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| **AUBURN UNIVERSITY** |
| **CTEE 4000 Formative Assessment in Elementary Mathematics** |
| **Term:** Fall 2023 | **Credit Hours:** 3 semester hours  |
| **Pre/ Co-requisites:**  Admission into Elementary Education program |
| **Days:** Mondays and Wednesdays  | **Times:** Cohort C: 8:00-9:30 a.m.  |
| **Room:** Haley 2414 |  Cohort A: 10:00-11:30 a.m. |
| **Instructor:** Brandi Dailey | bad0032@auburn.edu  |
| *outside of office hours, allow up to 48 hours for email responses (longer if on weekends, between semesters or breaks/holidays)* |
| **Cell**: 334-759-9291 (personal) | **Office**: HC5009 | **Hours:** MW 12:00-1:30 p.m. |

![The Five Practices in Practice [Elementary]: Successfully Orchestrating  Mathematics Discussions in Your Elementary Classroom (Corwin Mathematics  Series): Smith, Margaret (Peg) S., Bill, Victoria L., Sherin, Miriam  Gamoran: 9781544321134: Amazon.com: Books]()

**Required Texts and Materials:** Smith, M.S., Bill, V., & Sherin, M.G. (2019). *The 5 Practices in Practice.* Corwin. ISBN# 9781544321134

* composition notebook/spiral-bound notebook, basic school supplies (pencils, pens, markers, sticky notes)

**Alabama Course of Study: Mathematics**<http://alex.state.al.us/ccrs/node/74>

**Course Description:** Examination into mathematics learning trajectories content and ways to assess student thinking in the area of mathematics**.** This course includes examining student mathematical thinking, learning trajectories, questioning and assessment principles. The goal of the course is for students to be able to critically assess student thinking and learning mathematics in the elementary grades, utilizing knowledge of learning trajectories and assessment strategies. It also includes the relationship between pedagogy and mathematics understanding appropriate for the instruction of children in kindergarten through sixth grade. Through this course, students understand and use major concepts and procedures related to assessing individual learners’ elementary mathematics content of numbers and operations through problem solving, reasoning and proof, communications, connections and representations. This includes utilizing research-based teaching practices, the process standards, learning trajectories, representations, formal and informal assessment strategies, technology, and discourse. Teacher candidates develop and evaluate formal and informal assessment strategies for individual learners based on the state standards and standards produced by the National Council of Teachers of Mathematics. They plan and analyze appropriate assessment data to communicate about the current K-6 student mathematical thinking and plan for future intellectual, social, and emotional growth. They will analyze existing student data and interviews of elementary learners.

**Student Learning Outcomes:**

**Goal:** To critically assess student thinking and learning mathematics in the elementary grades, utilizing knowledge of learning trajectories and assessment strategies.

 **Objectives:** After the completion of the course, the pre-service teacher should:

1. Design multiple entry point learning experiences based on the Alabama Course of Study for Mathematics and the National Council of Teachers of Mathematics standards in which K - 6 students are challenged to problem solve, analyze, and evaluate real-world situations and can demonstrate their competence and build on prior knowledge.

2. Identify student assumptions and preconceptions about mathematical content and adjust instruction according to prior understandings

3. Identify and utilize mathematical learning trajectories for geometry, number sense, and measurement

4. Analyze individual and classroom assessment data to interpret instructional steps.

5. Identify ways community and cultural resources can be utilized in the teaching and learning of mathematics

**Assessments of Learning** *The table below shows the alignment between course assignments and the Alabama CIEP Accreditation Standards. Detailed directions and rubrics will be provided for each assignment.*

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| **CIEP Standard** | **Assignment** |
| *Standard 2.3.1, 2.3.2, 2.3.3, 4* | Learning Assessment Test |
| *Standard 2.3.1, 2.3.2, 2.3.3, 4* | Student Thinking Portfolio |
| *Standard 2.3.3, 5.2* | Community Task Project |
| *Standard 4* | Analyzing Classroom Data |
| *Standard 5.1, Standard 5.2* | Reading and Practice Reflections |

