



*“... mathematical diversity – valuing the different ways that people see and think about mathematics.”
(Boaler, 2024)*

TED4350 (13418)

ONLINE

Educational Workshop: Advanced Mathematics Methods

Fall 2024

This syllabus is subject to change as needed. Any changes to the syllabus will be announced via email or posted on Blackboard.

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Course Philosophy and Description:

People are born with a great capacity to learn. Doing mathematics can be a creative and empowering extension of our innate sense-making abilities. Unfortunately, few students experience math this way. School teaches many students that doing math is about quickly recalling facts and following a lot of detailed rules. Furthermore, students often get the message that if they do not excel at those things, they are not as smart or as valuable as those who do.

The principles listed below are well supported by decades of educational research. They will form the backbone (sometimes explicitly, sometimes tacitly) of our work together.

- All students can make sense of rich mathematical ideas if their teachers provide appropriate opportunities for them to do so.
- All students have knowledge and strengths that are relevant to mathematics learning.
- All students benefit from strong relationships and supportive communities. Being a teacher is as much about building community—for our students and ourselves—as it is about developing content knowledge.

This course has been constructed to help you in critically examining the philosophies, theories, research, pedagogical techniques, and materials associated with effective learning and teaching.

Course Goals and Objectives:

We will address factors that support meaningful growth and progress on an inner journey towards personal transformation. Our classroom community will develop a process that will allow us to explore “who we are, what assumptions we hold as true, how and what we teach, how we organize ourselves, and what barriers prevent us from creating authentic learning environments” (Crowell, Caine & Caine, 1998).



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Students enrolled in this course will actively explore the methods of effective teaching to provide opportunities for successful learning. Emphasis is placed on the equity principle (learning for all) and development of conceptual understanding of topics, as well as project/problem-based learning.

Course Structure:

Classes for this course are online (UTEP Blackboard). Classes will be a combination of videos, readings, Blackboard discussion boards, individual/group course assignments and tasks, and project development. It is expected that students will participate in all activities and components of the course.

TED4350 Required Text:

Math-ish: Finding Creativity, Diversity, and Meaning in Mathematics, (2024). Boaler, J. 1st Edition
ISBN ISBN 978-0-06-342372-5

https://www.amazon.com/Math-ish-Finding-Creativity-Diversity-Mathematics/dp/0063423723/ref=tmm_pap_swatch_0?encoding=UTF8&dib_tag=se&dib=eyJ2IjoiMSJ9.MtbKuQE2_x8lpXUjqZTLUQ.o0zrTjmYl5bc3SEEC4-GFqiL2mWoUSZELrstKbAZgvI&qid=1723404765&sr=8-1

Additional materials/resources we may be using:

Some required readings will be scanned and placed on blackboard, or you will be provided with appropriate web links:

A. YouCubed, <https://www.youcubed.org/>

B. Math-ish, <https://www.mathish.org/>

C. Texas Essential Knowledge and Skills (TEKS) for all content areas and grade levels.

<https://tea.texas.gov/academics/curriculum-standards/teks/texas-essential-knowledge-and-skills>

D. Common Core Standards

<https://study.com/teach/common-core-math-standards.html>

E. These websites provide a wide selection of virtual manipulatives for teaching mathematics:

<http://nlvm.usu.edu/en/nav/vlibrary.html>

F. Book "How Students Learn: Mathematics in the Classroom".

You can read it online at http://www.nap.edu/catalog.php?record_id=11101

Software Requirements:

A. Course materials supplementing the required text will be uploaded on UTEP Blackboard.

B. Adobe® Reader® is free software that allows everyone from business professionals to home users to view easily and reliably, print, and search PDF files using a variety of platforms and devices.

C. Microsoft Office® - This product is available at the UTEP Bookstore.

D. E-mail tool with file attachment capability. Please use your UTEP e-mail account.

Weekly Assignments:

You will be asked to complete weekly assignments. These assignments will be diverse and may include assigned readings, solving or analyzing mathematical tasks, watching a video, analyzing peer work, or preparing activities. Completing these assignments is a critical part of your coursework.



