AUBURN UNIVERSITY

**CTEC 3020 Primary Mathematics: Integrated STEM**

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| **Term: Fall 2025** | **Credit Hours: 3** |
| **Pre/ Co-requisites: This section is restricted to education majors who have been****accepted into the early childhood education program. The required co-requisite course is CTEC 4912, the Primary Practicum in an upper-level early childhood classroom.** |
| **Class Day/Time: M 10:00-12:50** | **Room: EDUC 1109** |
| **Instructor: Mrs. Lindsay Griffies** | **Email: griffli@auburn.edu** |
| **Office: 334-321-8182** | **Office: EDUC 2307** |

**Required Texts and Materials:** Van de Walle, John A. (2023). *Elementary and middle school mathematics: teaching developmentally (11th Edition).* Boston: Pearson*,* ISBN 9780136818243

National Council of Teachers of Mathematics (2014). *Developing essential understanding of geometry and measurement: Pre-K – Grade 2.* Reston, VA: NCTM-DEU.

Novakowski, J. (2015). *Reggio-inspired mathematics.* Richmond, BC, Canada: Richmond School District.

**Other texts (Recommended):** National Council of Teachers of Mathematics (2011). *Developing essential understanding of mathematical reasoning: Pre-K – Grade 8.* Reston, VA: NCTM.

Technology (access to a computer/tablet and Internet connection), a composition notebook, school pouch with supplies (tape, markers, pencil, black ink pen, colored pencils, markers, white out, index cards), materials needed to construct instructional tools and resources.

* **Alabama Course of Study: Mathematics** [**https://alabamastandards.org/0c01a9eb-4d20-4578-89fb-3876b435c3d4/0c01a9eb-4d20-4578-89fb-3876b435c3d4**](https://alabamastandards.org/0c01a9eb-4d20-4578-89fb-3876b435c3d4/0c01a9eb-4d20-4578-89fb-3876b435c3d4)
* Resources on Canvas and Teaching Channel

**Course Description:** This course examines the principles, current research, and approaches to the teaching and learning of elementary school mathematics with specific focus on geometry, measurement and data analysis. It also investigates the relationship between pedagogy and mathematical understanding appropriate for the instruction of children in kindergarten through third grade. Through this course, teacher candidates explore and use major concepts and procedures in relation to geometry, measurement, probability, and data analysis. Candidates plan, implement, and reflect upon appropriate mathematics learning experiences and curricular materials that involve rigorous tasks with various entry levels based on the state standards and standards produced by the National Council of Teachers of Mathematics (both in this class and corresponding practicum). Lessons build conceptual and procedural understanding while promoting inquiry, problem solving, reasoning, mathematical thinking, discourse, making connections, differentiation, and engage students in real-life problematic situations. Candidates have professional conversations with others about their teaching, and revise professional practices based on these experiences.

This course is taught in conjunction with a lab/ practicum field experience for early childhood majors with students in intermediate grades where teacher candidates will have opportunities to observe, plan and implement both small group and whole class teaching according to the theory and methods presented in their university courses, along with the guidance and modeling their clinical educator provides, which meet state and national standards. We expect teacher candidates to be working with children and co-teaching as much as possible during this field placement.

# Student Learning Outcomes:

**Goal:** To critically analyze curriculum and the process of teaching and learning mathematics in kindergarten through third grades. Curriculum through fourth grade will also be introduced.

