



UNIVERSITY OF TEXAS
EL PASO

College of Education- Department of Teacher Education

Title of Course: TED 5319 CRN 18775	Class hours: 3
Semester: Spring 2018	Instructor Information: Name: Olga Kosheleva, Ph.D. Email: olgak@utep.edu Office hours: ONLINE
Day/Time: Fully Online	
Credits: 3	

Course Description: This course focuses on STEM Education (Science, Technology, Engineering and Mathematics), specifically on the Foundations of STEM Education.

Course Format Information: This course will be conducted *fully online* [there are no in-person/campus-based class meetings]. It runs on a Monday to Sunday schedule; course work throughout the week are due at specific days/times, however, you are NOT required to be online at any specific time. The standard recommendation across the board by American universities is to plan for approximately three hours of study time per week for every one credit hour taken. Therefore, for this course, you can expect each week to spend 3 hours of class time + 9 hours of study and prep time, which equals approximately 12 hours per week devoted to this course. Please read the syllabus and information in the course site VERY carefully, understand what you need to do and when you need to do it, and then plan course study time in your week accordingly. If at any time you do not understand what to do or when to do it, you should contact Dr. Kosheleva immediately via BlackBoard email.

For Technical Assistance: For technical problems with our online course site or related computer/Internet applications, please contact the UTEP Helpdesk: M - F: 7AM - 8PM, Sat: 9AM - 1PM, Sundays 11-4 pm. On campus phone: 915.747.5257. Off campus: 915.747.4357. If you are on campus, you may also visit the ATLAS lab located within the Undergraduate Learning Center (UGLC building) or the Technology Support Center in Room 300, Library.

Required Reading:

This course does *not* require the purchase of a textbook. All the required readings and video/audio files for the course are provided in Blackboard via our course site, either as an attached PDF which can be downloaded or through a clickable Internet link. You are allowed access to *one* copy of any PDFs within the courses site -- per copyright law, they are not intended for further mass distribution. Readings/video/audio files that are assigned by linking to the Internet are also subject to copyright laws but these links may be shared as they are open to the public.

Our online course site is copyrighted and is the property of UTEP and TED faculty. Content from the course site, in part or whole, may *not* be shared or distributed without direct written permission. For questions or issues related to this, please contact Dr. Kosheleva via BlackBoard email.

Additional Recommended Resources:

(These are NOT required but you may want to use them to further your knowledge and support the completion of your coursework).

Suggested Texts:

Bang-Johnson, V. & Lubkowitz, M. (2017). *Sharing books, talking science*. Portsmouth, NH: Heinemann.

Carpenter, T.P, et al. (2016). *Young children's mathematics: Cognitively guided instruction in early childhood*. Portsmouth, NH: Heinemann.

Clements, D.H. & Sarama, J. (2009). *Learning and teaching early math: The learning trajectories approach*. Ny, NY: Ruutledge.

Erikson Institute (2013). *Big ideas of early mathematics: what teachers of young children need to know*. Washington, D.C.: NAEYC.

Gopnik, A., Meltzoff, A.N. and Kuhl, P.K. (2000). *Scientist in the crib: What early learning tells us about the mind*. NY, NY: William Morrow and Company, Inc.

Heroman, C. (2017). *Making and tinkering with STEM*. Washington, DC: NAEYC.

Suggested Online Texts (available for free download):

How students learn: History, mathematics & science in the classroom (2005). Available from:

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

Mathematics learning in early childhood: Pathways towards equity and excellence (2009).

Available from: <https://www.nap.edu/catalog/12519/mathematics-learning-in-early-childhood-paths-toward-excellence-and-equity>

Successful K-12 STEM education (2011). Available from:

<https://www.nap.edu/catalog/13158/successful-k-12-stem-education-identifying-effective-approaches-in-science>

STEM Integration in K-12 Education (2014). Available from:

<https://www.nap.edu/catalog/18612/stem-integration-in-k-12-education-status-prospects-and-an>

Booklets "Science with Children" available (in both English and Spanish) at the Department of Education.