Guiding Principles for this Course: T-TESS Domains

The T-TESS Rubric includes 4 Domains and 16 Dimensions. T-TESS domain and dimension rubrics include specific descriptors of practices and 5 performance levels; Distinguished, Accomplished, Proficient, Developing, and Improvement Needed.

Table 1. T-TESS Domains

Planning	Instruction	Learning Environment	Professional Practices & Responsibilities
Standards & Alignment	Achieving Expectations	Classroom Environment, Routines & Procedures	Professional Demeanor & Ethics
Data & Assessment	Content Knowledge & Expertise	Managing Student Behavior	Goal Setting
Knowledge of Students	Communication	Classroom Culture	Professional Development
Activities	Differentiation		School Community Involvement
	Monitor & Adjust		

Student Learning Outcomes:

“Talent is a dreadfully cheap commodity, cheaper than table salt. What separates the talented individual from the successful one is a lot of hard work and study.” ~Stephen King.

The course’s learning outcomes will require the student to acquire throughout the semester knowledge and skills and build upon them. The following table provides a list of the most relevant student learning outcomes for the course. The following outcomes are aligned with SBEC-approved Texas educator standards. Please, see the full standard* at

[https://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&g=1&p_tac=&ti=19&pt=2&ch=149&rl=1001](https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&g=1&p_tac=&ti=19&pt=2&ch=149&rl=1001)

Table 2. Student learning outcomes and assessment

	Student Outcome	How Outcome is Addressed
1	Understand how children learn and develop mathematical skills, procedures, and concepts; know the typical students' errors and misconceptions; and uses this knowledge to plan, organize, and implement instruction to meet curriculum goals.	Integrated into all class activities
2	Build your capacity to teach mathematics in ways that leverage students' diverse strengths to explore important mathematical ideas and support all students to engage in authentic mathematical work by unpacking NCTM standards and developing the competencies to teach the TEKS.	Integrated into all class activities



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3	Learn the specific mathematical topics and mathematical processes for teaching through exploring how students learn, engaging in instructional activities, and reflecting on your learning.	Integrated into all class activities
4	Connect mathematical content strands with mathematics to pedagogy, developing our capacity to enact ambitious and equitable teaching practices.	Integrated into all class activities
5	Explore and use technology to appropriately teach and prepare students to use mathematics according to the statewide curriculum (TEKS).	Integrated into all class activities
6	Understand and use numbers (structure, operations, and algorithms), patterns, functions, algebraic thinking, problem-solving strategies, and data analysis to teach the statewide curriculum (TEKS). Understand the relationship between the different symbolic representations.	Integrated into all class activities
7	Understand assessment and use a variety of formal and informal assessment techniques to guide instruction and support student progress.	Integrated into all class activities

POLICIES:

A. Grading Scale:

Excellent	Above Average	Average	Below Average	Failing
A = 90 – 100%	B = 80 – 89%	C = 70 – 79%	D = 60 – 69%	F = 59% and below

B. Submission of Assignments:

Assignments are to be submitted through Blackboard Assignment on the date and time indicated by assignments. **Late assignment submissions will not be accepted.**

Exception: Accommodations/Modifications provided to instructor by Office of Disabled Student Services.

C. Expectations for Participation

- Please allow yourself approximately 8-10 hours a week to complete the readings and the assignments
- Students are expected to learn and know how to navigate in Blackboard; avail yourself of training offered in Blackboard for orientation, etc,
- Students are expected to communicate with one another in small groups via discussion boards
- Students are expected stay informed of course announcements
- Students are expected to keep instructor informed of class related problems, or problems that may prevent the student from full participation (send an email when you encounter problems so that the instructor knows you still have intentions of completing the course).



- Students are expected to address technical problems immediately with Blackboard Support

Students are expected to always observe course netiquette.

Netiquette Ground Rules:

- Use proper grammar and spelling.
- This course encourages different perspectives related to such factors as gender, race, nationality, ethnicity, sexual orientation, religion, and other relevant cultural identities.
- The course seeks to foster understanding and inclusiveness related to such diverse perspectives and ways of communicating.

