

Advanced Math Methods (Middle Grades)

TED 4350: CRN (27268)

SPRING 2023

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Office Hours: Tuesday, 6-8:10 pm, by email on BlackBoard, or by appointment (ONLINE)

COURSE DESCRIPTION

This course covers the mathematical content and corresponding methods and resources for teaching mathematics in middle school classrooms. Emphasis is placed on the development of conceptual understanding on topics such as real numbers and operations, geometry, algebra and functions, statistics and probability.

COURSE GOALS AND OBJECTIVES

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) for 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 learning benefits 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.

STUDENT LEARNING OUTCOMES

At the end of this course, students will be able to:

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	All activities in class.
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	implement instruction to meet curriculum goals.	
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.	All activities in class.
3	Learn the specific mathematical content and mathematical processes for teaching through exploring how students learn, engaging in instructional activities and reflecting on your own learning.	All activities in class.
4	Connect mathematical content with mathematics pedagogy, develop our capacity to enact ambitious and equitable teaching practices.	All activities in class.
5	Explore and use technology to appropriate teach and prepare students to use mathematics according to the statewide curriculum (TEKS).	All activities in class.
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.	All activities in class.
7	Understand assessment and the use of variety of formal and informal assessment techniques to guide instruction and support student progress.	All activities in class.

REQUIRED MATERIALS

You will need regular access to a computer, stable and consistent internet, Blackboard, and your UTEP email account.

NO Text Required

Selective Chapters and readings will be provided by the instructor as part of every week readings

Required Readings and Resources:

English Language Proficiency (ELPS) Standards:

<http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html#74.4>

Principles and Standards for School Mathematics Executive Summary

https://www.nctm.org/uploadedFiles/Standards_and_Positions/PSSM_ExecutiveSummary.pdf

Constructivism: <https://www.funderstanding.com/theory/constructivism/>

Lev Vygotsky and Social Cognition <https://www.funderstanding.com/category/theory/vygotsky-social-cognition/>

Student Assessment <https://tea.texas.gov/student-assessment>

STAAR Mathematics Resources <https://tea.texas.gov/student-assessment/testing/staar/staar-mathematics-resources>

STAAR Interim assessments <https://tea.texas.gov/student-assessment/testing/staar/staar-interim-assessments>

Texas Education Agency (TEA): <http://www.tea.state.tx.us/index.aspx>

Texas Examinations of Educator (TExES) Standards: <http://www.texas.ets.org/texas/>

Texas Essential Knowledge and Skills (TEKS) <http://www.tea.state.tx.us/index2.aspx?id=6148>

Texas Essential Knowledge and Skills (TEKS_Mathematics)
<http://www.tea.state.tx.us/teks/#grade>

TExES Preparation Manual_Mathematics 4-8 (115):
<https://www.tx.nesinc.com/Content/Docs/115PrepManual.pdf>

Texas English Language Proficiency (TELPAS) Standards:
<http://www.tea.state.tx.us/student.assessment/ell/telpas/>

T-TESS Teacher https://www.teachfortexas.org/Resource_Files/Guides/T-TESS_Teacher_Handbook.pdf

▣ National Council for Teachers of Mathematics (NCTM) publications (most journals are available for free via UTEP electronic Library Databases.

▣ Texas State University System Mathematics for English Language Learners Project

<http://www.tsusmell.org/>

▣ These websites provides a wide selection of virtual manipulatives interactive games for teaching mathematics:

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

<http://www.shodor.org/interactivate/activities/>

<http://www.fi.uu.nl/rekenweb/en/>

<http://www.internet4classrooms.com/index.htm>

▣ Book "How Students Learn". You can read it online at (free download)

<https://nap.nationalacademies.org/catalog/11101/how-students-learn-mathematics-in-the-classroom>

<https://nap.nationalacademies.org/catalog/10126/how-students-learn-history-mathematics-and-science-in-the-classroom>

Book "Adding It Up: Helping Children Learn Mathematics".

You can read it online (free download)

<https://nap.nationalacademies.org/catalog/10434/helping-children-learn-mathematics>

COURSE ASSIGNMENTS AND GRADING

The schedule of assignments and classroom discussions may also change over the course of the semester. All the assignments will be sent to you via BlackBoard email. Each assignment will be connected to previous assignment. If you submitted late assignment (no later than one week after the deadline), you will receive at most 50% of the maximum points for this assignment. The next assignment will be sent to you only after you submitted previous assignment.

More information about each one is available on Blackboard, it will be send to you via BB email.