<http://www.ed.gov/pubs/parents/Science/index.html>

<http://www.ed.gov/pubs/parents/Ciencia/index.html>

Suggested Websites

NAEYC Developmentally Appropriate Practice [DAP]. Available at:

<https://www.naeyc.org/resources/topics/dap>

Next Generation Science Standards [NGSS]. Available at:

<https://www.nextgenscience.org>

National Science Teachers Association (NSTA)

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

Common Sense Media Non-profit. (for Technology) Available at:

<https://www.commonsensemedia.org/about-us/our-mission>

American Society for Engineering Education [ASEE]. Available at:

<https://www.asee.org/>

National Council of Teachers of Mathematics [NCTM]. Available at:

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

Texas Early Learning Guidelines (2015). Available at: <https://tea.texas.gov/pkg.aspx>

Texas Essential Knowledge and Skills [TEKS]. Available by grade level and content focus at: <https://tea.texas.gov/curriculum/teks/>

UTEP Learning Resources:

(UTEP provides a variety of student services and support, including the resources below.)

UTEP Library: You can access to a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students. **Notice that you have “Ask a Librarian.” You will be provided Extra Credit for searching electronic databases and finding articles relevant to your assignments. You will be given Extra Credit if you submit the article you found (as an attachment to BlackBoard email) and provide reasonable explanation why you selected this article, and for which assignment you are submitting this particular article (maximum 5 points for EACH article).**

The University Writing Center (UWC): Virtually everyone needs help with writing academic English. There’s no shame in it. The UWC [Library Building, Rm.227; phone: 915.747.5112] provides online consultations to all UTEP students at no cost. They also have walk-in services, if you are local. It is a terrific resource. If I suggest you attend the Writing Center, it’s because I think you will benefit from it. It’s not a punishment – it’s intended to help you. Check the website for more information: <http://uwc.utep.edu>

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 [making plans to cheat with another], 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.

Students with Disabilities statement: If you have or believe you have a disability, you may wish to self-identify. You can do so by providing documentation to the Center for Accommodations and Support Services (CASS) located in Union E Room 106. Students who have been designated as having a disability must reactivate their standing with CASS 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 CASS. You may call 919-747-5148 for general information about the Americans with Disabilities Act (ADA).

Student Conduct and Discipline: All students are expected and required to obey the law and to comply with Regent, Rules, and Regulations (<http://www.utsystem.edu/bor/rules>) with system and University rules, with directives issued by an administrative official in the course of his or her authorized duties and to observe the standards of conduct appropriate for the university.

Equal Opportunity: All students regardless of gender, age, class, race, religion, physical disability, sexual orientation, etc., shall have equal opportunity without harassment in this course. Any problems with or questions related to this can be discussed confidentially with Dr. Kosheleva [email her using BlackBoard email].

Inclusiveness and equity:

Learning happens only when we feel respected as a whole human being. Our top priority in our classroom 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 classroom 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, we want you to know that all of you are welcome in our classroom 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. We strive to show respect for the variety and

wholeness in each of you, and we 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, we would like to know so that we 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.

Guide to Online Etiquette:

As a member of the learning community of this class, the following is a list of specific expectations

(Note that this list is not exhaustive and that it may be added to as needed throughout the semester):

1. *You are expected to actively engage in the learning community of this class.*

This includes: completing the coursework tasks as outlined in each week's session, actively contributing to discussions, seeking guidance if you have questions (note that if you have a question, it is likely that everyone will benefit if ask your question) and exhibiting professional courtesy during interactions with classmates/ your instructor. Class participation includes, but is not limited to: engaging in in-class activities and writing, volunteering inputs in class discussions, answering questions, defending personal viewpoints, and presenting completed assignments to your classmates.