**Objectives:** After the completion of the course teacher candidates should:

1. Understand, explain, and model how to plan sequences of instruction that includes goals, appropriate materials, activities and assessments, and supports engagement in learning through evidence-based practices, including the Mathematics Teaching Practices.
	* Develop an understanding that early childhood curriculum is an integrated curriculum, and that children’s learning in mathematics and science takes place in integrated learning experiences with concrete materials in a variety of contexts. (NAEYC 4c)
2. Understand, explain, and model how to differentiate instructional plans to meet the needs of diverse students in the classroom and provide opportunities for them to utilize the Standards of Mathematical Practices.
3. Model how to administer formative and summative assessments to determine student competencies and learning needs, and use this assessment data to provide feedback, improve instruction and monitor learning. This includes being able to explain and identify the appropriateness of screeners, diagnostic, and progress monitoring assessments).
	* Understand how to record, report, and evaluate the development level of young children through naturalistic/performance-based assessment and utilize developmentally appropriate assessment and reporting techniques. (NAEYC 3a, 3b, & 3c)
4. Understand, explain, and model how to develop accommodations for neurodiverse students, such as dyscalculia, and provide specific strategies to assist them such as:
	* Early warning signs, screening, and recommendations for intervention,
	* Use of visual representations,
	* Use of instructional examples and concrete objects,
	* Student verbalization,
	* Use of heuristic/multiple strategies,
	* Provide ongoing feedback, and
	* Review strategies and connect to previous learning.
5. Exhibit professional dispositions including preparedness for each class, active participation in all class activities, collaboration with peers, respect for diverse perspectives, proactive communication with instructors, reflection of personal cultural frames of reference, and responsibility in the field.
6. Reflect on their own teaching practices and consult with other professionals to grow professionally.
7. Understand, explain, and model appropriate graphs and numerical summaries to describe the distribution of categorical and numerical data.
8. Understand, explain, and model what area and volume are and give rationales for area and volume formulas that can be obtained by finitely many compositions and decompositions of unit squares or unit cubes, including formulas for the areas of rectangles, triangles, and parallelograms, and volumes of rectangular prisms.
9. Understand, explain, and model the general principles of measurement, the process of iterations, and the central role of units: that measurement requires a choice of measurable attribute, that measurement is comparison with a unit and how the size of a unit affects measurements, and the iteration, additivity, and invariance used in determining measurements.
10. Understand, explain, and model how the number line connects measurement with number through length.
11. Understand, explain, and model unit rates to solve problems and to formulate equations for proportional relationships.
12. Understand, explain, and model that responses to statistical questions should consider variability.
13. Understand, explain, and model distributions for quantitative data are compared with respect to similarities and differences in center, variability (spread), and shape.
14. Understand, explain, and model theoretical and experimental probabilities of simple and compound events, and why their values may differ for a given event in a particular experimental situation.
15. Understand, explain, and model how the scope of inference to a population is based on the method used to select the sample.
16. Understand, explain, and model geometric concepts of angle, parallel, and perpendicular, and use them in describing and defining shapes, describing and reasoning about spatial locations (including the coordinate plane).
17. Understand, explain, and model how shapes are classified into categories, and reasoning to explain the relationships among the categories.
18. Understand, explain, and model proportional relationships in scaling shapes.
19. Plan for NCTM’s eight mathematics teaching practices (NCTM, 2024, 2020), especially:

(a) selection/modification/creation and implementation of cognitively demanding relevant instructional tasks.

(b) promotion of problem solving and reasoning, connections and applications, and explanation and justification within a discourse-rich environment (c.f., Smith et al., 2020; Smith & Stein, 2018).

(c) use of children’s thinking and understanding to guide instruction.

* + Identify important mathematics/science content, process skills, and attitudes appropriate to young children. (NAEYC Standard 1b, 4a, 4b, 4c, & 4d)
	+ Become acquainted with the principles and elements of curriculum development (e.g., goal setting, planning, implementing, and assessing curriculum) in mathematics and science. (NAEYC Standard 1a, 1b, 1c, 4b, 4c & 4d)

(d) use of multiple representations and tools, including technology.

1. Identify ways technology such as artificial intelligence/virtual manipulatives, digital curriculum, and other technologies can enhance planning and instruction in K-3 mathematics classrooms as well as challenges they also present.

**Co-Requisite Field Experience (3 credit hr. practicum)**

During your practicum you will have to following responsibilities and professional duties:

1. Collaborate and co-teach with your mentor teacher.
2. Fulfill the mathematical teaching components and the integrated project according to this syllabus.
3. Work with your practicum supervisor to receive feedback and improve your planning, teaching, learning, and assessing for student engagement and learning according to the Alabama Course of Study learning outcomes.
4. Participate in the 28 hrs. of AMSTI training for math and science.

**Online Resources and Learning Opportunities:**

**Use these websites as resources for assignments & teaching, both in-class and for practicum.**

**NAEYC Code of Ethics**

[**https://www.naeyc.org/about-us/people/naeyc-gb/apply-for-board-service/code-of-ethics**](https://www.naeyc.org/about-us/people/naeyc-gb/apply-for-board-service/code-of-ethics)

**Claire Warden Mind-stretchers Academy: Bringing Learning Alive**

[**https://mindstretchers.academy/**](https://mindstretchers.academy/)

**NCTM, (also has videos of excellent teaching)**

National Council of Teachers of Mathematics (NCTM):  [http://www.nctm.org](http://www.nctm.org/)

National Council of Teachers of Mathematics (NCTM). (2020). *Catalyzing change in early childhood and elementary education: Initiating critical conversations.* Reston, VA: NCTM.

