

COLLEGE OF EDUCATION
DEPARTMENT OF SECONDARY EDUCATION
COURSE SYLLABUS

FALL 2025

Course Prefix and number: MAE 6356

Course Title: Teaching pre-secondary school mathematics

Instructor: Dr. Ruthmae Sears

Course Prerequisites (if any): 12 semester hours of mathematics and department permit required.

Course Description:

The major goal of the course is to develop concepts, skills, and pedagogical procedures for teaching mathematical concepts and skills appropriate to pre-secondary school years. To this end, the course will provide for an integration of mathematics content and the middle school philosophy while examining learning and teaching at this level.

Course Goals and Learning Outcomes:

Upon completion of this course, students will have demonstrated:

- Knowledge of current teaching-related developments in mathematics education and their potential impact on the middle school mathematics curriculum;
- Knowledge of instructional practices appropriate for developing number sense, rational number concepts;
- Knowledge of instructional practices appropriate for developing algebraic ideas, including notions of patterns and functions;
- Knowledge of instructional practices appropriate for developing geometric ideas, including relationships between geometry and measurement;
- Knowledge of instructional practices appropriate for developing reasoning and proof;
- Knowledge of instructional practices appropriate for developing ideas related to statistics and probability;

- Knowledge of current assessment recommendations as they relate to the teaching of pre-secondary mathematics.
- Knowledge of educational technology (e.g., calculators and computers) concepts, their principles, and their application in the teaching of middle school mathematics

Assignments

All assignments (graded and ungraded (e.g. assigned readings)) must be completed by the start of class on the due date. Many of the activities in which we will engage will depend on your preparedness for class. Therefore, it is strongly recommended that students arrange to meet with the instructor in advance to receive feedback and additional guidance regarding progress on submissions, if needed. Submitted assignments will be graded according to a scoring rubric that will be distributed. There are no extra credit assignments.

If a student misses a class, it is the student's responsibility to secure from other students the information missed or material distributed. The student at the next class must retrieve scored assignments/papers distributed to the class or it will be discarded. Students should retain all graded papers until final grades are issued.

If a student is absent on a day when an assignment is due, the assignment must be submitted via Blackboard/ Canvas and or their university email account to the instructor. A hardcopy of the same document should also be submitted.

The due dates for assignments are clearly specified in the "Course Assessment" section of this document. Generally, permission to submit late work is only granted in extreme family or personal circumstances, and not because the student failed to submit the work in a timely fashion. Unless the instructor of the course has granted the student a formal extension, the following penalties will be applied for assignments submitted late:

- up to two days late, loss of 15% of the total available marks for the assignment;
- two to five days late, loss of 25% of the total available marks for the assignment;
- five to seven days late, loss of 35% of the total available marks for the assignment;
- seven to nine days late, loss of 45% of the total available marks for the assignment;
- over nine days late, no mark will be given for the assignment. Hence, the student would obtain a 0% as a grade for the assignment.

****Note:** Expect to complete at least 3 hours of work outside of class for each hour you spend in class.

Course Assessment and Grading Categories

I know that in addition to your responsibilities for this class, you are all incredibly busy and productive in a multitude of other life roles. It is my sincere hope that you will read this syllabus carefully and ensure that you are willing to devote the time and energy needed to have a successful and enjoyable experience in this course. Most people who do not succeed in this course are unwilling and/or unable to devote the necessary time to this course. The "necessary

time” depends on prior knowledge, the grade you would like to earn, and the effort taken to complete the assigned tasks.

Students’ achievement of course goals and objectives are based on the following assessments.

- Journal Article Review
- Final Project – Video Presentation
- Other Special Assignments, included but not limited to:
 - Professional Development Reflection
 - Design Mathematics Lesson Based on Research
 - Mini-Teaching Presentations
 - Classroom Observation
 - Facilitation of Assigned Readings

Assignments are to be submitted before the start of class (5:00 p.m.) on the due date. Course grades are based upon point allocations. The table below displays the points allocated for each assignment, with respect to the percentage it contributes to the final grade, and the tentative date the assignments are due.