Letter Grade	A	B	C	D	F
Point total	100-90	89-80	79-70	69-60	59-0

1. Blackboard discussions/BlackBoard email submissions (30 % of the grade)

For this online course, students will be required to participate in discussion boards. For discussion board participation, I encourage you to write 100-150 words in your post in response to the provided guiding questions. You should also reply (at least 25 words for each response) to the entries of at least one of your peers for each assigned discussion (unless noted otherwise). Refer to the discussion board and course content to further details on each assignment.

The deadline for postings is 11:59 pm MST every Sunday. Replies to your peers are due by 11:59 pm MST every Saturday.

2. Written Reflection Papers/Written Lesson Plans (30 % of the grade)

Students will be asked to synthesize what you are reading and integrate it with the classroom activities in relation to the guiding topic connected to secondary teaching and learning. Weekly reflections specifications: APA format, 12-point font, New Times Roman, Double Spaced, (specific number of words), save as .docx.

The deadline for postings is 11:59 pm MST every Sunday.

3. Math Detailed Solutions (30 % of the grade)

Students will be required to take work on activities to address specific math concepts.

The deadline for postings is 11:59 pm MST Sunday (on the assigned week).

4. Final Reflection/ self-evaluation (10 % of the grade)

You will reflect and consider the extent to which you:

- Solve mathematical problems
- actively engaged and participated in class activities
- made connections between readings, NCTM and TEKS standards.
- challenged yourself to go beyond what felt comfortable or familiar
- grew in your capacity to support all students to engage in authentic learning experience
- grew in your capacity to cultivate every student's identity as a valued intellectual contributor to a learning community
- contributed to your peers' learning as a member of our class learning community
- advocate for your own learning
- fulfilled your obligations as a responsible professional
- understand TEKS standards as the core of your teaching practices
- learned about yourself, as a learner and a teacher

Final reflections specifications: APA format, 12-point font, New Times Roman, Double Spaced, 2-4 pages, save as .docx.

The deadline for postings of Final reflections is 11:59 pm MST, the date will be sent to you via BlackBoard email.

ATTENDANCE POLICY

This is an online course; virtual attendance is required. Attendance is determined by class participation online. Participation is determined by accessing Course content, reading/viewing all course materials to ensure understanding of assignment requirements, participating in

engaging discussion with your peers on the Discussion Boards, completing all Activities and all Major Assignments.

Students who do not participate during two weeks can be dropped from the course.

LATE WORK POLICY

A maximum of one late assignment will be accepted, with a penalty of 50 % of your awarded score. A second late assignment will not be accepted.

TECHNOLOGY REQUIREMENTS

Blackboard information

An online collaborative environment, Blackboard (available from "My UTEP.EDU" at <https://my.utep.edu>) is used to provide course interactions, and each participant must be able to use their UTEP Blackboard account. You MUST have both a UTEP email address and password to take this course -- this is because the online course environment, Blackboard utilizes your UTEP email username and password. Because the course is taught in a fully online manner, you cannot effectively participate without access to the online course environment.

The instructor will not accept projects or course materials that are not submitted through the UTEP Blackboard assignment submission system (*why not? because other email systems cannot be adequately associated with a particular student, and because they have no way to document "down" times that may affect coursework. We can look up what is happening with UTEP's system, but we have no way to adjust for the vagaries of other email systems). You may ACCESS your course environment and email from any internet provider, but you must PARTICIPATE from within the UTEP course environments: UTEP email (webmail) and UTEP Blackboard. The <https://my.utep.edu/My> link gives you access to ALL UTEP online functions: Blackboard, Goldmine, and Webmail, among others. If you have trouble, the UTEP Information Systems help desk number is 915-747-4357 - (747-HELP), and online at <https://www.utep.edu/technologysupport/>.

Alternative means of submitting work in case of technical issues

If Blackboard is down and you cannot get into our course site to post work by the required due date, you should email helpdesk@utep.edu, receive case number assigned to you and email this case number to me via regular UTEP email.

ALL coursework should be posted in our BB online course site (it would be specified in your assignment if you need to upload on BB Discussion Board or via BB email). If you find that you are unable to log into Blackboard to access our course site at the time that you are trying to post your work by the due date, you must email me) IMMEDIATELY WITH AN ATTACHMENT OF YOUR WORK. When you do this, I will know that you have completed the work in a timely manner and it will be accepted, even though it was not posted in our course site as is generally required. I will then check with the Technology staff at UTEP to determine when Blackboard was out. If you email me indicating that you did not post your coursework because Blackboard is down, but you do not send me your work as an attachment in the message, you will not receive credit for your work.