**Webinar and Supportive Documents Available ONLINE at**

https://www.nctm.org/Standards-and-Positions/Catalyzing-Change/Catalyzing-Change-in-Early-Childhood-and-Elementary-Mathematics/

National Council of Teachers of Mathematics. (2024). *Principles to action: Ensuring mathematics success for all.* Reston, VA: NCTM.

**Executive Summary Available ONLINE at** http://www.nctm.org/uploadedFiles/Standards\_and\_Positions/PtAExecutiveSummary.pdf

*Alabama Course of Study: Mathematics* by the Alabama Department of Education.

**Available ONLINE at**

https://www.alabamaachieves.org/wp-content/uploads/2022/09/AS\_2022923\_2019-Alabama-Mathematics-COS\_V1.0.pdf

**Investigations in Number, Data, & Space**

- online games/activities. K-1**:**<http://investigations.terc.edu/library/Games_K1.cfm>

- online games/activities, 2-3**:**<http://investigations.terc.edu/library/Games_23.cfm>

- Illuminations:<http://illuminations.nctm.org>

**Professional Development - inside mathematics (problem of the month by grade level, video:**<http://insidemathematics.org>

**Assignments**

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| --- | --- |
| Whole Group Lesson Plan and Reflection | 20% |
| Small group data-informed lesson | 20% |
| Integrated Mathematics and Investigative Topic (Science, Social Studies, etc.) | 25% |
| Reading and Practice Reflections Journal (including leading activities from text) | 15% |
|  Content and Pedagogical Content Knowledge Test | 20% |

**Grading:**

A: 90-100%

B: 80-89%

C: 70-79%

D: 60-69%

F: 0-59%

* *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 will lose points equal to one letter grade for each day up to the third day past the due date, excluding the course final which cannot be submitted or completed past the due date. If you have a situation that you believe merits an extension on the timeline, please reach out to the instructor. These are addressed on a case-by-case basis.
* If candidates have a concern with a specific grade received, the instructor is willing to meet with them to discuss their learning, understanding, and effort.

# Course Assignments/Projects

Whole Group Lesson Plan and Reflection (20%): You will write and teach a whole-group math lesson plan that aligns with the Alabama Course of Study mathematics standards for the appropriate grade level, the Math Teaching Practices (MTPs), and encourages students to use the Standards of Mathematical Practices (SMPs). While you are responsible for planning and leading the whole class, you may create an environment that works in small groups, involves stations, etc. Your lesson plan will explain the mathematical content in the lesson, prior content knowledge you will build upon, vocabulary related to the topic, and key elements of the content.

You will then teach and record the written lesson plan, provide feedback to students, self- assess, and write a reflection on the experiences. Using *GoReact* you will give time stamped reactions, and the instructor will also comment with time stamps on the video to give “in the moment” feedback in addition to comments on the rubrics, planning, and reflection. Your time stamp will note examples of conceptual understanding, procedural understanding, SMPs and MTPs, assessing questions and advancing questions.

Small group data-informed lesson (20%): Using data from your class, you will create a table of class data, select students to pull for a small group data-informed lesson. You will plan, teach, and assess this small group lesson. Then you will reflect on the data and next steps.

Integrated Mathematics and Investigative Topic (Science, Social Studies, etc.) (25%): With students in your class, you will investigate a topic of interest to them that involves collecting data through an investigation. You will involve students in planning, investigating, and producing the project that will involve a minimal of three lessons. This may be building a tiny home on a smaller scale, building and testing paper airplanes that measure design and distance flying for efficiency, designing and building ramps and pathways for marbles to travel, for example. We will discuss possibilities in class. Your project should integrate a relevant and meaningful connection to children’s literature, as well.

