Policy
Excessive absences (i.e., more than 15% - approximately 5 hours/2 classes) may result in receiving a “WA/F.” Students will be tardy if they arrive in class within the first 20 minutes after class has started. Three tardies result in one absence. Students will be absent if they arrive after 20 minutes or if they leave class early. Regarding being tardy or having to leave class early, exceptions will be made on an individual basis, but students must speak with me about extenuating circumstances for such exceptions. Regarding absences, if a student exceeds allowable absences due to extenuating circumstances beyond the student’s control, a panel of professors from that semester will review the circumstances and make a final decision.

If a student exceeds allowable absences due to extenuating circumstances beyond the student’s control, a panel of professors from that semester will review the circumstances and make a final decision. SNAP students, if they wish special accommodations, must see the professor within the first two weeks of the course or as soon as they find out about potential accommodations if determined mid semester. Athletes who will miss class due to athletic events must see the professor within the first two weeks of the course and submit athletic schedule for the semester, identifying classes that will be missed. No other absences will be allowed for athletes who miss the maximum allowable absences due to athletic events.

Written and Oral Communication
TCs are expected to use correct grammar at all times. Points will be deducted on written assignments for grammatical errors. All references must follow the American Psychological Association (APA) Guidelines for Term Papers. TCs are encouraged to take advantage of the Writing Lab in the Center for Student Learning (Addlestone Library, first floor). Trained writing consultants can help with writing for all courses; they offer one-to-one consultations that address everything from brainstorming and developing ideas to crafting strong sentences and documenting sources. For more information, please call 843.953.5635 or visit http://csl.cofc.edu/labs/writing-lab. Further, it is imperative that TCs use correct grammar in all oral communication, especially during field experiences. Classroom teachers, student peers, and I will collaborate to eliminate all oral grammatical errors, using an approach of constructive criticism.

Evaluation
It will be possible to earn 175 points during the semester. They will be distributed as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation (Completed CW &amp; HW)</td>
<td>14</td>
<td>8%</td>
</tr>
<tr>
<td>Mathematics is Everywhere</td>
<td>10</td>
<td>(~6%)</td>
</tr>
<tr>
<td>Clinical Interview</td>
<td>15</td>
<td>9% (+)</td>
</tr>
<tr>
<td>WWW Lesson Plan Project</td>
<td>25</td>
<td>14% (+)</td>
</tr>
<tr>
<td>Shared TCM/MTMS Lesson</td>
<td>25</td>
<td>14% (+)</td>
</tr>
<tr>
<td>Tests</td>
<td>40</td>
<td>(~23%)</td>
</tr>
<tr>
<td>Reading Reflections and Focus Questions (8)</td>
<td>2</td>
<td>8.5% (+)</td>
</tr>
<tr>
<td>Curriculum Analysis Final Project</td>
<td>30</td>
<td>17% (+)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage Range</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>91-92%</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>89-90%</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>86-88%</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>84-85%</td>
<td>2.7</td>
</tr>
<tr>
<td>C+</td>
<td>82-83%</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>79-81%</td>
<td>2.0</td>
</tr>
<tr>
<td>Grade</td>
<td>Percentage</td>
<td>GPA</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-----</td>
</tr>
<tr>
<td>C-</td>
<td>77-78%</td>
<td>1.7</td>
</tr>
<tr>
<td>D+</td>
<td>75-76%</td>
<td>1.3</td>
</tr>
<tr>
<td>D</td>
<td>72-74%</td>
<td>1.0</td>
</tr>
<tr>
<td>D-</td>
<td>70-71%</td>
<td>0.7</td>
</tr>
<tr>
<td>F</td>
<td>0-69%</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Respectful Conduct**
TCs are expected to be respectful and considerate of one another. Cell phones should be turned off while in class. Laptops should only be used in class if they are facilitating the development of mathematical thinking; if they appear to be a distraction, I will ask that they be put away. **Disrespectful conduct will result in a loss of participation points.**

**CofC Honor System**
Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved. Incidents where the instructor determines the student’s actions are related more to a misunderstanding will handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student’s file.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student’s transcript for two years after which the student may petition for the X to be expunged. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students should be aware that unauthorized collaboration—working together without permission— is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others’ exams, fabricating data, and giving unauthorized assistance. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor.