D. Class Attendance

Though this course is 100% online through Blackboard, if you do not complete your weekly discussions, you will earn an ABSENCE. If you have more than three (3) absences, you may be dropped from the course.

E. Expectations for Assignments/Coursework

I give each of you my commitment to help you succeed in this course. In return, I am asking you prioritize this course and give it the effort it requires. By the end of this course, you will have multiple means of using pedagogy and mindset to drive your classroom.

F. Standards of Academic Integrity:

Students are expected to uphold the highest standards of academic integrity. Any form of scholastic dishonesty is an affront to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are not attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures (HOP) and available in the Office of the Dean of Students, may result in sanctions ranging from disciplinary probation, to failing grades on the work in question, to failing grades in the course, to suspension or dismissal, among others.

E. Students with Disabilities:

If you have or believe you have a disability, you may wish to self-identify. You can do so by providing documentation to the Office of disabled Student Services located in Union E Room 203. Students who have been designated as disabled must reactivate their standing with the Office of Disabled Student Services on a yearly basis. Failure to report to this office will place a student on the inactive list and nullify benefits received. If you have a condition which may affect your ability to exit safely from the premises in an emergency or which may cause an emergency during class, you are encouraged to discuss this in confidence with the instructor and/or the director of Disabled Student Services. You may call 747-5148 for general information about the Americans with Disabilities Act (ADA).

F. Equal Educational Opportunity:



To create equal educational opportunities in the class, all students are expected to demonstrate respect for the diverse voices and individual differences in the class. Particularly, no person shall be excluded from participation in, denied benefits of, or be subject to discrimination under any program or activity sponsored or conducted by the University of Texas at El Paso based on race, color, national origin, religion, sex, age, veteran status, disability, or sexual orientation. Any member of the University community who engages in discrimination or other conduct in violation of university policy is subject to the full range of disciplinary action, up to and including separation from the University. Complaints regarding discrimination should be reported to the University's Equal Opportunity Office. Inquiries regarding applicable policies should be addressed to the University's Equal Opportunity Office, Kelly Hall, 3rd Floor, 915.747.5662 or eoaa@utep.edu<<mailto:eoaa@utep.edu>> .

G. Inclusiveness and equity:

Learning happens only when we feel respected human being. My top priority in our course is to cultivate relationships of trust and respect and a sense that we see each other as whole, complex human beings. That you experience this in our course is important for the sake of your learning in our course and for the sake of your future students' learning, so that you feel able to cultivate such relationships with them. To that end, I want you to know that all of you is welcome in our learning space—all the parts of you as a person are welcome in our discussions, our activities, our assignments, and in our assessments. We are all complex people with a variety of perspectives, experiences, challenges, assets, and resources—our gender identities, our sexual orientations, our religions, our races, our ethnicities, our economic statuses, our immigration statuses, our parenthoods, our veteran statuses, our ages, our languages, our abilities, and disabilities. All the parts of you are welcome in our learning community to the extent that you feel comfortable bringing them in. I strive to show respect for the variety and wholeness in each of you, and I expect that each of you shows respect for each other as well. If you feel marginalized in our class, and you feel comfortable discussing it, I would like to know so that I can support you, protect you, and make changes that feel more inclusive and equitable. You can also talk with our Department Chair and/or you can report a complaint of discrimination to the University's Equal Opportunity Office, Kelly Hall, Third Floor, 915-747-5662 or eoaa@utep.edu .

H. Professionalism:

Consistent commitment to being successful in the course as well as, collegiality, supportive critique, and professionalism will be expected.

Course expectations:

- Attend virtual meetings when you are scheduled to attend meetings (virtual meetings with peers, instructor, etc.)
- Be prepared to raise, share, discuss and attempt to solve any individual or collective problems you may have with your colleagues and/or your instructor in constructive ways that allows us all to maintain our dignity and continue to function effectively as a community.
- Demonstrate an understanding that while we can, and will, disagree, we need to do so within a community of respect; and
- Provide your classmates with supportive critique and constructive feedback.