The following represents my current thinking about the evaluation of this course. I reserve the right to make changes/adjustments as needed.

Assessment	Points allocated	Percentage of Final Grade	Tentative Due / Scheduled Date
Journal Article Review	50	10%	October 2, 2025
Classroom Observation Report based on a minimum of 10 classroom observations and Reflections on efforts to support all learners in learning mathematical content	75	15%	October 23, 2024
Final Project- Video Presentation	100	20%	November 20, 2025
Professional Development Reflection • Webinar: How to Design and Deliver Effective Math Intervention - https://www.youtube.com/watch?v=c5E6iza-pEw • Webinar: Mathematics Interventions for Struggling Middle School Students - https://www.youtube.com/watch?v=2NduSS5B0AI • (Gr PreK-12) Keynote Session - Dr. Francis Su https://youtu.be/TSAXS8NTf-0?si=lvdldlpdaBZlHz84 • Math Mindset: Transforming the Middle School Math Experience (REL Midwest) https://youtu.be/hxsH7QAgT5c?si=3FWflgyTC5f_Hnc9	75	15%	September 18, 2025
Design of mathematics lesson plan based on research	50	10%	October 30, 2025
MyMathTest - MAE 6356 Fall 2025 Program - XL50-S14J-401Z-96Y2	50	10%	September 4, 2025
Mini co-teaching presentation	50	10%	November 6 and November 13, 2025
Teaching mathematics by integrating content in the assigned readings, and physical manipulatives	50	10%	Throughout the semester

**** Please note that multiple absences from class can result in grade reductions and/or a failing grade in the course.**

Course Grading Scale

The university's plus/minus system of grading will be used. The Grading Scale is as follows: A (90%-100%); B (80%-89%); C (70%-79%); D (60%-69%); and F (below 60%).

Professional Disposition & Responsibilities

Professional Dispositions Framework

The University of South Florida's College of Education (USF COEDU) is committed to helping students build upon and successfully learn professional dispositions and ethical practices as they prepare to become future educators or enhance their knowledge and abilities.

Teaching requires not only specific content and pedagogical knowledge and skills but also positive attitudes regarding multiple dimensions of the profession. USF COEDU's Dispositions Framework is based on literature from the field and aligned with the Florida Educator Accomplished Practices (FEAPs). We expect candidates who enter our programs to display and continue to develop and demonstrate these dispositions.

USF COEDU has identified dispositions we will highlight, celebrate, learn, and monitor starting at admissions and throughout the initial teacher certification programs.

- The candidate demonstrates collaboration.
- The candidate demonstrates a growth orientation.
- The candidate demonstrates reflective thinking.
- The candidate demonstrates care for students.
- The candidate demonstrates ethical responsibility and professionalism.

Dispositional Descriptions and Indicators

Collaborative

Education professionals must work together with their professional colleagues in schools and agencies, as well as with students, families, and communities, to achieve common goals and solve problems. Collaboration is founded upon the intentional seeking out of the opinions, expertise, and knowledge of others, consideration of all points of view, and a willingness to compromise to reach common goals.

Indicators for Collaboration

- Establishes and maintains respectful and professional relationships and positive interpersonal connections with PK-12 students, peers, mentor teachers, school personnel, caregivers/families, and professors.
- Demonstrates initiative, interest in, and enthusiasm for teaching and learning when working in coursework and clinical experience classrooms with their mentor teacher and other school personnel.
- Interacts and communicates effectively and respectfully with people with characteristics and perspectives different from oneself.

Growth-Oriented

Education professionals strive for high standards of instruction and service and to assist those served to achieve their full potential through increasing their knowledge and skills. They continuously improve their practice through self-assessment, progress monitoring, consultation, and collaboration with colleagues. They remain current with theory and practice in their field and with technological innovations.

Indicators for Professional Learning and Growth orientation

- Demonstrates a commitment to lifelong learning and continuous improvement through inquiry, professional endeavors, dialogue, and reflection.
- Demonstrates receptivity to constructive feedback by actively applying ideas and adjusting performance accordingly to improve professionalism, learning, and instruction.
- Seeks and processes appropriate support, resources, feedback, and professional growth opportunities to enhance teaching and learning.