Reading and Practice Reflections Journal (15%): During the semester, you will complete various entries in your math journal within **3** categories: 1) Math Starters, 2) Class Activities, 3) Reading Responses. Journal entries will include but are not limited to reading responses, reflections, notes, class activities (some of which you will be responsible for leading), and practice to document your learning. Journal entries are designed to help you make connections between the readings, mathematical content, and what you are seeing in the practicum fieldwork. The journal is to be brought into each class meeting. In your journal, you will also document the specific, detailed examples of the Standards of Mathematical Practice (SMPs) students exhibit and specific examples of the Mathematics Teaching Practices you observe from the field. We will be discussing these examples in class to give real world context to our learning.

Another important task each week for which you will be responsible is to document in your journal an assessment of students’ mathematical thinking through examining their mathematical work, how the student thought about the problem, any misconception the student may have had, and how you would address the student in next steps for deeper understanding of the mathematical concept. We will address these tasks in class each week in relation to the topics being discussed and the problems your students are solving in your practicum.

Journals are assessed **three times** throughout the semester to monitor candidates’ progress and growth in mastery of the material. You will be given feedback each time based on the content and pedagogical knowledge you demonstrate. This is all formative assessment that will help prepare you for the summative end of semester assessment. Below is a list of some items that you will add to your journal throughout the semester.

Content and Pedagogical Content Knowledge Test (20% points): Pedagogical knowledge, content knowledge, and pedagogical content knowledge (PCK) are all required for effectively teaching mathematics to you young learners. PCK involves understanding learning trajectories, identifying conceptual versus procedural knowledge, discourse and questioning strategies to support learners, knowledge of the Mathematical Teaching Practices (MTP) and knowledge of the Standards of Mathematical Practice (SMP). Being able to explain, identify, and create learning experiences is fundamental in supporting all learners in their mathematical journey. You will complete an assessment utilizing content standards related to geometry, proportional reasoning, measurement, data analysis, and statistics in which you apply these skills, along with your demonstration of the professional understanding of common elementary mathematics strategies and representations. This will involve answering questions about measurement properties, units and tools (such as angles, relationships between meters and millimeters, volume, protractors, relationship between things like area and perimeter, shapes, dimensions, and formulas), analyzing data, proportionally reasoning in context, explaining vocabulary.

**Table outlining journal sections:**

|  |  |
| --- | --- |
| **Journal Content Sections** | **Description of material in this section** |
| *Mathematics Content**Questions (MCQs)* | * Weekly question responses to the mathematical content summative question on topic discussed that week in class
 |
| *Practicum Entries**(Your 2 day a week and 1 full week placement)* | * This is where you will record at least *one SMP and one MTP* each week in your placement
* In addition, you will select one other pedagogical stance from Canvas and the content they are exploring to reflect upon about your time in placement
 |
| *Assess Students’ Thinking on Mathematical Problem-Solving**(ASTMP)* | * This is where you will assess of students’ mathematical thinking through examining their mathematical work, how the student thought about the problem, any misconception the student may have had, and how you would address the student in next steps for deeper understanding of the mathematical concept.
* This will be done in class from examples from your placement or others brought to you from our collective of student work.
 |
| Readings/ Homework | * Answers to question prompts and reflections (both in your text chapters) from your readings and videos you watch will be approximately 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.
 |
| Class Mathematical Activities | * content/ strategies
	+ Notes from class on learning trajectories
	+ Representation connections and examples
	+ Pentominoes
	+ Amusement Park Measurement/Tiny House
	+ Cow and Bull pens
	+ How big is a puddle
	+ Designing and using an angle – measurement using ramps and pathways
	+ Bowl-A-Fact Probability
	+ Data of an approved topic you choose
	+ Rock Paper Scissors Probability (MT in the Middle)
	+ ELL/ Discalculia/ Differentiation/ Modification/

Accommodation Jigsaw* All activities and stations in class
* All articles
* Vocabulary
* SMPs brainstorm
* MTP sort
 |