Tentative Online Course Outline: TED4350- Fall 2024

NOTE: All topics, assignments, and due dates are subject to change at the instructor’s discretion.

Discussions, Response to Peer Group, Strategies Connecting to your Classroom.

- Students will post on discussion board their short reflections about the assigned weekly readings/videos/website review (THREE (3) to FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS) every two weeks. Include at least four direct quotes from course readings/video using “APA formatting, which looks like this” (Author, year, p. xx). (10 points)
- ****Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.
- Respond with 3-4 thoughtful sentences to each of your peers in the group (4 students per group = 4 responses). (10 points)
- Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points)

Week/Day	Learning Agenda/Assignments	Assignment Due Date
Module 1 Weeks 1 & 2	<p><u>Topic:</u> A New Mathematical Relationship</p> <p><u>Readings and Evidence of Understanding:</u></p> <p>(1) View/Listen to Podcast: Introduction to <i>Math-ish</i> https://thechrisvossshow.com/the-chris-voss-show-podcast-math-ish-finding-creativity-diversity-and-meaning-in-mathematics-by-jo-boaler/</p> <p>(2) Read <i>Math-ish</i>, Chapter 1 – “A New Mathematical Relationship”</p> <p>(3) Read “<i>Popular Cultural Portrayals of Those who Do Mathematics</i>” https://efaidnbmnnnibpcajpcgclefindmkaj/https://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1516&context=hmnj</p> <p>(4) Reflection Prompts:</p> <ul style="list-style-type: none"> • Generally, describe mathematics. • What makes the expression $(n + 1)^2$ quadratic? • Analyze examples of music, television segments, movies, commercials, billboards that encourage negative or positive stereotypes of mathematics and/or mathematicians (Global Cultural Problem). • How can education move from a performance culture to mathematics empowerment? <p>Requirements: Discussions, Response to Peer Group, Strategies connecting to your current or future classroom.</p> <ul style="list-style-type: none"> • Students will post on discussion board and assignments their short reflections about the assigned weekly readings/videos/website review (THREE (3) to FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS). Include at least <u>four direct quotes</u> from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (10 points) 	<p>Reflection: 9/10/24</p> <p>Peer Responses: 9/12/24</p>






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	<ul style="list-style-type: none"> Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points) <p><i>****Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.</i></p> <ul style="list-style-type: none"> Respond with 3-4 <u>thoughtful</u> sentences to each of your peers in the group (4 students per group = 4 responses). (10 points) 	
<p>Module 2 Weeks 3 & 4</p>	<p>Topic: Learning to Learn</p> <p>Readings and Evidence of Understanding:</p> <p>(1) Read <i>Math-ish</i>, Chapter 2 – “Learning to Learn”</p> <p>(2) Watch “Moving from Maths Anxiety” https://vimeo.com/872207868</p> <p>(3) Read “Creating Mathematical Futures through an Equitable Teaching Approach: The Case of Railside School” https://efaidnbmnnnibpcajpcglclefindmkaj/https://www.youcubed.org/wp-content/uploads/2017/09/Creating-Mathematical-Futures.pdf</p> <p>(4) Using the Table (2.7 Reflection Ideas) on p. 48 to write this week’s reflection.</p> <p>(5) Try to solve your group members’ problems they developed and provide feedback to your peers on the problem and process of solution</p> <p>Requirements: Discussions, Response to Peer Group, Strategies connecting to your current or future classroom.</p> <ul style="list-style-type: none"> Students will post on discussion board and assignments their short reflections about the assigned weekly readings/videos/website review (THREE (3) TO FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS). Include at least <u>four direct quotes</u> from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (10 points) Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points) <p><i>****Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.</i></p> <ul style="list-style-type: none"> Respond with 3-4 <u>thoughtful</u> sentences to each of your peers in the group (4 students per group = 4 responses). (10 points) 	<p>Reflection: 9/24/24 Peer Responses: 9/26/24</p>
<p>Module 3 Weeks 5 & 6</p>	<p>Topic: Valuing Struggle</p> <p>Readings and Evidence of Understanding:</p> <p>(1) Read <i>Math-ish</i>, Chapter 3 – “Valuing Struggle”</p> <p>(2) Watch “Moving from Maths Anxiety” https://vimeo.com/872207868</p> <p>(3) Read “Creating Mathematical Futures through an Equitable Teaching Approach: The Case of Railside School”</p>	<p>Reflection: 10/8/24 Peer Responses: 10/10/24</p>