Reflective

Education professionals actively analyze information and data acquired through inquiry and practice. Reflective thinking results in careful deliberation and reasoning in making decisions and choosing courses of action in instruction and service. Educators also critically examine the dynamics and social contexts in which they practice.

Indicators for Reflective Thinking

- Exhibits a growth mindset through an open-mind and willingness to learn from experience.
- Analyzes, synthesizes, and evaluates information and data acquired through ongoing inquiry and practice.
- Engages in careful deliberation and reasoning when making pedagogical decisions.
- Demonstrates careful consideration of the consequences of one's actions as they affect others (e.g. students, families/caregivers, peers, school faculty, etc.).

Caring

Education professionals take an active interest in the physical, emotional, and intellectual health, well-being and growth of students served. They take appropriate steps to intervene when student health or well-being is in jeopardy, and support and encourage students to reach their full potential.

Indicators for Caring

- Exemplifies the belief that all students can learn and reach their full potential.
- Promotes the physical, emotional, mental, and intellectual health, well-being, and growth of students.
- Serves as an advocate for students when necessary.

Professional

Education professionals are guided by a commitment to adhere to professional codes of behavior. They hold themselves to high standards of conduct in their interactions with students, colleagues, families, and the community.

Indicators for Professionalism

- Exhibits professional demeanor (attitude), communication, dress, and behavior appropriate to the school setting, including sound professional judgment.
- Demonstrates discretion when discussing students, peers, faculty, and schools by not participating in disparaging conversations and/or working to diffuse such language.
- Prepares for class/seminar and clinical experiences and completes work in a timely manner.
- Demonstrates punctuality and regular attendance to university coursework clinical experience.
- Takes initiative by engaging professionally in university coursework and clinical experience classroom.
- Communicates in a timely matter with university supervisor, mentor teacher, and other colleagues.
- Adheres to and upholds the university's commitment to academic honesty and personal integrity. (Student Code of Conduct, social media policy, USF Academy Honesty/Personal integrity)
- Understands and maintains confidentiality related to student records, personal family information, and student variability in educational programming in order to protect the individual, child's, and family's privacy, unless such disclosure serves a professionally compelling purpose or is required by law (i.e., FERPA).

Disposition

According to the COE, it is important that students demonstrate the disposition necessary of a professional in this field. Disposition, according to Webster's dictionary, is defined as a prevailing tendency, mood, or inclination. As such, an educator's professional disposition includes, but is not limited to: self-sufficiency, intellectual curiosity, reflective practice, and ongoing improvement. **Self-sufficiency** is the ability to work autonomously, communicate effectively, seek assistance and obtain additional information when needed, work within established timelines, and work effectively with peers. **Intellectual curiosity** refers to the acute awareness that learning does not simply occur within the classroom walls and that it may necessitate extra effort to obtain the intended knowledge. **Reflective practice** “describes a process of problem solving, reconstruction of meaning and subsequent reflective judgments while persons are engaged in significant new activity” (Reiman, 1999, p. 598). As such, reflection refers to the ability to consider experiences (e.g. new ways of teaching a topic) and its influence on your own understanding, the understanding of the students you will teach, or potential teaching practices. By reflecting on experiences, teacher or those who aim to become teachers

demonstrate a capacity (or disposition) to analyze the process of what they are doing, and to reconstruct their professional and personal knowledge schemes, while simultaneously making judgments to adapt their practice so that it best matches the needs of students. Theoretically, it connotes conceptually complex, ethical, caring, and flexible persons who consider alternative viewpoints (Reiman, 1999, p. 598).

Ongoing improvement refers to the recognition that current states, strategies, practices, or lines of thinking may not be the most appropriate or effective and the willingness to attempt things differently if an appropriate rationale surfaces.

[Reiman, A. J. (1999). The evolution of the social roletaking and guided reflection framework in teacher education: Recent theory and quantitative synthesis of the research. *Teaching and Teacher Education*, 15, 597-612.]