**Course Assignments/Projects:**

* Community Task (65 points): Create a problem-solving task with multiple entry points into the inquiry. The task should use meaningful information about the community and provide an authentic learning opportunity for learners. In addition, you will list the standard(s) the task addresses, the context, and possible responses.
* Analyzing Classroom Data (80 points): Using a set of data, you will create a method of evaluation to assess student performance from student work samples. You will demonstrate your ability to analyze the results capturing patterns of student strengths, misunderstandings, and areas for improvement. You will provide effective feedback for students to use for future instructional planning.
* Student Thinking Portfolio (110 points): Through various experiences (videos, student work samples, observations, and questioning), you will compose a reflection about student thinking to demonstrate your understanding of assessment and learning trajectories. You will complete student observation protocols where the observations focus should be on students’ thinking, understanding, misconceptions, and the identified prerequisite skills. You will also create interview questions for a student following a problem-solving task. Make notations of the ways the students think about the math and different problems, reactions to the activities, ways they communicate about math, and how they use strategies, manipulatives, and/or tools.

You will also type a reflective paper on the mathematical thinking and problem solving observed, provide suggestions to support learning, and reflect on what you’ve learned about teaching and student learning. You will apply your pedagogical content knowledge and connect math problems and strategies of the students to specific content from the text (citations are needed) in your discussion.

* Learning Assessment Test (110 points): By the end of the course, you should have a firm grasp of learning trajectories in number sense and computation. In addition, you should have experience analyzing student work and assessing student thinking. You will complete a final assessment in which you apply these skills.
* Reading and Practice Reflections Journal (60 points): During the semester, you will complete entries in your math journal, which are reflections of readings and activities completed in class to document your learning. Journals are assessed periodically throughout the semester to monitor student progress and growth in mastery of the material.

Examples of class activities that may be listed in your journal are math morning problem starters, notes from observations of videos viewed in class, an examination of student work passed out in class, or practice activities that are important in your professional growth.

Answers to question prompts and reflections from your readings will be approximately ½-1 page long and will be used as discussion starters in class as we will have small group discussions on reflections. Reflection writing could include things you didn’t understand, things that surprised you, things you want to remember, or things that relate to your experiences.

* In-Class Participation and Activities (5 points each, 75 points total): During class meetings, you will complete activities both independently and participate with your classmates in whole and small groups. Growth and learning depend on being present and actively engaged; thus, you are expected to participate fully. Participation can include but is not limited to contributions to discussions, reflections, exit slips, math puzzles, games, or activities, as well as working with group members in learning activities.

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| **Grading:**  | A: 90-100% of total points | B: 80-89% of total points | C: 70-79% of total points |
| D: 60-69% of total points | F: 0-59% of total points |  |

*A note about rounding: For final grade averages with the decimal grade point less than 0.5, the grade is rounded down to the nearest whole number, and when the decimal grade point is greater than or equal to 0.5, the grade is rounded up to the nearest whole number.*

* Assignments should be submitted on time and completed in a thorough manner. Submitted assignments that are incomplete or not submitted by the due date lose points equal to one letter grade each day up to the third day past the deadline, excluding the final which cannot be completed past the due date.
* If extenuating circumstances arise where you are concerned about completing an assignment by the due date, contact me in advance of the due date to discuss the possibility of an extension.
* If students have a concern with a specific grade received, please know I am willing to meet with them in order to discuss their learning, understanding, and effort.

**Class Policy Statements:**

**Classroom Behavior:** In this course, the Auburn University [policy on classroom behavior](https://www.auburn.edu/student_info/student_policies/#vii) will be followed.

* Auburn University aims to create an atmosphere for higher learning that develops critical thinking skills, effective communication, and knowledge pursuit. To ensure an optimal learning environment, any behaviors that hinder teaching or disrupt others from learning will not be tolerated and will be met with appropriate consequences. This is necessary to uphold and safeguard the integrity of the learning experience for all. Improper classroom actions and behaviors are listed within the university policy and include but are not limited to monopolizing discussions, persistent speaking out of turn, distractive, audio or video recording of classroom activities or the use of electronic devices without the instructor’s permission, employing insulting language or gestures, and verbal, psychological or physical threats, harassment, and physical violence.