	<p>https://efaidnbmnnnibpcajpcglclefindmkaj/https://www.youcubed.org/wp-content/uploads/2017/09/Creating-Mathematical-Futures.pdf</p> <p>(4) Watch “Importance of Struggle” https://www.youcubed.org/resources/the-importance-of-struggle/</p> <p>(5) Reflection Prompts:</p> <ul style="list-style-type: none"> • Discuss mathematical mindset and the value of struggle. • Describe some of your favorite mathematics mistakes or struggles and some of your ‘aha’ moments. • Design a mathematics activity that would help students see the value in mistakes. <p>(6) Evaluate your peers’ mathematical activity and provide feedback.</p> <p>Requirements: Discussions, Response to Peer Group, Strategies connecting to your current or future classroom.</p> <ul style="list-style-type: none"> • Students will post on discussion board and assignments their short reflections about the assigned weekly readings/videos/website review (THREE (3) TO FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS). Include at least <u>four direct quotes</u> from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (10 points) • Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points) <p><i>***Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.</i></p> <ul style="list-style-type: none"> • Respond with 3-4 <u>thoughtful</u> sentences to each of your peers in the group (4 students per group = 4 responses). (10 points) 	
<p>Module 4 Weeks 7 & 8</p>	<p>Topic: Mathematics in the World</p> <p>Readings and Evidence of Understanding:</p> <p>(1) Read <i>Math-ish</i>, Chapter 4 – “Mathematics in the World”</p> <p>(2) Listen to Podcast: “America’s Math Curriculum Doesn’t Add Up” https://freakonomics.com/podcast/americas-math-curriculum-doesnt-add-up-ep-391/</p> <p>(3) View “Visual, Creative, Encouraging”: Students talking about math class https://www.youcubed.org/resources/solving-math-problem/</p> <p>(4) View these three videos: https://vimeo.com/673398725 https://vimeo.com/569394563 https://vimeo.com/510792526</p> <p>(5) Reflection Prompts:</p> <ul style="list-style-type: none"> • Describe a way of thinking about the mathematics we use in the real world that could be a powerful tool for student thinking. Are there cross-curricular (across content subject) connections being made? 	<p>Reflection: 10/22/24 Peer Responses: 10/24/24</p>











	<ul style="list-style-type: none"> • Create and describe a data investigation that you might use in a class you were going to teach. • Describe mathematics curricular issues you feel are impacting learning currently or what are your thoughts on data classes versus calculus? <p>(6) Complete one of your peer’s data investigations. Create a data talk/visual of your data investigation as your response to a peer.</p> <p>Requirements: Discussions, Response to Peer Group, Strategies connecting to your current or future classroom.</p> <ul style="list-style-type: none"> • Students will post on discussion board and assignments their short reflections about the assigned weekly readings/videos/website review (THREE (3) TO FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS). Include at least <u>four direct quotes</u> from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (10 points) • Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points) <p><i>***Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.</i></p> <ul style="list-style-type: none"> • Respond with data talk/visual (10 points) 	
<p>Module 5 Weeks 9 & 10</p>	<p>Topic: Mathematics as a Visual Experience</p> <p>Readings and Evidence of Understanding:</p> <p>(1) Read <i>Math-ish</i>, Chapter 5 – “Mathematics as a Visual Experience”</p> <p>(2) Read “Pennies & Paperclip Proofs” https://www.artofmathematics.org/blogs/jfleron/pennies-paperclip-proofs</p> <p>(3) View https://www.youcubed.org/resources/pennies-and-paperclips/</p> <p>(4) Complete the following activity:</p> <div data-bbox="321 1339 1279 1885" data-label="Complex-Block"> <p>Discovering the Art of Mathematics</p> <p>Player 1: Place two pennies each on a different square</p>  <p>Materials: 2 pennies & a pile of paperclips</p> <p>Player 2: Place paperclips on any two adjacent squares with the goal of covering all remaining squares. You can use any number of paper clips.</p> <p>Like this:</p>  <p>Note: once a penny or a paperclip is on a square, you cannot place another paperclip on that square</p> <p>Not like this:</p>  <p>Player 2 wins if they can cover all of the remaining squares, otherwise Player 1 wins</p> <p>Come up with Conjectures</p> </div> <p>Include your impressions of the activity in your reflection.</p>	<p>Reflection: 11/5/24 Peer Responses: 11/7/24</p>