Microsoft Office Free for UTEP Students

All UTEP students are eligible to use Microsoft Office 365 which is free and available at https://www.utep.edu/technologysupport/ServiceCatalog/SOFTWARE_PAGES/soft_microsoftoffice365.html.

File Names for submitted work

File names for documents submitted by students should follow these guidelines: (1) No spaces in the names, (2) appropriate file extensions such as docx or pptx for the file type, (3) "Lastnamefirstname_exercisename.xxx". Failure to follow these requirements impedes the ability to download and exchange documents among course participants and will result in a reduced grade, or even no grade. For example, having a space in a file name will often lead to a file that is incompletely uploaded or downloaded, or that is turned in as an unidentifiable file. That is a complication of web servers, not a course issue. Replacing all spaces with an underscore (_) or a dash (-) avoids this problem.

Plagiarism Checking Software

We shall be using an originality checking service to evaluate the level of originality in papers written in this course. Students are required to abide by the UTEP Plagiarism and copyright policies as stated in the Academic Policies section below.

Academic Policies

SCHOLASTIC INTEGRITY. Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action.

Student work will be checked for plagiarism via a software tool, and the re-use of extensive passages of text, whether cited or not, constitutes plagiarism. Work turned in will be checked for originality, and all work must pass an evaluation of writing originality.

UTEP Resources for Students

Below are a few of the UTEP's resources to aid students' success.	
Student Success Help Desk https://www.utep.edu/advising/student_resources/student-success-helpdesk.html	UTEP Academic Advising Center https://www.utep.edu/advising/
Tutoring Services https://www.utep.edu/tutoring/	Office of Student Financial Aid https://www.utep.edu/student-affairs/financialaid/contact-us/index.html
More Student Resources https://www.utep.edu/student-affairs/resources/	Military Student Success Center

Below are a few of the UTEP's resources to aid students' success.	
	https://www.utep.edu/student-affairs/mssc/
Office of International Programs https://www.utep.edu/student-affairs/oipsa/office-of-international-programs/visas/f-type-visa/index.html	Miner Athlete Academic Center https://utepminers.com/sports/2017/6/7/school-bio-academic-center.html
University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources. https://www.utep.edu/uwc/	RefWorks: A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide. https://refworks.proquest.com/
Counseling and Psychological Services https://www.utep.edu/student-affairs/counsel/resources/	

Accommodations Policy

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services \(CASS\)](#). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at cass@utep.edu, or apply for accommodations online via the CASS portal at <https://www.utep.edu/student-affairs/cass/>.

Useful Resource Links

- UTEP MS Office and other free software for UTEP students: https://www.utep.edu/technologysupport/ServiceCatalog/SOFT_AllSoftware.html
- UTEP MS Office free for students link: https://www.utep.edu/technologysupport/ServiceCatalog/SOFTWARE_PAGES/soft_microsoftoffice365.html
- APA 7 Formatting Style Guide at the OWL at Purdue: https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html
- The Texas Educational Agency Curriculum and Instructional Materials: <https://tea.texas.gov/academics/curriculum-standards>
- United States Copyright Law website: <https://www.copyright.gov/title17/>

COVID-19 PRECAUTIONS

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are

encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.

As with any health problems, if you are reporting message about your health problems to receive accommodations in this class, you are required to submit doctor's notice explaining dates of an illness, and expected date of recovery (via BlackBoard email sent to Dr. Kosheleva).

NETIQUETTE

In an online classroom, our primary means of communication is written. The written language has many advantages: more opportunity for reasoned thought, more ability to go in-depth, and more time to think through an issue before posting a comment. However, written communication also has certain disadvantages, such a lack of the face-to-face signaling that occurs through body language, intonation, pausing, facial expressions, and gestures. As a result, please be aware of the possibility of miscommunication and compose your comments in a positive, supportive, and constructive manner and consider the following:

- Remember that your posts are public. All class participants will be reading any postings.
- Respect and courtesy must always be provided to classmates and to instructor. Make a point to be kind and respectful in your comments—even if you disagree with someone. No harassment or inappropriate postings will be tolerated.
- When reacting to someone else's message, address the ideas, not the person and stay on-topic. Post only what anyone would comfortably state in a F2F situation.
- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).
- Submit files the right way. If you do not follow instructions, you're taking the risk that your instructor won't be able to find or open your assignment. Save yourself

and your instructor a headache and read their instructions carefully before submitting.

Course Schedule is provided on BlackBoard (See Discussions Folder)

This syllabus is subject to change.

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