Students can find the complete Honor Code and all related processes in the *Student Handbook* at [http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php](http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php)

**ADA Accommodations**
In compliance with the Americans Disabilities Act (ADA), all qualified students are entitled to “reasonable accommodations.” Any students requiring accommodations should contact the Center for Disability Services (953-1431) and provide me with documentation of needed accommodations within the first two weeks of the course or as soon as they find out about potential accommodations if determined mid semester.

**Course Objectives and Standards**
All teacher preparation programs in the College of Charleston’s School of Education (SOE) are guided by a commitment to the conceptual framework of “Making the Teaching and Learning Connection.” Three elements of teacher competency (ETC) are fundamental to this framework; teachers must (1) understand and value the learner, (2) know what and how to teach and assess within a conducive learning environment, and (3) understand themselves as professionals. In addition, these competencies are foundational to the learning and assessments within this course, facilitating the development of knowledge, skills, and dispositions necessary for becoming an effective teacher.

Below are the specific end-of-course outcomes related to these teacher competencies. They are derived from the standards set forth by the National Council of Measurement in Education (NCME) and relate to those of the (1) School of Education (SOE), (2) National Council for Accreditation of Teacher Education (NCATE), (3) National Association for the Education of Young Children (NAEYC), and State Standards for Teacher Education (SC). They,
therefore, indicate the expectations for teacher candidates within the School of Education, early childhood teachers and elementary-grades teachers.

1. Teacher candidates (TCs) will develop the understanding of how students learn to construct mathematical ideas from the concrete early childhood experiences through the development of thinking abilities in early elementary grades. SOE I; NCATE 1; NAEYC 4b

2. TCs will articulate a vision of school mathematics that supports access of all students to a curriculum that emphasizes important mathematical concepts; effective and engaging research-based instructional practices; and high expectations with appropriate accompanying accommodations. SOE II, III; NCATE 2d, 3d; NAEYC 4b, 5

3. TCs will convey an appreciation for the discipline of mathematics including its history and the contributions of diverse cultures to the field. SOE II, VII; NCATE 2d; SC 4 (contextual teaching and diverse learning styles)

4. TCs will articulate the knowledge that mathematics curriculum must be coherent and focused on important useful concepts that are connected within the discipline and across disciplines. SOE II; NCATE 2d, 2i, 3a; NAEYC 5; NMSA 4.K2, SC 4 (contextual teaching)

5. TCs will recognize the importance of the role of student ideas, interests, and needs in the design, implementation, and evaluation of mathematically-based learning experiences. SOE I; NCATE 2d, 3a, 3d; NAEYC 1a, 5; NMSA 3.K5, 3.D4, 4.P3; SC 4 (diverse learning styles; cooperative teaching)

6. TCs will demonstrate an understanding of the need for a variety of instructional strategies to effectively address developmental, ability and learning style needs of PK-8 students exhibiting diversity in its many forms. SOE III; NCATE 4; NAEYC 1, 4b; NMSA 1.P5, 1.P10, 4.K3, 5.K2; SC 4 (diverse learning styles)

7. TCs will develop the knowledge of, and dispositions that value, ongoing, systematic, formal, and informal assessment as an integral part of instruction that guides and enhances learning. SOE VI; NCATE 4; NAEYC 3, 4b; NMSA 1.P6, 5.K8, 5.D5, 5.P4, 6(all)

8. TCs will communicate about and through mathematics verbally and in writing using both everyday language and mathematical representations. SOE II; NCATE 2d, 3e; NAEYC 4b; NMSA 4.K4, 4.D4, 4.P5

9. TCs will demonstrate knowledge of the organization of the content standard areas of number and operations, algebra, geometry, measurement, data analysis and probability within the PK-8 mathematics curriculum as prescribed by the NCTM and the SC Standards. SOE II; NCATE 2d; NAEYC 4b, 5; NMSA 4, 6.K5; SC 7

10. TCs will demonstrate the value and integrative nature of the process standards of problem solving, reasoning, communication, connections, and representations within the PK-8 mathematics curriculum as prescribed by the NCTM and the SC Standards. SOE II; NCATE 2d, 3c; NAEYC 4b, 5, 4c; NMSA 4, 5.K3, 5.P2, 6.K5; SC 4 (contextual teaching); SC 7