Responsibilities of teachers of mathematics

The items listed below represents a small fraction of the things mathematics teachers must do in the course of their work:

1. Design mathematically accurate explanations that are comprehensive and useful to students;
2. Use mathematically appropriate and comprehensible definitions;
3. Represent ideas carefully, mapping between a physical or graphical model, and symbolic notation, and the operation or process.
4. Interpret and make mathematical and pedagogical judgments about students' questions, solutions, problems and insights (both predictable and unusual);
5. Be able to respond productively to students' mathematical questions and curiosities;
6. Make judgments about the mathematical quality of instructional materials and modify as necessary;
7. Be able to pose good mathematical questions and problems that are productive for student's learning;
8. Assess students' mathematics learning and take next steps.

[Source: Ball (2003) Mathematics in the 21st Century: What mathematical knowledge is needed for teaching mathematics. <http://www.ed.gov/inits/mathscience/ball.html>]

Students are expected to demonstrate behavior consistent with a professional career. An individual's temperament, aptitudes, beliefs, values, etc. should be exemplary for teacher candidates who are pursuing a teacher education program. Failure to demonstrate such conduct will impact a student's grade as noted in the course syllabus. In particular, students must:

- Attend all class meeting. You are expected to be present at the beginning and conclusion of this class. Individuals' attendance, punctuality and engagement should be consistently eminent.
- Prepare carefully for class. Your ability to contribute to your own and your peers' understanding is dependent on your level of preparation. Therefore, you must be thoroughly prepared for each class.
- Complete and submit all assignments on time. You should demonstrate an ability to complete work autonomously, effectively utilize feedback, and follow directions. All assignment should be completed on time (before the specified due date and time). See assignment policy above. Students should maintain a file of all graded assignments until after receiving an official grade notification from the registrar.

- Collaborate responsibly with colleagues in coursework. Thoughtful participation, capacity to objectively reflect on one's disposition and behaviors, and demonstration of civility, diplomacy and sensitivity towards others should be evident.
- Engage in all course activities and discussions.
- Individuals should exhibit a positive response to feedback.
- Exhibit an aptitude to objectively consider new ideas.
- Interact professionally with classmates. Be respectful in conversation, behavior, and written correspondence to all parties. Students must demonstrate respectful standards of behavior during class discussion. *Please turn off all cellular phones, or place them in a non-ringing mode.*
- Students are expected to conduct themselves as professionals by positively influencing the classroom environment. Students who come late, leave early, or are absent, rarely contribute ideas, appear to be participating in discussions extraneous to the class, are observed to be doing work not related to the class, are disruptive, or inattentive, or passive are not behaving professionally.
- Students are expected to support all claims made in written and oral communications by relevant mathematics education literature.

Productive Disposition

"...*Productive disposition*, described as a tendency to see mathematics as sensible, to perceive mathematics as useful and worthwhile, to believe that mathematics can be learned with steady effort, and, perhaps most important, to see oneself as an effective learner and doer of mathematics (NRC [2001](#)).” (Philipp & Siegfried, 2015, p. 490)

[Philipp, R. A., & Siegfried, J. M. (2015). Studying productive disposition: The early development of a construct. *Journal of Mathematics Teacher Education*, 18(5), 489-499.]

NCTM (2014) Effective Mathematics Teaching Practices

As teachers of mathematics you are expected to exhibit the professional standards of the discipline. During your mathematical instruction, you are encouraged to exhibit the NCTM (2014) effective mathematics teaching practices. The practices are as follow:

- **Establish mathematics goals to focus learning.** Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
- **Implement tasks that promote reasoning and problem solving.** Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.
- **Use and connect mathematical representations.** Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
- **Facilitate meaningful mathematical discourse.** Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.

