



ELED 530 – Mathematics Curriculum Grades 1-8 COURSE SYLLABUS: Summer 2 2022

Instructor: Dr. Amy Corp, (EdD Curriculum & Instruction- Math Ed cognate)

Office Location: Virtual Office **Office Hours:** By Appointment

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COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings:

TWO Required Texts/Materials:

- **MAKING SENSE OF MATH. FOR TEACHING K2**
 - Author | ● DIXON
 - Edition | ● 2016
 - ISBN | ● 9781942496397

OR

- **MAKING SENSE OF MATH. FOR TEACHING 35**
 - Author | ● DIXON
 - Edition | ● 2016
 - ISBN | ● 9781942496427

- **AND**

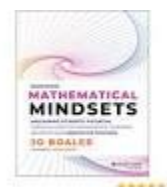
- **2. Boaler, Jo Mathematical Mindsets: Unleashing Students' Potential through Creative Mathematics, Inspiring Messages and Innovative Teaching (Mindset Mathematics) 2nd Edition**

ISBN-13: 978-1119823063

- ISBN-10: 1119823064

- Texas Essential Knowledge and Skills (TEKS) – Mathematics K-8 available on the course website and TEA- there is an APP
- Handouts/Articles on the course website

1. Choose which one fits your teaching. Email if you are teaching above 5th. Also email if you have already read **Mathematical Mindsets.**



Recommended Texts (You do NOT have to purchase these books but they are a wonderful resource for you to have for your classroom):

- Wheatley, G.H., & Reynolds, A. (2010). Coming to Know Number: A Mathematics Resource for Elementary Teachers. Mathematics Learning.
- Wheatley, G.H. & Abshire, G. (2007). Developing Mathematical Fluency: Activities for Grades 5 through 8.
- Wheatley, G.H. (2007) Developing Spatial Sense in Mathematics. Second Edition.
- NCTM. (2013). Putting Essential Understanding of Fractions into Practice, NCTM (ISBN: 978-0-87353-732-2)

- NCTM. (2010). *Developing Essential Understanding of Rational Numbers: Grades 3-5*. NCTM, Reston, VA. (ISBN: 978-0-87353-630-1)
- Clements, D. H., & Sarama, J. (2009). *Learning and Teaching Early Math: The Learning Trajectories Approach*. Routledge. (ISBN: 978-0-415-99592-4)
- Chapin, O'Connor, & Canavan-Anderson. (2013). *Classroom Discussions in Math: Grades K-6, Math Solutions*. (ISBN: 978-1-935099-56-7).

Course Description:

ELED 530 identifies novel research-based recommendations toward a modernization of both content and methods of elementary mathematics teaching and learning, and relates these innovations to good teaching practices already in use. The course includes the language of number sets, number systems, the means for improving student performance through problem solving, and development of growth mindsets.

Student Learning Outcomes:

Through online demonstrations, video clips, and presentations as well as out of class readings and written work, ELED 530 students will have the opportunity to:

- Examine their beliefs about the goals and content of elementary and middle school mathematics in relation to current reform documents.
- Understand what growth mindset is and to explore what it takes to foster this in your teaching in mathematics.
- Develop their ability to create an environment for the learning and teaching of mathematics that promotes problem solving with understanding and sense making.
- Learn about the content and methods in mathematics education to assist them in designing mathematical tasks and activities.
- Explore the connections that exist within mathematics topics and with other content areas.
- Develop their ability to assess diverse groups of students in particular mathematics topic areas at various grade levels.

COURSE REQUIREMENTS

Instructional / Methods / Activities Assessments

Assignment schedule, details, and due dates will be posted in the course website. It is your responsibility to make sure that all assignments are submitted correctly and on time, according to the assignment instructions. Any assignment not submitted correctly or on time will be considered late. Late assignments will receive a penalty of 10% per day late.

1. **Online Discussions** - (15pts for each)
Video discussion by groups for chapters in Boaler text (each student will be prepared to answer a question & respond intelligently to every question) These should be about 5-10minutes.
2. **Weekly Chapter work from Dixon text & short Reflection** – (25pts for each: 18 for work, 7 for reflection)
Since we do not meet face to face to discuss our reflections of learning...after class each week, you will be required to reflect upon what you learned from the weekly readings, assignments, class discussions, and activities. (options available)
3. **Research: Determine a math routine or teaching strategy for equity** (60pts)
Current research: (25 points)

What does it mean to provide equity and access in your teaching? Each student will select an article, from a given list in D2L and create a summary of the research investigated (with a limit of 1 single-spaced page/article).

Each summary should include the following:

- a. APA citation
- b. Research Question(s) or Purpose
- c. Methodology/Data Sources
- d. Findings/Arguments Presented
- e. How you will implement this into your teaching and why

Learn about and prepare a routine for equity/access: (35 points)

Learn about several math routines, chose an option that will suite your students and create a plan for implementing (template included)

4. High Cognitive Demand Task Design and Presentation (50pts)

High Cognitive Demand Tasks: (20)

Choose a concept that you plan to teach to your students. Develop a high cognitive demand task that will engage your students in mathematical thinking about this concept. Provide a 3-4 sentence rationale justifying why the task qualifies as high cognitive demand. Be sure to reference theory in your justification.

Assessment Development: (15)

Develop both a formative and summative assessment that you would use to assess student learning on the tasks you created. Be sure to include any tools you would use to assess student learning.

Implementation and Teacher Case: (15)

With your class, implement your high cognitive demand tasks. You should reflect about the experience and then write a case story that paints a picture of the episodes and your thoughts and comments about students thinking and growth mindset and your implementation of the task. (Directions are on the tab.) ***Summer** classes can implement with anyone willing to do the task, hopefully a child.