11. TCs will demonstrate competency in, and an understanding of the value of, a breadth and depth of mathematical knowledge and skills that extend beyond the level for which the TC is preparing. SOE II; NCATE 2d

12. TCs will state characteristics of a positive classroom environment conducive to the promotion of student confidence in their abilities to understand and use mathematics. SOE I & III; ETC 1; NAEYC 1c, 5; SC 6

13. TCs will formulate appropriate objectives and student participation activities for math lessons. SOE III; ETC 2, 3; NAEYC 5

14. TCs will demonstrate the ability to (1) relate mathematical concepts through the use of manipulatives and (2) incorporate appropriate technology into classroom instruction. SOE II & III; ETC 2; NAEYC 4b, 5; SC 16

15. TCs will develop awareness and be able to communicate how mathematics relates to various career options with
Course Alignment with Common Core Standards

College and Career Readiness Mathematics Practice Standards
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

College and Career Readiness ELA Standards

**Reading.**
- **Key ideas and details.**
  1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
  2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- **Craft and structure.**
  4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- **Integration of knowledge and ideas.**
  7. Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
  8. Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
- **Range of reading level and text complexity.**
  10. Read and comprehend complex literary and informational texts independently and proficiently.

**Writing.**
- **Text types and purposes.**
  1. Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- **Production and distribution of writing.**
  4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
  5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
  6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
- **Range of writing.**
  10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

**Speaking and Listening.**
- **Comprehension and collaboration.**
  1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.
  2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
  3. Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric.
- **Presentation of knowledge and ideas.**
4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

Language.

Conventions of Standard English.

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

**Teacher Education Programs: Final Draft of EEDA Performance Standards**

1. DEFINITION: Career Guidance is a process by which students become aware of the world of work, explore career options, and prepare for post-secondary opportunities. Performance Standard: Teacher candidates will explain the career guidance process.

2. DEFINITION: The curriculum framework for career clusters of study is an organizational model that integrates career preparation components with academic coursework, providing the foundation for the development of the Individual Graduation Plan (IGP). The IGP, organized around career clusters and majors, is an educational plan aligned with students’ interests, aspirations, and experiences. Performance Standard: Teacher candidates will explain the curriculum framework for the career clusters of study concept and its relevance to the Individual Graduation Plan (IGP).

3. DEFINITION: The elements of the Career Guidance Model are awareness, exploration, and preparation. Performance Standard: At the age-appropriate level of instruction, teacher candidates will explain the use of the career guidance standards and competencies as specified in the South Carolina Comprehensive Developmental Guidance and Counseling Program Model.

4. DEFINITION: Character education encompasses the identification, understanding, and performance of core values (listed in §59-17-135) that enhance citizenship, relationships, and quality of life. Performance Standard: Teacher candidates will identify instructional strategies that promote core values, as specified in §59-17-135, in the school community.

5. DEFINITION: Contextual teaching is a concept that refers to methodologies used by teachers that focus on concrete, hands-on instruction and content presentation with an emphasis on real-world application and problem solving. Performance Standard: Teacher candidates will use concrete, hands-on instruction and content presentation with an emphasis on real-world application and problem solving.

6. DEFINITION: Cooperative learning is an instructional technique where students interact collaboratively to complete a task. Performance Standard: Teacher candidates will implement learning strategies that promote cooperation.