- **Pose purposeful questions.** Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.
- **Build procedural fluency from conceptual understanding.** Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems
- **Support productive struggle in learning mathematics.** Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.
- **Elicit and use evidence of student thinking.** Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.
<http://www.nctm.org/Conferences-and-Professional-Development/Principles-to-Actions-Toolkit/Resources/7-EffectiveMathematicsTeachingPractices/>

AMTE Standards (2017) for well-prepared beginning teachers of mathematics

C.1	MATHEMATICS CONCEPTS, PRACTICES, AND CURRICULUM	Well-prepared beginning teachers of mathematics possess robust knowledge of mathematical and statistical concepts that underlie what they encounter in teaching. They engage in appropriate mathematical and statistical practices and support their students in doing the same. They can read, analyze, and discuss curriculum, assessment, and standards documents as well as students' mathematical productions.
C.2	PEDAGOGICAL KNOWLEDGE AND PRACTICES FOR TEACHING MATHEMATICS	Well-prepared beginning teachers of mathematics have foundations of pedagogical knowledge, effective and equitable mathematics teaching practices, and positive and productive dispositions toward teaching mathematics to support students' sense making, understanding, and reasoning
C.3	STUDENTS AS LEARNERS OF MATHEMATICS	Well-prepared beginning teachers of mathematics have foundational understandings of students' mathematical knowledge, skills, and dispositions. They know how these understandings can contribute to effective teaching and are committed to expanding and deepening their knowledge of students as learners of mathematics.
C.4	SOCIAL CONTEXTS OF MATHEMATICS	Well-prepared beginning teachers of mathematics realize that the social, historical, and institutional contexts of mathematics affect teaching and learning

	TEACHING AND LEARNING	and know about and are committed to their critical roles as advocates for each and every student.
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AMTE Standards (2017) for effective programs for preparing beginning teachers

P.1	ESTABLISH PARTNERSHIPS	An effective mathematics teacher preparation program has significant input and participation from all appropriate stakeholders
P.2	OPPORTUNITIES TO LEARN MATHEMATICS	An effective mathematics teacher preparation program provides candidates with opportunities to learn mathematics and statistics that are purposefully focused on essential big ideas across content and processes that foster a coherent understanding of mathematics for teaching.
P.3	OPPORTUNITIES TO LEARN TO TEACH MATHEMATICS	An effective mathematics teacher preparation program provides candidates with multiple opportunities to learn how to teach through mathematics-specific methods courses (or equivalent professional learning experiences) in which mathematics, practices for teaching mathematics, knowledge of students as learners, and the social contexts of mathematics teaching and learning are integrated
P.4	OPPORTUNITIES TO LEARN IN CLINICAL SETTINGS	An effective mathematics teacher preparation program includes clinical experiences that are guided on the basis of a shared vision of high-quality mathematics instruction and have sufficient support structures and personnel to provide coherent, developmentally appropriate opportunities for candidates to teach and to learn from their own teaching and the teaching of others.
P.5	RECRUITMENT AND RETENTION OF TEACHER CANDIDATES	An effective mathematics teacher preparation program attracts, nurtures, and graduates high-quality teachers of mathematics who are representative of diverse communities.

Attendance

Candidates are expected to attend all classes. Each candidate should arrive prior to class and remain until the conclusion of the class. Prompt attendance is expected. A tardy may count as an absence. In the event of an unavoidable absence (e.g. serious illness, accident, hospitalization,

or significant immediate family tragedy) the candidate may provide the instructor with documentation verifying the absence within 48 hours for any consideration. If a candidate anticipates the necessity of being absent from class due to the observation of a major religious observance please provide the instructor a notice of the date(s), in writing, by the second class meeting. With the exception of major religious observances, candidates who come to class late, leave early, and/or miss class are not entitled to the same professional disposition points (and/or other forms of evaluation) as candidates who attend more or all classes. Regarding engagement, each candidate must be actively engaged in class work at all times to be considered present. Candidates will be considered absent if they disengage from class activities and professional disposition points will be deducted. Absences, coming late, leaving early and disengaging in class significantly affect each candidate's ability will impact your overall grade in the course. **More than two unexcused absences will result in an "F" in the course.**

Web Portal Information

An official USF e-mail account is given to every USF student when enrolled. Every official correspondence to students will be sent to this account via Blackboard/ Canvas. Please ensure that you arrange to forward your email to an account that you read regularly if you do not use the official USF email.