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Week of** | **Topics** | **Read for Class** | **Aligned Obj** |
| **8/18-8/21** | * Introductions:
	+ - Creating Community Through Effective Math Teaching
		- The Power of Reasoning and Investigating Why: Look at what's happening (Sherry Parrish and Number Talks video - begin in class for teacher candidates to finish at home)
			* Pre-Assessment: The Lego Group Challenge
			* Pentominoes – how many unique shapes?
* Syllabus and Assignments
* Teaching Principles & Revisiting the Standards
* Article: Shih, J. (2022). “13 Rules that expire.” *Mathematics Teacher: Learning and Teaching PK-12, 115*(3)*.* NCTM. <https://doi.org/10.5951/MTLT.2021.0285>
* Review of Question Types (see handout)
* MCQ: I used to think……; Now I think…..
 | NCTM Article,Jigsaw | **Pedagogical Connection:** Analyze the Game or the Group Task through the lens of SMPsSMPs:1, 2, 3 |
| **8/25-8/28** | * Daily Data
* Homework Debrief
* Measurement: Type, unit, and tool
	+ Nonstandard and standard activity
	+ Tape Strip activity
	+ Volume and Surface Area: Box activity
* Math Stations
	+ Amusement Park/ Tiny homes Design (area and perimeter)
	+ Cow Pens and Bull Pens – area, perimeter, and algebraic expression
	+ Polygon Perimeters
* Lesson planning and Learning trajectories
	+ Group lesson plan with the 5Es
		- What do accommodations, modifications, and differentiation look like for different learners?
* Literature connection
* MTPs: Support productive struggle in learning math
* *ASTMP*
* MCQ
 | Ch 4 (Van de Walle), Reggio-Inspired Mathematics | Analyze the 8 Teaching practices (MTPs) with the facilitation of the Mini Lesson and Bull Pens. SMPs: 1, 2 3, 7 |
| **9/8-9/12** | * Daily Data
* Homework & Placement Debrief
* Geometry: VdW’s levels of Geometric Thinking
	+ Properties of shapes & Geometry Learning Progression
	+ Stations: Geoboards, faces, and properties of shapes
	+ Angle measurements
	+ Tangram puzzles
* Ramps and Pathways
	+ Angles, length, standard/non-standard measuring
* Ways to include in a SIOP lesson for ELL
* Literature connection
* What MTP have you observed?
* MCQ
* *ASTMP*
* HW chapter 19 and Borgioli, G. M., & Carter, I. b. K. J. (2022). “Equity for English Language Learners in Mathematics Classrooms”. Mathematics Teacher: Learning and Teaching PK-12, 115(8), 600-608. Retrieved Apr 21, 2025, from <https://doi.org/10.5951/MTLT.2022.0113>
 | Ch 18VdW,Ch 1 NCTM-DEU | **Pedagogical Connection:** How can multiple representations support diverse learning styles?SMPs: 2, 3, 8 |
| **9/15** | * Daily Data
* Homework & Placement Debrief
* Transforming space and objects
	+ Standards
	+ Variant and invariant properties in transformation
	+ Measuring geometric attributes
* Literature connection
* What MTP have you observed in your classroom?
* *ASTMP*
* MCQ
* ½ Journals Due
 | Ch 19Read article | SMPs 1, 2, 3, 6 |
| **9/22** | * Daily Data
* Homework & Placement Debrief
* Data Analysis
	+ Standards
	+ Data/ Graphing Memes: Contextual Teaching Activity
	+ Student Data examples
	+ Charts and graphs comparison
	+ Review [GAISE](https://www.amstat.org/education/guidelines-for-assessment-and-instruction-in-statistics-education-%28gaise%29-reports)
* Literature connection
* What MTP have you observed in your classroom?
* *ASTMP*
* MCQ
* ½ Journals Due

Homework review the [GAISE](https://www.amstat.org/education/guidelines-for-assessment-and-instruction-in-statistics-education-%28gaise%29-reports) and Frischemeier, D. (2022). Introducing Grade 3 Students to Digital Data Exploration. Mathematics Teacher: Learning and Teaching PK-12, 115(6), 413-421. Retrieved Apr 21, 2025, from <https://doi.org/10.5951/MTLT.2021.0264> | Ch2-3 NCTM-DEU | SMPs 1, 2, 3, 6 |
| **9/29** | * Daily Data
* Homework & Placement Debrief
* Statistics
	+ Stats in the Classroom video
	+ Central Tendency (Mean, Median, Mode, Range) with classroom data
		- Considering students with 504s, IEPs, and ELL from an asset-based perspective that encourages PRODUCTIVE struggle
	+ Handshake Problem