2. *You are expected to exhibit appropriate behavior for a higher learning environment.*

Even though we will not meet face-to-face, logging on to our online course site is the equivalent of walking on to the UTEP campus. Therefore, the rules of conduct that apply on campus also apply in our course site. Our course site is a place to engage in social learning; it is meant to be a safe space for all. Our ideas and beliefs shape who we are, and will differ from our peers; sharing these within class allows us to learn different perspectives and points of view, but this can only happen successfully if everyone in our learning community is respectful of individual ideas. You are encouraged to participate in all activities to the fullest extent possible, with an open mind to new experiences. In particular, the following are general guidelines for online interactions:

- All the information discussed between peers and/or with your instructor should be kept confidential, thus providing a safe atmosphere for creative expression, free of judgment.
- You are encouraged to participate to the depth that you feel comfortable sharing with the class (Note: An electronic record will remain, so be thoughtful in how much personal information you share. The general rule is: share only that which you would be comfortable seeing printed in a newspaper/ public Internet page).
- Do not use inappropriate language, all capital letters, or language short cuts (i.e. texting shorthand). Online entries should reflect academic writing standards, with edited spelling, grammar, and punctuation.
- When reacting to someone else's message, whether in agreement or disagreement, please address the ideas, not the person. (Note: Harassing, flaming and/or inappropriate postings will not be tolerated.)
- Be sure to read everyone's responses before posting. Avoid repetition of what someone else has already said. Add something new to the discussion!

Please refrain from posting yes/no or I agree/disagree answers (this will NOT earn you participation points). The point of our online interactions is to create a rich and meaningful sharing of ideas; therefore, posts should: justify positions, provide specific examples, and demonstrate that you have read the required readings and your classmates' comments carefully and thoughtfully.

3. *You are expected to exhibit high level time management skills and turn your work in ON TIME.* As previously mentioned, this is a fast-paced, intensive course that requires you to devote significant time to complete the required readings, discussions and various additional assignments that are due each week. Although there is no mandatory time that you must be online, the research shows that those with the best success in online courses create a set schedule for coursework and stick to it (whether you do your work at 3am or 10am on whatever day does not matter, what matters is just that you allow a sufficient, set time each week of the semester to focus on coursework). Timely completion of all coursework is essential for this class to run smoothly (i.e. your classmates rely on you to do your readings early in the week and contribute to the discussion on time in order for them to be able to post feedback later in the week). Therefore, late work will NOT be accepted. All online assignments are due by the due date and time listed in the task directions (see each weekly session in our course site for specific details). Please ensure that you carefully read all instructions for each assignment, particularly the due dates and times, and then schedule the time you devote to this class accordingly.

The instructor reserves the right to drop students who have not participated in online work during one week of class and/or failure to turn in two assignments. The instructor can drop any student any time a student violates the written rules/requirements for remaining in good standing in the course.

Note: Exceptions may be made in the case of *extreme emergency* with supporting documentation. I will not accept ANY late coursework after one week from the originally scheduled due date during the semester or after the last scheduled coursework due date at the end of the semester. If you anticipate your assignment will be late due to unusual circumstances, please contact me and explain your situation prior to the due date of the assignment. Without prior notice, late assignments will NOT receive any credit.

If BlackBoard is down and you cannot get into our course site to post work by the required due date:

- (1) you should call UTEP Helpdesk and report the problem; you should ask CASE NUMBER, and email it to Dr. Kosheleva (via regular email olgak@utep.edu). This information will help me to check with the Technology staff at UTEP regarding your problem.
- (2) ALL coursework should be posted in our online course site. 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 (through regular e-mail at olgak@utep.edu) 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. 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

4. *Your work is expected to be your own.*

Everything you turn in for this course must be your own work. The purpose of coursework is to know what *you* think, how you can use your own words to explain your thinking. Any student caught engaging in instances of cheating, plagiarism or any other form of academic misconduct WILL be referred to the Dean of Students Office for disciplinary action. Students may be suspended or expelled from UTEP for such actions. It's serious! Don't do it.

5. *Deadline and Grading Policy*

- The grades will be provided once every two-week period. Your grades with explanations and constructive feedback will be emailed to you via Blackboard email.
- Please ensure that you carefully read all instructions for each assignment, particularly the due dates and times. Reading instructions is your responsibility and you should not assume due dates or times.
- Keep electronic copies of all work submitted.