Academic Dishonesty

Plagiarism is defined as "literary theft" and consists of the unattributed quotation of the exact words of a published text, or the unattributed borrowing of original ideas by paraphrase from a published text. On written papers for which the student employs information gathered from books, articles or oral sources, each direct quotation, as well as ideas and facts that are not generally known to the public at large must be attributed to its author by means of the appropriate citation procedure. Citations may be made in footnotes or within the body of the text. Plagiarism also consist of passing off as one's own segment or the total of another person's work.

Punishment for Academic Dishonesty will depend on the seriousness of the offense and may include receipt of an "F" with a numerical value of zero on the item submitted, and the "F" shall be used to determine the final course grade. It is the option of the instructor to assign the student a grade of F or FF (the latter indicating dishonesty) in the course.

Generative Artificial Intelligence (AI)

Use of an AI generator when an assignment does not explicitly call or allow for it without proper attribution or authorization is plagiarism.

ChatGPT and Generative AI

It is dishonest and unethical to submit work created by a generative artificial intelligence (AI) such as ChatGPT as an original assignment. Therefore, all assignments are to include proper citations, and are expected to be original works that was created entirely by the student. Thus, the use of a generative AI to complete assignments will result in a zero grade for the assignment and potentially an FF for the course.

USF – University Guidance

Recording of class sessions

- Students with disabilities will have appropriate accommodations for recordings as established by [SAS](#).
- Students may record class lectures which will be considered instructor-delivered academic content. No recordings of other students, class participation, or discussion will be permitted.
- Students do not need advance permission or to provide notice to record. But, students must monitor their recording so that it does not include participation by other students.
- Students may not publish (post or share) the recordings except as provided by statute. In the event permission is requested to publish (post or share), the student's request and instructor's consent must be in writing.
- Students and instructors are responsible for compliance with the statute and related potential sanctions. Misuse of the recordings may result in referrals as possible violations of the student code of conduct or considered academic disruptions.
- Additional links for reference:
 - [House Bill 233 \(2021\): Postsecondary Education](#)
 - [USF Regulation 3.025](#), Disruption of Academic Process
 - [USF Regulation 6.0021](#), Student Code of Conduct

Diversity of thought relative to mathematics teaching and learning

It is fundamental to the University of South Florida's mission to support an environment where divergent ideas, theories, and philosophies can be openly exchanged and critically evaluated. Consistent with these principles, this course may involve discussion of ideas that you find uncomfortable, disagreeable, or even offensive.

In the instructional setting, ideas are intended to be presented in an objective manner and not as an endorsement of what you should personally believe. "Objective" means that the idea(s) presented can be tested by critical peer review and rigorous debate, and that the idea(s) is supported by credible research.

In this course you may be asked to engage with complex ideas and to demonstrate an understanding of the ideas. Understanding and engaging with an idea does not require you to believe it or to agree with it.

Textbook(s) and Readings:

Required Text:

Rubenstein, R. N., Beckman, C. E., & Thompson, D. R. (2008). *Teaching and learning middle grades mathematics* (4th ed). Somerset, NJ: Wiley.

Required Resource:

Florida B.E.S.T Standards 2020

Supplementary readings will be accessible via the University of South Florida Library Presto course reserve services.

Recommended resources:

- Journals (e.g. Teaching Children Mathematics, Mathematics in the Middle School, Learning, Computing Teacher, Mathematics Teacher: Learning and Teaching PK–12 (MTLT), Middle School Journal, Instructor, School Science and Mathematics, Journal for Research in Mathematics Education).
- Various middle school mathematics texts.

Standard University Policies

Policies about disability access, religious observances, academic grievances, academic integrity and misconduct, academic continuity, food insecurity, and sexual harassment are governed by a central set of policies that apply to all classes at USF. These may be accessed at:

<https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspx>

ADA Statement:

Students with disabilities are responsible for registering with the Office of Student Accessibility Services in order to receive special accommodation and services. Please notify the instructor during the first week of classes if a reasonable accommodation for a disability is needed for this course. A letter from the USF Accessibility Services Office must accompany this request.

USF Policy on Religious Observances:

Students who anticipate the necessity of being absent from class due to the observation of a major religious observance must provide notice of the date(s) to the instructor, in writing, by the second class meeting.