In class: Wood, M. B., Sheldon, J., Felton-Koestler, M. D., Oslund, J., Parks, A. N., Crespo, S., & Featherstone, H. (2019). 8 teaching moves supporting equitable participation. *Teaching Children Mathematics, 25*(4), 218–223.<https://doi.org/10.5951/teacchilmath.25.4.0218>* *ASTMP*
* MTPs: Use and connect mathematical representations
* What MTP have you observed in your classroom?
 | CH20Data, article jigsaw | **Pedagogical Connection:**How can graphing tasks build conceptual understanding and procedural fluency?SMPs:1, 2, 3, 6 |
| **10/6** | * Daily Data
* Homework & Placement Debrief
* Probability
	+ Exploring Probability Stations
	+ Designing a probability assessment
	+ Bowl-A-Fact Probability
* Literature connection
* What MTP have you observed?
* *ASTMP*
* MCQ

HW read: Bresser, R. (2003). Helping English-Language Learners Develop Computational Fluency. *Teaching Children Mathematics*, *9*(6), 294-299. Retrieved Apr 21, 2025, from <https://doi.org/10.5951/TCM.9.6.0294> | Ch 21 | SMPs 1, 2, 3, 4, 5, 6, 7, 8 |
| **10/9-10/10** | **FALL BREAK** |  |  |
| **10/13-10/16** | * Daily Data
* Homework & Placement Debrief
* Increasing Patterns #3, 4, 5
* Revisiting Models in Computation:
	+ Conceptual understanding and procedural knowledge through questioning
	+ Patterns and Analysis Stations
* *Lesson Plan and Reflection 1 is due*
* *ASTMP*
* What MTP have you observed?
 | NCTMarticle | **Pedagogical Connection:** How do analyzing patterns help make sense of math relationships? SMPs: 1, 2, 7 |
| **10/20-10/23** | * Daily Data
* Homework & Placement Debrief
* Design Project and Literature connection due for in-class practice and critique
* What MTP have you observed?
* *ASTMP*
* MCQ
 | Watch Class-room video | S |
| **10/27-10/30** | * Daily Data
* Homework & Placement Debrief
* Revisiting the Learning
	+ Conceptual understanding and procedural knowledge
	+ Assessment stations
* What MTP have you observed?
* *ASTMP*
* MCQ
* ½ Journals Due
 |  | SMP 1, 2, 6, 7, 8 |
| **11/3-11/6** | * NO CLASS – in field placement all week: Teach *Small group data- informed lesson*
 |  |  |
| **11/10-11/13** | * Daily Data
* Homework & Placement Debrief
* SMPs: Student grouping and group work/
	+ Function with Patterns, Tables, Graphs and Symbols Activity
* *Small group data-informed lesson Due*
* What MTP have you observed?
* *ASTMP*
* MCQ
* ½ Journals Due
* *HW chapter 6 and* Jackson, P., & Dietiker, L. (2024). An Asset-Based Approach for ELLs in Mathematics. Mathematics Teacher: Learning and Teaching PK-12, 117(10), 729-736.
 | Chapter 6 and article | SMP 1, 2, 3, 4 |
| **11/17-11/20** | * Daily Data
* Homework & Placement Debrief
* Connecting to our Asset Based Context: Assessing learners
	+ Dyscalculia
	+ Accommodations and Modifications for all learners
	+ <https://ldaamerica.org/what-is-dyscalculia/> & <https://www.edutopia.org/article/teaching-students-dyscalculia/>
* Model Eliciting Activities in Measurement
* *ASTMP*
* What MTP have you observed?
* **Integrated Project Due**
* MCQ
 |  | SMP 7, 8 |
| **11/24-11/28** | **THANKSGIVING AKA****INDIGENOUS PEOPLES DAY** | **BREAK** |  |
| **12/1-12/4** | * Daily Data
* Homework & Placement Debrief
* Technological Resources and Connecting with families and stakeholders
* Polygons (regular and irregular) using virtual manipulatives and then through AI
	+ Polygon Perimeters
* Polygons and angles (interior and exterior)
* Differentiation, Equity in mathematics, adapting plans and resources for learner need
* Examining tasks and differentiating based on sample student data
* *ASTMP*
* What MTP have you observed?
* Next steps, professional goals, and wrapping up;What MTP have you observed?
* HW read1) Karp, K., & Howell, P. (2004). Building Responsibility for Learning in Students with Special Needs. Teaching Children Mathematics, 11(3), 118-126. OR 2) Yeh, C., Rigby, L., Huerta, S., & Engelhard, C. (2024). Culturally Sustaining Universal Design for Mathematics Learning. Mathematics Teacher: Learning and Teaching PK-12, 117(11), 792-801.
* **All Journals Due**
 | Article jigsaw | SMP 1, 2, 7, 8 |
| **Finals** | * Final exam
 |  |  |