**Technology:** Students are responsible for checking their Auburn University email and Canvas accounts daily for announcements.

* Notifications: Students have the ability to control and setup the notification settings in their Canvas accounts. It is highly encouraged and recommended you set up the notifications for this course to alert you when an Announcement is posted, an Assignment is due, a grade is released, etc. If you are new to Canvas and need help setting up the notifications, this link, [“Getting Started with Canvas” video (and transcript)](https://vimeo.com/74677642) , is a helpful, quick video created by Canvas LMS.
* In class: As research on learning shows, unexpected noises and movements automatically divert and capture people's attention, which means you are affecting everyone’s learning experience if your cell phone, watch, laptop/tablet, etc. makes noise or is visually distracting during class. For this reason, I ask you to silence and/or turn off your phones, close your laptops, and put away your personal devices unless instructed to use them as part of the lesson/activity in class. *\*If you have an emergency, children, someone in your care, or similar circumstances, please communicate with me privately about keeping your device on silent prior to class.*
* When students are asked to use personal devices (e.g., laptop or tablet) for learning activities during class, they should not use the devices for completing another course’s assignments, for social media purposes, Internet surfing, texting/messaging, or other non-class related activities during class. If this becomes an issue or distraction, a student may be asked to leave the class session.
* Internet Access: This course utilizes Canvas as an online component; thus, students must have access to a working computer and reliable access to the Internet. Students can also use on-campus computer labs, public library, etc. if needed to ensure access. Make sure to plan ahead with a backup plan in case of technical problems. For Canvas issues, please reference
* Tech issues: Much of this course is hosted in Canvas (assignment dropboxes, resources, etc.) and may require students to troubleshoot their own technology problems. Troubleshooting may involve working with the campus help desk, LRC, or peers, or I am available to try and help during my office hours. Technical issues cannot be used as valid excuses for missing assignments. Make sure to save and back up your work. After submitting work in Canvas, immediately check to see if it is captured as submitted in the Canvas assignment dropbox or under grade listings.

**Attendance:** Attendance is required and taken at each class meeting.

* Class Format: The delivery modality for this course instruction is face-to-face with synchronous meetings on campus. There is no remote attendance option via Zoom for a class meeting on campus.
* Excused absences are granted to students as defined in the Auburn University [*Student Policy eHandbook*](http://www.auburn.edu/student_info/student_policies/), and include the following: death of an immediate family member, trips for an Auburn university-sponsored organization, intercollegiate athletic events, subpoena for court, or religious holiday. When feasible, the student must notify the instructor prior to the occurrence of any excused absence(s), but the student must provide appropriate documentation to the instructor the day the student returns to class and no later than one calendar week from the absence. Appropriate documentation for all excused absences is required.
* After two unexcused absences, the final grade will be lowered one letter grade. At the third unexcused absence, the student will have a conference with the elementary education faculty.
* Additionally, a budding professional demonstrates consistent attendance and punctuality. You are expected to arrive to class by the start time and stay through the class time. Any combination of tardies or leaving class early that sums to three will be counted as one unexcused absence.

**Make-Up Policy:**

* In-class participation and activities require the student to be present in class meetings; therefore, participation and work completed in class cannot be made up. Students not present cannot earn points for activities completed in class.
* Students with an excused absence are excused (marked in Canvas) from the class participation/in-class assignment and are not penalized. Excused assignments/grades neither hurt nor help the student’s overall course grade.
* Unexcused absences will receive no points, a zero, for the missed in-class assignment/class participation.
* Arrangements to make up missed major examinations 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 specified by the instructor.