5. Final Exam (60pts)

This exam will include content knowledge, pedagogical content knowledge and pedagogical knowledge over the entire semester. The content comes from key points the Bolar text.

Grading: (Total score/total points possible)

- | | | |
|---|-----------------|---------------|
| A | = 90% - 100% | |
| B | = 80% - 89% | |
| C | = 70% - 79% | |
| D | = 60% - 69% | |
| F | = 59% and below | (NO rounding) |

Student Expectations and Plagiarism

Student work will be expected to show evidence of creativity and the use of critical thinking skills. Merely restating someone else's work is not adequate for graduate level assignments. If an original work is directly or indirectly quoted, it must be so noted.

Academic Honesty Policy

Texas A&M University-Commerce does not tolerate **plagiarism** and other forms of academic **dishonesty**. Conduct that violates generally accepted standards of academic honesty is defined as academic dishonesty. "Academic dishonesty" includes, but is not limited to, plagiarism (the appropriation or stealing of the ideas or words of another and passing them off as one's own), cheating on exams or other course assignments, collusion (the unauthorized collaboration with others in preparing course assignments), and abuse (destruction, defacing, or removal) of resource material.

We suggest these web resources to students for reference regarding what constitutes plagiarism and how to avoid it: <http://www.plagiarism.org/> or <http://www.unc.edu/depts/wcweb/handouts/plagiarism.html> or <http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>

Disciplinary action for these offenses may include any combination of the following:

1. Point deduction on an assignment.
2. Failure for an assignment.
3. A grade of zero for an assignment.
4. Failure for the course.
5. Referral to the Academic Integrity Committee or department head for further action.
6. Referral to the Dean of the College of Education and Human Services as appropriate.
7. Referral to the University Discipline Committee.
8. Communication of student's behavior to the Teacher Certification Office and/or Dean of the College of Education as constituting a reason to bar student from entering into or continuing in a teacher certification program. Procedures, A 13.04, 13.12, 13.31, and 13.32

Remember that you are responsible for your learning. If you do not understand directions get clarification.

Written Assignments:

- All written assignments are to be typed and are expected to exhibit professional quality. In all assignments, you should use 12 point size, Arial or Times Roman font, one-inch margins on all four sides of the page, and text should be double spaced.
- You should demonstrate mastery of organizing, structuring, and editing (for all aspects of mechanics) in your writing. Student work is expected to be well-written, logical, and easy to read and follow.
- Excessive errors in grammar, spelling, and vocabulary will result in the reduction of your score by at most a letter grade.
- **Late work will only be graded within one week of when it was due (10% off for each day, after one week, no credit.)**

Internet Etiquette (Netiquette)

All participants are expected to maintain a level of professionalism in all aspects of course communication. In order for all participants to feel invited to participate in this course, please abide by commonly accepted online behavior standards, known as "netiquette." See "Netiquette" in the course website.

TECHNOLOGY REQUIREMENTS

- Hardware--- Both Macintosh and Windows systems are acceptable
- Software ---Word Processor and Calculations Spreadsheet

- Connectivity---Reliable internet access through an established internet service provider is required for online learning activities. Students should choose a DSL or cable-modem service where high speed internet is available.
- Email---Access to a reliable email service through an established internet service provider is critical for assignment submission and communication with instructor.
- Web Browser---Internet Explorer (version 8.0 or greater), Netscape (version 9.0 or greater), Firefox, or Safari is required. These browsers are available for free

ACCESS AND NAVIGATION

This course will utilize the e-college online classroom. You will be required to complete assignments, discussions, etc... through the e-college system.

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement:

I am here to help you do well in this course. However, you are an adult learner and it will be your responsibility to ask for help if needed. You may contact me through virtual office, email, or text if needed. **For the most part I work Mon-Thursday on this course.**

In order to receive a prompt response to your e-mail correspondence with your professor, please put "ELED 530" in the subject line. For example: your subject line could read: **ELED 530:** Question about the discussion assignment. I will respond to your e-mails within 48 hours unless on Saturday.

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

COURSE AND UNIVERSITY PROCEDURES/POLICIES

University Specific Procedures: *ADA Statement*

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamuc-commerce.edu

[Student Disability Resources & Services](#)

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook*).

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A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

University Campus Concealed Carry Policy @ Commerce Campus
Campus Gun Law (effective Fall, 2016)

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to (<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses: Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

	<u>Everyone: Mindsets book</u>	<u>K-2 Making Sense of math</u>	<u>3-5 Making Sense of Math</u>
	Intro: The Power of Mindset	(suggested pace) intro	(suggested pace)
	Ch 1: The Brain and Learning Mathematics Ch 2: The Power of Mistakes and Struggle		
	Ch 3: Creativity and Beauty in Mathematics	Ch. 1	
	Ch 4: Creating Mathematical Mindsets – the importance of flexibility with numbers		
	Chapter 5: Mathematical Tasks https://www.youcubed.org/tasks/ High Cognitive Demand Tasks High Cognitive Demand Tasks: Due:	Ch.2	
	Chapter 6: Mathematics and the Path to Equity	Ch. 3	
	Chapter 7: From Tracking to a Growth Mindset Grouping	Ch4	
	Ch: 8 Assessment for a Growth Mindset Assessment Development: Due:	Ch5	
	Ch: 9 Teaching for a Mathematical Growth Mindset Implementation and Teacher Case: Due:	Ch6	

	<i>Research Literature Investigation and Structured Abstract Due:</i>		

*schedule may change * Follow schedule in D2L for weekly assignments and topics. Homework will be given in ecollege (often differentiated by teaching level).