Tentative Course Schedule

The following represents my thoughts for the course as I am preparing the syllabus. It is possible that chapters discussed or emphases may vary depending on the interest and needs of the students in the course

Date	Topic	Textbook Chapter to be Discussed	Supplementary Readings	Assignment Due
August 28, 2025	Standards for Preparing Teachers of Mathematics		AMTE (2018) Standards for Preparing Teachers of Mathematics https://amte.net/sites/default/files/SPTM.pdf Florida B.E.S.T Standards (2020) http://www.fldoe.org/core/fileparse.php/18736/urlt/StandardsMathematics.pdf ISTE Standards https://iste.org/standards/students https://iste.org/standards/educators	
September 4, 2025	Supporting all learners	Chapter 1- Creating a learning community - Mathematics Strand:	Eichhorn, M. M. S., DiMauro, P. J.,	MyMathTest due

		reasoning with patterns and algebra	Lacson, C., & Dennie, B. (2019). Building the optimal learning environment for mathematics. <i>Mathematics Teacher</i>, 112(4), 262-267. Hodkowski, N. M., & Carhart-Quezada, C. (2023). Let's Give Them Something to Talk About. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 116(11), 837-844.	Program ID: Program Code: XL50-S14J-401Z-96Y2
September 11, 2025	Reasoning and Sense Making	Chapter 1- Creating a learning community - Mathematics Strand: reasoning with patterns and algebra	Anderson, N. (2021). Keep Calm and Press for Reasoning. <i>Mathematics Teacher: Learning and Teaching PK-</i>	

			12, 114(8), 591-597. Burch, L., Tillema, E. S., & Gatza, A. M. (2021). "Counting" on Quantitative Reasoning for Algebra. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 114(6), 452-462. Lee, M. Y. (2017). Generating Linear Equations Based on Quantitative Reasoning. <i>Mathematics Teaching in the Middle School</i>, 23(2), 112-116. Ozturk, A. (2023). Fostering Quantitative Reasoning Through a	
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			Question of Fairness. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 116(4), 265-272. Watanabe, T. (2015). Visual Reasoning Tools in Action. <i>Mathematics Teaching in the Middle School</i>, 21(3), 152-160. Wieman, R. (2016). Five Steps to Zero: A Game for Number Sense and Reasoning. <i>Mathematics Teaching in the Middle School</i>, 21(7), 432-435.	
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September 18, 2025	Functions Concept	Chapter 1- Creating a learning community - Mathematics Strand: reasoning with patterns and algebra	Nielsen, M. E., & Bostic, J. D. (2018). Connecting and Using Multiple Representations. <i>Mathematics Teaching in the Middle School</i>, 23(7), 386-393. Velasco, R. C. L., & Degner, K. (2023). Representations of linear and nonlinear functions. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 116(5), 349-357. Wells, P. J. (2016). Understanding Linear Functions and Their Representations. <i>Mathematics Teaching in the Middle School</i>, 21(5), 308-316.	Professional Development Reflection
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September 25, 2025	Rational Numbers	Chapter 2- - The learning of mathematics – Mathematics Strand: Rational number and their uses	Ahrendt, S., Monson, D., & Cramer, K. (2021). Promoting Discourse: Fractions on Number Lines. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 114(4), 284-289. Beyranevand, M. L. (2014). The different representations of rational numbers. <i>Mathematics Teaching in the Middle School</i>, 19(6), 382-385. Roy, G. J., Harbour, K. E., Martin, C., & Cunningham,	

			M. (2022). Using Number Talks to Compare Fractions. <i>Mathematics Teacher: Learning and Teaching PK-12</i> , 115(12), 874-881.	
October 2, 2025	Arithmetic of fractions	Chapter 2- - The learning of mathematics – Mathematics Strand: Rational number and their uses	Bell, C. J. (2017). Measuring Tangrams on a Geoboard. <i>Mathematics Teaching in the Middle School</i>, 22(6), 374-378 Bhattacharyya, S., Namakshi, N., Zunker, C., Warshauer, H. K., & Warshauer, M. (2016). Mystery Fractions. <i>Mathematics Teaching in</i>	Journal Article Review