**Accommodations:** Students who need accommodations should submit their approved accommodations through the AIM Student Portal on AU Access and follow-up with the instructor to arrange a meeting during office hours the first week of classes or as soon as possible if accommodations are needed immediately. It is important for the student to complete these steps as soon as possible. Accommodations are not retroactive. Students who have not established accommodations through the [Auburn Office of Accessibility](https://accessibility.auburn.edu/steps-to-receive-accommodations.php), but need accommodations, should contact the Office of Accessibility at: ACCESSIBILITY@auburn.edu call (334) 844-2096, or visit their office at 1228 Haley Center.

Once a student has established accommodations with the Office of Accessibility and submitted them through AU Access, the student is responsible for arranging a meeting with the professor to discuss their applied accommodations for the course. The meeting can be in person (face-to-face), over the phone, or through e-mail. Discussions regarding accommodations are confidential and private. Students do not need to disclose the nature or basis for their accommodations; it is the student's decision whether to share details or not.

**Academic Honesty:** Some assignments will involve integrating readings and websites into your reflections and assignments. Plagiarism is the act of representing words, data, works, ideas, computer programs or output, or anything not generated by the student as their own.  Plagiarism may be inadvertent or purposeful; however, plagiarism is not a question of intent.  Please be sure to cite any outside sources used in the work. All work is to be done individually, unless otherwise specified. All submitted assignments are subject to a plagiarism check.

* **AI Policy:** In this course, it is expected that all submitted work is produced by the students themselves, whether individually or collaboratively, as assigned. Students must not seek the assistance of Generative AI Tools like ChatGPT. Use of a Generative AI Tool to complete an assignment is not permitted in this course and constitutes academic dishonesty.
* Cheating, plagiarism, or any other form of academic dishonesty will not be tolerated and will be handled accordingly. Any student who is found committing academic dishonesty on any assignment will receive a grade of zero on that assignment. In addition, the student's final grade in the course will be dropped by one letter grade. Neither of these penalties is negotiable. It will be up to the instructor's discretion to take further action based on the perceived severity of the offense.
* 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/)](http://www.auburn.edu/student_info/student_policies/)will apply.  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.

**Title IX Statement:**Auburn University is committed to providing an environment free of discrimination and harassment and is equally committed to the principle of equal opportunity in education and employment. The University does not discriminate or tolerate Discrimination or Harassment against individuals based on sex (sexual orientation, gender identity, and gender expression), race, color, religion, national origin, age, disability, genetic information, or protected veteran status (collectively, “Protected Status”). If you believe you have been the victim of harassment or discrimination based on race, color, religion, national origin, disability, age, or sex (including sexual orientation, gender identity, and gender expression), we encourage you to report it.  If you report sexual assault or sexual misconduct to a faculty member, the faculty member is obligated to notify the University’s Title IX Coordinator about the basic facts of the incident. For more information about Title IX policy against discrimination and harassment, reporting, and resource options at Auburn University, please visit: [Title IX](http://www.auburn.edu/titleix)

**Professionalism** 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. Attend class presentations carefully and take part in discussions. Professionalism is more than simply being physically present in the classroom. In this course, you will be expected to treat group members respectfully and support their successes. Respect does not mean always agreeing with others. 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 teachers.

* 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
	+ Diversity of learners
	+ Budding professionals use appropriate means for discussions: Please respect our class time together and my own time as a teacher and researcher by planning to discuss grades or other points of discussion/contention during my office hours or by an appointment.
	+ Budding professionals take responsibility for their learning: My overarching goal is to support class members in becoming the best they can be at this point in their professional development. Please allow me to assist in the possible ways, including listening, providing feedback, answering questions, addressing concerns, brainstorming, clarifying course content or expectations, and facilitating work with collaborating peers. Email is the surest way to contact me outside of class, and while I do check my email regularly, during my office hours, I will respond immediately to emails, provided I am not meeting with a student at that moment. Outside of office hours, I do not check email after 9 pm on weekdays. Please allow me up to 48 hours to respond to an email (time will be lengthier if on weekends, between terms, and/or breaks or holidays). If you have an emergency, please call my cell phone (personal number) on the syllabus.