***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 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.*

#  Class Policy Statements:

* **Technology:** Students are responsible for checking their Auburn University email and Canvas accounts daily for announcements.
* In class: As research on learning shows, unexpected noises and movement 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 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.*
* We will be utilizing technology in class as we explore integrated STEM, virtual manipulatives, generative AI resources, etc… Therefore, please note it is encouraged as an instructional tool and resource. 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 an on- campus computer lab, public library, etc. if needed to ensure access. Make sure to plan ahead with a back-up plan in case of technical problems. For Canvas issues, please reference Biggio Center's Student Self-Help for Canvas Page.
* 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. After submitting work in Canvas, immediately check to see if it is captured as submitted.

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

* Excused absences are granted to students as defined in the Auburn University *Student Policy eHandbook*, and include the following: death of an immediate family member, trips for a 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 in class, the final grade will be lowered one letter grade. At the third unexcused absence, the student will have a conference 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. It is important that we learn from each other in these shared experiences, as your perspectives might inform how your peers support a young learner with similar perspectives and/ or experiences; therefore, participation and work completed in class cannot be made up easily. Please contact the professor to discuss ways to learn about the content that was missed.
	+ 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 harm nor help the student’s overall course grade. However, it is still critical that the student contact the instructor to learn about the content that was missed.
	+ 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 the 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 electronically submit their approved accommodations through AU Access and arrange a meeting with the instructor during office hours the first week of classes or as soon as possible if accommodations are needed immediately. We can arrange an alternate time if you have a conflict with my office hours. To set up this meeting, contact me by e-mail. If you need accommodations but have not yet established them, make an appointment with the Office of Accessibility, 1228 Haley Center, 844-2096.

Once a student has established accommodations with the Office of Accessibility and submitted them through AU Access, the student is held responsible for arranging a meeting with the professor to discuss their applied accommodations. Discussions regarding accommodations are confidential. Students do not need to disclose the basis for their accommodations.

Accommodations are placed in effect immediately following the meeting. All slides and handouts are available on Canvas.

**Academic Honesty:** Some assignments will involve integrating readings and websites into your reflections, assignments, and lessons. Plagiarism is the act of representing words, data, works, ideas, computer programs or output (e.g., created by an AI or other program), 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. In addition, while AI is a wonderful tool, if AI is used in any assignment, it must be noted and very clear what work is AI and what work is created by the individual.

* + 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 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 on the basis of 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 please go to: Title IX.

**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 to class presentations and engage.

Professionalism is more than simply being physically present in the classroom. In this course you will be expected to treat group members with respect and to 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 by planning to discuss grades or other points of discussion/contention during my office hours or by an appointment rather than during class time. I will do my best to meet in person or via ZOOM at times that are convenient for you.
		- Budding professionals take responsibility for their learning: My overarching goal is to support class members in becoming the best they can 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. Please allow me up to 48 hours to respond to email. If you have an emergency, please call my cell phone (personal number) on the syllabus.
		- Additionally, if you are struggling academically with this class, **DO NOT wait until the end of the semester to ask for help.** Your instructor is here to help you but cannot provide help unless you communicate the problem. You are strongly encouraged to reach out early in the course and follow-up whenever you encounter challenges with the material.

**Health and Well-Being Resources:** As these are difficult times, personal and academic stress can take a toll and increase effects. If you find yourself in need of any additional medical support contact the AU Medical Clinic. If you or someone you know are experiencing food, housing or financial insecurity, please visit the Auburn Cares Office

# 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.

# Mental Health:

* + - * If you are experiencing stress that feels unmanageable (personal or academic) during the semester, Auburn University’s Student Counseling and Psychological Services (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. There are also wellbeing resources related to mindfulness and stress on the Canvas site.
			* 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>
			* If you have questions, ideas or difficulties about navigating on the Canvas course, please reach out. This is interactive and meant to help you be successful in this course, gather resources, and connect the meaningful experiences and content of the course to your future vision of your mathematics classroom.