	<p>(5) Read “Exploring Gamification Approaches for Enhancing Computational Thinking in Young Learners” https://www.mdpi.com/2227-7102/13/5/487</p> <p>(6) Reflection Prompts:</p> <ul style="list-style-type: none"> • Discuss the ‘Big Ideas’ in the chapter. • What is your understanding of ‘Gamification’ for mathematics instruction? • If you had one question for the author, what would that question be? <p>Requirements: Discussions, Response to Peer Group, Strategies connecting to your current or future classroom.</p> <ul style="list-style-type: none"> • Students will post on discussion board and assignments their short reflections about the assigned weekly readings/videos/website review (THREE (3) TO FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS). Include at least <u>four direct quotes</u> from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (10 points) • Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points) <p><i>***Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.</i></p> <ul style="list-style-type: none"> • Respond with how you think the author would respond to the questions posed by your peers (10 points) 	
<p>Module 6 Weeks 11 & 12</p>	<p>Topic: The Beauty of Mathematical Concepts and Connections</p> <p>Readings and Evidence of Understanding:</p> <p>(1) Read <i>Math-ish</i>, Chapter 6 – “The Beauty of Mathematical Concepts and Connections” and Chapter 7 – “ Diversity in Practice and Feedback”</p> <p>(2) View “Memorization vs. Genuine Mathematical Experiences” https://vimeo.com/456959843</p> <p>(3) Read “Indigenous Mathematical Art” https://www.youcubed.org/resource/indigenous-maths-art/</p> <p>(4) View “Teaching kids real math with computers” https://www.ted.com/talks/conrad_wolfram_teaching_kids_real_math_with_computers?subtitle=en</p> <p>(5) Reflection Prompts:</p> <ul style="list-style-type: none"> • Make a sketchnote of mathematical ideas you are working with in your life (reference p.191). • Research an artistic endeavor and describe the mathematics involved in the endeavor. • <p>Requirements: Discussions, Response to Peer Group, Strategies connecting to your current or future classroom.</p> <ul style="list-style-type: none"> • Students will post on discussion board and assignments their short reflections about the assigned weekly readings/videos/website review 	<p>Reflection: 11/19/24 Peer Responses: 11/21/24</p>



	<p>(THREE (3) TO FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS). Include at least <u>four direct quotes</u> from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (10 points)</p> <ul style="list-style-type: none"> Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points) <p>***Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.</p> <ul style="list-style-type: none"> Respond with feedback on sketchnotes and artistic endeavor analyses (10 points) 	
<p>Module 7 Weeks 13 & 14</p>	<p>Topic: Implementing Lessons</p> <p>Readings and Evidence of Understanding: (1) Review/Read Exploring Calculus https://www.youcubed.org/exploring-calculus/</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>The Volume of a Lemon</p>  </div> <div style="text-align: center;">  <p>Galileo's Investigation</p> </div> <div style="text-align: center;">  <p>Bicycle Path</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  <p>Investigating a Snowflake</p> </div> <div style="text-align: center;">  <p>Walking the Graph</p>  </div> <div style="text-align: center;">  <p>Curved Shapes</p> </div> </div> <p>(2) Calculus Lesson Activity Requirements (50 points):</p> <ul style="list-style-type: none"> Review each of the six lessons indicated above. Select one lesson to teach. Prepare to teach the lesson¹. Teach the lesson and videotape yourself teaching². Post on Blackboard Discussion Board Reflect on your teaching in the video in the discussion board Provide constructive feedback to one of your peers' videos (10 points). <p>¹Integrate the Big Ideas from your readings and videos watched. ²Teaching is not describing what you would do – teach as if you have a class in front of you (you will have a “class” of peers reviewing!).</p>	<p>Reflection: 12/3/24 Peer Responses: 12/5/24</p>