**Course Contingency:** If class meetings are disrupted due to faculty 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, an addendum to this syllabus and/or course assignments will replace the original materials.

**Possibility of Transitioning to Remote Instruction:** If the University moves to fully online instruction, please be assured that the learning goals and outcomes of the course will not change; however, some aspects of the course will change in terms of the mode of delivery, participation, and assessment methods. If an announcement is made for remote instruction, I will communicate with the class about course changes and will work with students to revise a course calendar. Please be prepared for this contingency by ensuring that you have access to a computer and high-speed Internet.

**Health and Well-Being Resources:** Personal and academic stress can take a toll on an individual and increase affects to one’s physical and/or emotional health and well-being. If you find yourself in need of any additional support, the following are resources on campus to assist:

* [AU Medical Clinic](https://cws.auburn.edu/aumc/)
* If you or someone you know is experiencing food, housing or financial insecurity, visit the [Auburn Cares Office](http://aucares.auburn.edu/)

**Mental Health:**

* If you are experiencing stress that feels unmanageable (personal or academic) during the semester, Auburn University’s [Student Counseling and Psychological Services](http://wp.auburn.edu/scs/) (SCPS) offers a variety of services to support you. The mission of SCPS is to provide comprehensive preventative and clinical mental health services to enhance the psychological well-being of individual students, as well as the broader campus culture. As an instructor, I am available to speak with you regarding stresses related to your work in this course, and I can assist in connecting you with the SCPS network of care. You can schedule an appointment yourself with the SCPS by calling (334)844-5123 or by stopping by their offices on the bottom floor of Haley Center or the second floor of the [Auburn University Medical Clinic.](http://auburn.edu/map/?id=150)
* If you or someone you know needs to speak with a professional counselor immediately, the SCPS offers counseling during both summer term as well as the traditional academic year. Students may come directly to the SCPS and be seen by the counselor on call, or you may call (334)844-5123 to speak with someone. Additional information can be found at [http://wp.auburn.edu/scs](http://wp.auburn.edu/scs%20%C2%A0)

**Basic Needs**

* Any student who faces challenges securing their food or housing and believes this may affect their performance in the course or others is urged to contact Auburn’s Basic Needs Center for support at <https://aub.ie/basicneeds>. Furthermore, please notify the professor if you are comfortable in doing so as this will allow the faculty member to connect you with any other known resources.

**Tentative Course Content and Topics Outline:** *Detailed directions, requirements, rubrics, and listed due dates will be provided for each assignment in Canvas.*

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| Week | Topic(s) |
| 1 | Introductions: What is Mathematics? Examining our own experiences as learners of math |
| 2 | Mathematics Teaching Practices and Standards of Mathematical Practice (SMP); Alabama State Content Standards |
| 3 | Setting Goals; Selecting Worthwhile Mathematical Tasks; Numeracy, Early Number Sense and Learning Trajectories |
| 4 | Homework practices; Connecting with the community and communicating with students’ families |
| 5 | Computation: addition and subtraction-problem types and strategies Anticipating Student Responses  |
| 6 | Assessment tools, Analyzing Student Data |
| 7 | Monitoring student work, Analyzing Whole Class Data  |
| 8 | Discourse-math talk moves and questioning; Conceptual and procedural understanding |
| 9 | Observation as an assessment tool; Observing students work  |
| 10 | Interviewing as an assessment tool; Interview protocols |
| 11 | Computation: multiplication and division-problem types and strategies |
| 12 | Rubrics as an assessment tool |
| 13 | Student grouping; Selecting and Sequencing Student Solutions |
| 14 | Planning-routines, hooks, intros/conclusions/wrap-ups, lessonsDiverse learners; equity in mathematics |
| 15 | Wrapping up and moving forward; Learning Assessment Final Test |

*The Right to Change: The instructor reserves the right to modify the course syllabus, class schedule, alter classroom policies and has freedom to cover course topics at their discretion in order to meet learning objectives, compensate for missed class, or for similar reasons. Students will be notified of any change that affects course structure or has the possibility of altering student outcomes.*