			<i>the Middle School</i>, 22(1), 52-59. Dixon, J. K., Rutledge, T., Caton, J. C., & Nolan, E. C. (2021). Playing with Fractions. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 114(6), 463-467. Jacobs, V. R., Empson, S. B., Case, J. M., Dunning, A., Jessup, N. A., & Krause, G. (2022). A New Twist on Fraction Equations. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 115(12), 859-866.	
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October 9, 2025	Learning theories & Effective Mathematics Teaching Practices	Chapter 2- - The learning of mathematics – Mathematics Strand: Rational number and their uses	Nielsen, M. E., & Bostic, J. D. (2018). Connecting and Using Multiple Representations. <i>M athematics Teaching in the Middle School</i> , 23(7), 386- 393. Watson, L. A., Bonnesen, C. T., & Strayer, J. F. (2021). The Nature of Mathematics: Let's Talk about It. <i>Mathematics Teacher: Learning and Teaching PK- 12</i> , 114(5), 352- 361.	
October 16, 2025 Virtual/ Online meeting	Van Hiele Model of the development of	Chapter 3- Planning and instruction – Mathematics strand: Geometry	Breyfogle, M. L., & Lynch, C. (2010). Van Hiele revisited. <i>Mathematics</i>	

	geometrical thinking and Cognitive Demand of Tasks	Measurement and Transformation	<i>Teaching in the Middle School</i>, 16(4), 232-238. Edwards, M. T., Meagher, M. S., & Özgün-Koca, S. A. (2017). Nurturing Argumentation and Reasoning with Pentominoes. <i>Mathematics Teaching in the Middle School</i>, 23(1), 54-57. James, C., Casas, A., & Grant, D. (2017). Using Scaffolding to Scale-up Justifications. <i>Mathematics Teaching in the Middle School</i>, 22(5), 294-301.	
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October 23, 2025	Lesson Planning	Chapter 3- Planning and instruction – Mathematics strand: Geometry Measurement and Transformation	Bostic, J. D., Vostal, B., & Folger, T. (2021). Growing TTULPs through Your Lessons. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 114(7), 498-507. Boyle, J.D., & Kaiser, S.B . (2017). Collaborative Planning as a Process. <i>Mathematics Teaching in the Middle School</i>, 22(7), 406-419. doi:10.5951/matht eacmidscho.22.7. 0406 James, C., Philiben, L., & Knievel, M. (2016). Doing the Maths: Supporting Student	Classroom Observation Report based on a minimum of 10 classroom observations and Reflections on efforts to support all learners in learning mathematical content
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			Justifications. <i>Mathematics Teaching in the Middle School</i>, 21(7), 416-423. Lemon, T., & Hendrickson, S. (2023). Building Coherence and Progression on Sound Frameworks. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 116(7), 490-502.	
October 30, 2025	Assessment	Chapter 4 – Assessment – Mathematics Strand: Data Analysis and Probability	Duckor, B., Holmberg, C., & Becker, J. R. (2017). Making moves: Formative assessment in	Design of Mathematics Lesson Plan Based on Research Due

			mathematics. <i>Mathematics Teaching in the Middle School</i>, 22(6), 334-342. Fischman, D., & Wasserman, K. (2017). Developing Assessment through Lesson Study. <i>Mathematics Teaching in the Middle School</i>, 22(6), 344-351. doi:10.5951/matht-eacmidscho.22.6.0344 Hicks, T., & Bostic, J. D. (2021). Formative Assessment through Think Alouds. <i>Mathematics Teacher: Learning and Teaching PK-</i>	
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			12, 114(8), 598-606. Vanoli, L., & Luebeck, J. (2021). Examining Errors and Framing Feedback. <i>Mathematics Teacher: Learning and Teaching PK-12</i>, 114(8), 616-623.	
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November 6, 2025				Mini Co-Teaching Presentation Due
November 13, 2025				Mini Co-Teaching Presentation Due
November 20, 2025				Final Project Presentation Due
November 27, 2025 NO CLASS	Thanksgiving holiday			
December 4, 2025	Reflections			