7. DEFINITION: Learning styles is a concept that refers to methodologies intended to accommodate diversity in student learning. Performance Standard: Teacher candidates will implement strategies to accommodate the needs of diverse learners.
<table>
<thead>
<tr>
<th>WEEK</th>
<th>Topic</th>
<th>Readings &amp; Assignments to be completed for the given class</th>
</tr>
</thead>
</table>
| 1    | Introduction  
 Mathematical proficiency  
 Standards and standards-based teaching  
 Explanation of Mathematics is Everywhere  
 Explanation of Cultural Artifact HW  
 Course overview and goals | Skim VDW Chs. 1 & 2  
 Be prepared to discuss “Reflect and Focus” items |
| 2    | Warm up: Share cultural artifacts*  
 Snowman activity*  
 Problem solving and problem-based classroom (Ch. 3 & Ch. 4)  
 Choral counting -- SARAH  
 Lesson planning: Beginnings  
 Explanation of TCM & MTMS Shared Lesson | Read VDW Chs. 3 & 4 (RR/FQ 1)  
 Cultural Artifact HW  
 Suggestion: Review TCM & MTMS to find Shared LP Activity |
| 3    | Equity and accessibility: early finishers and gifted and talented, struggling, SPED, ELL, and culturally diverse  
 Cultural/historical integration*: Using history and culture to make learning relevant; relates to issues of equity and accessibility (CRP, Algebra Project, Pat Toliver’s Math Trails)  
 Technology: Explore Illuminations  
 Explanation of WWW Lesson Plan (15 min)  
 If time: Learning styles video (relates to individual differences) | Read VDW Chs. 6 & Skim 7; assigned articles posted to OAKS related to “addressing individual needs” (RR/FQ 2) |
| 4    | Warm up: Snowman assessment  
 Assessment (Ch. 5): Timed tests, rubrics, analyzing student errors*, Smarter Balanced Assessment Consortium  
 Explanation of Clinical Interview Assignment  
 Problem structures and basic facts (+ and -)* -- SARAH | Read VDW Chs. 5; VDW Ch. 9 (Stop at “Teaching Multiplication and Division”); SKIM VDW Ch. 10 (Stop at “Reasoning Strategies for Multiplication Facts”); and CGI Chs. 2 & 3 (RR/FQ 3)  
 WWW drafts due to discussion board by 5 PM |
| 5    | Problem structures and basic facts (x and /)* -- SARAH  
 Place value  
 Show students their content area for JIGSAW (5 min)  
 Number & Operations Lesson Rotation (15 min each) | Read CGI Ch. 4, remainder of VDW Ch. 9, SKIM remainder of VDW Ch. 10, SKIM VDW Ch 11, and “Place Value: Problem Solving and Written Assessment” (RR/FQ 4)  
 WWW peer feedback to 3 other plans due by 5 PM today to discussion board  
 Number & Operations Shared TCM & MTMS Lessons |
| 6    | Finish discussion of place value, if needed  
 Multi-digit number concepts  
 Computation and estimation for whole numbers  
 Jigsaw Activity Part I* (10 min)  
 Jigsaw Part II (80 min) | Read CGI Ch. 6  
 Read & take notes on readings for Jigsaw Part I from VDW Ch. 12; VDW Ch. 13; “Alternative Algorithms: Increasing Options, Reducing Errors”; and/or *Everyday mathematics* article |
<table>
<thead>
<tr>
<th>Date</th>
<th>Activities</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 2/19</td>
<td>Test 1 (1.5 hours) &lt;br&gt; WWW online sources displayed on IPADs – TCs rotate through the class and look at all of the different sites (30 min) &lt;br&gt; Sign up and explanation of Curriculum Analysis Final Project (30 min)</td>
<td>Study for test &lt;br&gt; Read CGI Chs. 7 &amp; 8 &lt;br&gt; Be prepared to share WWW projects on IPADs</td>
</tr>
<tr>
<td>8 2/26</td>
<td>Fraction Activity Centers* &lt;br&gt; Center debrief &lt;br&gt; Whole-class fractions &lt;br&gt; Explanation of literature connection HW &amp; Praxis HW</td>
<td>Read VDW Chs. 15 &amp; 16 (RR/FQ 5)</td>
</tr>
<tr>
<td>3/5</td>
<td>Spring Break</td>
<td>Be safe! Have fun!</td>
</tr>
<tr>
<td>9 3/12</td>
<td>Blurring the ELA-Mathematics Divide: Oral and Written Communication via Problem-Based Curricula M³: Treasures from the attic*</td>
<td>Clinical Interview Assignment Due &lt;br&gt; Read VDW Ch. 17 and article (Part of RR/FQ 6)</td>
</tr>
<tr>
<td>10 3/19</td>
<td>Problem-Based Teaching in Practice with M³: Treasures from the attic*</td>
<td>Praxis HW* &lt;br&gt; Read VDW Ch.18 (RR/FQ 6 – includes week 9)</td>
</tr>
<tr>
<td>11 3/26</td>
<td>Algebraic Thinking* (Ch. 14) &lt;br&gt; Algebra Lesson Rotation (15 min each)</td>
<td>Read VDW Ch. 14 (RR/FQ 7) &lt;br&gt; Algebra Shared TCM &amp; MTMS Lessons &lt;br&gt; Mathematics is Everywhere Assignment Due</td>
</tr>
<tr>
<td>12 4/2</td>
<td>Warm up: Share literature connection ideas* (30 min) &lt;br&gt; Geometry &amp; Measurement Centers (Chs. 19 &amp; 20) (75 min) &lt;br&gt; Geometry Lesson Rotation (15 min each)</td>
<td>Literature Connection HW &lt;br&gt; Read Ch. 20 and The van Hiele model of thinking in geometry among adolescents (Chapter 3) – (Part of RR/FQ 8) &lt;br&gt; Geometry Shared TCM &amp; MTMS Lessons</td>
</tr>
<tr>
<td>13 4/9</td>
<td>Warm Up: What is a trianquad? (15 min) &lt;br&gt; Finish Geo &amp; Measurement Centers* and debrief (45 min) &lt;br&gt; Measurement Lesson Rotation (15 min each) &lt;br&gt; Conclude geometry &amp; measurement: Trapezoid activity and more, if time</td>
<td>Read Ch. 19 (RR/FQ 8 – includes week 12) &lt;br&gt; Measurement Shared TCM &amp; MTMS Lessons</td>
</tr>
<tr>
<td>14 4/16</td>
<td>Test 2 (1 hour) &lt;br&gt; DA &amp; Prob Lesson Rotation (15 min each) &lt;br&gt; Data Analysis &amp; Probability notes and activities* (Ch. 21) (45 min)</td>
<td>Study for Test 2 &lt;br&gt; Skim VDW Chs. 21 &amp; 22 &lt;br&gt; Data analysis Shared TCM &amp; MTMS Lessons</td>
</tr>
<tr>
<td>EXAM DAY 4/28 12-3</td>
<td>Curriculum Analysis Presentation &amp; Lesson Demonstration (whole class)</td>
<td>Presentation/Demos: 25-30 min each group</td>
</tr>
</tbody>
</table>
Name: _________________________________
LLOYD_EDEE 366_SPRING 2014