<p>Module 8 Weeks 15 & 16</p>	<p>Topics: Highlighting Course Connections to Education and Teaching</p> <p>Evidence of Understanding: (1) Final Reflection</p> <p>Final Reflection Requirements: Compose (using APA formatting) your final reflection focusing on:</p> <ul style="list-style-type: none"> • the ‘Big Ideas’ from the course, • what you learned about the big ideas (including citations as supporting evidence), • what takeaways, in what situations you plan to use those concepts/ideas and how you will implement those concepts/ideas, • what new ideas or thoughts you now have about teaching mathematics, and • What questions you still have. <p>Format as a scholarly paper with a Running Head, Title Page, Introductory Paragraph, Body (at least FIVE THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS), and Conclusion Paragraph. Include at least <u>seven direct quotes</u> from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (200 points)</p> <p>****Post your reflection by 11/27/24 at 11:59pm on Blackboard Assignments</p>	<p>12/10/24</p>
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Final Word: “Mathematics is not about numbers, but about life. It is about the world in which we live. It is about ideas. And far from being dull and sterile as it is so often portrayed, it is full of creativity” (Devlin, 2001)

Rubrics:

Academic work must be written with appropriate citations utilizing **APA Style (7th edition)**.

Inattention to APA will immediately result in returned work and a request for rewrite. Continued inattention to APA will result in a failing grade for each assignment it pertains to. +Students may not submit a similar paper for this class and another class. If you are planning on working on the same topic for this course and another course, you must obtain permission from both course instructors and submit a copy of both papers to your instructor upon completion. Failure to do this will result in a failing grade for the course.

Weekly Assignments:

Discussions, Response to Peer Group, Strategies Connecting to your Classroom.

- Students will post on discussion board their short reflections about the assigned weekly readings/videos/website review (THREE (3) to FIVE (5) THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS) every two weeks. Include at least four direct quotes from course readings/video using “APA formatting, which looks like this” (Author, year, p. xx). (10 points)
- ****Post your reflection by Tuesday at 11:59 pm so your peers can respond before Thursday.



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- Respond with 3-4 thoughtful sentences to each of your peers in the group (4 students per group = 4 responses). (10 points)
- Your reflection must mention 1-2 tangible classroom strategies that the readings/video evoked which could be useful in your classroom/mathematics. (5 points)

Final Reflection Requirements: Compose (using APA formatting) your final reflection focusing on:

- the ‘Big Ideas’ from the course,
- what you learned about the big ideas (including citations as supporting evidence),
- what takeaways, in what situations you plan to use those concepts/ideas and how you will implement those concepts/ideas,
- what new ideas or thoughts you now have about teaching mathematics, and
- What questions you still have.

Format as a scholarly paper with a Running Head, Title Page, Introductory Paragraph, Body (at least FIVE THOUGHTFUL AND WELL-DEVELOPED PARAGRAPHS), and Conclusion Paragraph. Include at least seven direct quotes from course readings/videos using “APA formatting, which looks like this” (Author, year, p. xx). (100 points)

Body:			
	‘Big Ideas’ from the course	20	
	what you learned about the big ideas	20	
	takeaways	20	
	situations	Incl	
	how	Incl	
	new ideas or thoughts	20	
	questions you still have.	20	
	Development of thought	40	
Mechanics:			
	APA formatting	6	
	Formatting Sections	6	
	Length	30	
	Grammar and Punctuation	6	
	citations as supporting evidence	6	
Total Points			200

Note: I reserve the right to adjust the course syllabus or change assignments as needed.