Please retain until end of the semester. 14 points of your participation grade rely on this document.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>Participation Point CW &amp; HW Assignments</th>
<th>Initialed for Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 1/15</td>
<td>Cultural Artifact HW</td>
<td>✖</td>
</tr>
<tr>
<td>2. 1/15</td>
<td>Snowman</td>
<td>✖</td>
</tr>
<tr>
<td>3. 1/22</td>
<td>Cultural Integration Problem</td>
<td>✖</td>
</tr>
<tr>
<td>4. 1/29</td>
<td>Analyzing Student Errors</td>
<td>✖</td>
</tr>
<tr>
<td>5. 1/29</td>
<td>+/- Problem Structures &amp; Basic Facts Activity</td>
<td>✖</td>
</tr>
<tr>
<td>6. 2/5</td>
<td>x and / Problem Structures &amp; Basic Facts Activity</td>
<td>✖</td>
</tr>
<tr>
<td>7. 2/12</td>
<td>Strategies for Whole Number Operations &amp; Computational Estimation Jigsaw Activity</td>
<td>✖</td>
</tr>
<tr>
<td>8. 2/26</td>
<td>Fraction Centers Assessment Packet</td>
<td>✖</td>
</tr>
<tr>
<td>9. 3/12-3/19</td>
<td>Treasures from the Attic Packet</td>
<td>✖</td>
</tr>
<tr>
<td>10. 3/19</td>
<td>Praxis Example HW</td>
<td>✖</td>
</tr>
<tr>
<td>11. 3/26</td>
<td>Algebraic Thinking Activity</td>
<td>✖</td>
</tr>
<tr>
<td>12. 4/2</td>
<td>Literature Connection HW</td>
<td>✖</td>
</tr>
<tr>
<td>13. 4/9</td>
<td>Geo &amp; Measurement Centers Assessment Packet</td>
<td>✖</td>
</tr>
<tr>
<td>14. 4/16</td>
<td>DA and Probability Notes and Activities</td>
<td>✖</td>
</tr>
</tbody>
</table>

TOTAL POINTS from CW & HW /14

GENERAL PARTICIPATION in class is expected;
NOTE: ½ pt deduction from earned participation pts for every cell phone/non-class-related internet use