**Student Learning
Outcomes:**

COURSE SPECIFIC STANDARDS ECE 312 students will be able to:	Measurements (means of assessment for student learning outcomes listed in first column)
1. Compare and contrast empirical research and related theoretical perspectives of students development as they related to Inquiry-based pedagogy and early learning in the STEM domains	Class Participation; Discussions;
2. Analyze the critical impact of both the physical environment and socio-cultural interactions/relationships on students' STEM conceptual development	Class Participation; Discussions;
3. Outline STEM skills/practices and concepts development across different grades and academic subjects	Class Participation; Discussions;
4. Critically examine various instructional techniques and materials aimed at addressing differentiated student needs, strengths and interests in the STEM domains	Class Participation; Discussions;
5. Apply Inquiry-based learning experiences to enhance STEM domain competencies	Class Participation; Discussions;
6. Design developmentally appropriate STEM curricula for culturally and linguistically diverse learners	Class Participation; Discussions;

Evaluation & Coursework Requirements of Students:

Coursework Requirements

Participation	150 Points _____
Weekly Discussion	300 Points _____
Finding and Explaining relevant articles	300 Points _____
STEM Teaching Portfolio	250 Points _____

Total	1000Points _____

How Grades are Determined

Grade	Earned Points
A	900 - 1000
B	800 - 890
C	700 - 790
D	600 - 690
F	Below 60

General Criteria for Grading Assignments:

Does not meet expectations (Loss of many points)	Meets expectations (Loss of few points)	Exceeds expectations (Loss of no points)
<p>The information provided is not organized and detailed or conclusions drawn from the information is not supported or accurate. The assignment is incomplete/does not include all required sections according to the directions. All written portions include repeated grammatical and spelling errors; no or improper citations.</p>	<p>The information provided is somewhat organized and detailed and conclusions drawn from the information is somewhat supported and accurate. The assignment is mostly complete/ includes most required sections according to the directions. All written portions include few or no grammatical and spelling errors; proper citations with few errors.</p>	<p>The information provided is organized and detailed and conclusions drawn from the information are supported and accurate. The assignment is complete/includes all required sections according to the directions. All written portions include no grammatical and spelling errors; proper citations with no errors.</p>

Individual grading rubrics are found in the directions for each coursework task, which are located in our online course site. For tasks' *detailed instructions*, you should access the weekly class sessions in our online course site.

This course runs on a weekly schedule, Monday through Sunday. Detailed instructions for all of the coursework tasks to be completed each week of the semester are arranged by class session (i.e. each class session covers one week of the semester). The class sessions for each week are labeled by week number and start date in the main left-hand navigation in our course site. In each of the weekly class sessions, you will find: the topic(s) and objectives for the week, the required reading (with embedded links to download/access articles), a summary of what tasks are due (and when) that week and detailed directions and related links for completing and posting your coursework that is due for that class session (i.e. during that week).

All weekly tasks MUST be submitted by the given deadline; course work is ALWAYS due by 11:00 pm MT on the day indicated in the task directions.

Class Schedule: Please note that the schedule below is subject to change.

DATES	W	COURSEWORK DUE
Aug 27 thru Sep 2	Week 1	See the detailed instructions posted in Discussion Forum "Self-Introduction."
Sep 3 thru Sep 9	Week 2	See the detailed instructions posted in Discussion Forum "Week 2."
Sep 10 thru Sep 16	Week 3	See the detailed instructions posted in Discussion Forum "Week 3."
Sep 17 thru Sep 23	Week 4	See the detailed instructions posted in Discussion Forum "Week 4."
Sep 24 thru Sep 30	Week 5	See the detailed instructions posted in Discussion Forum "Week 5."
Oct 1 thru Oct 7	Week 6	See the detailed instructions posted in Discussion Forum "Week 6."
Oct 8 thru Oct 14	Week 7	See the detailed instructions posted in Discussion Forum "Week 7."
Oct 15 thru Oct 21	Week 8	See the detailed instructions posted in Discussion Forum "Week 8."
Oct 22 thru Oct 28	Week 9	See the detailed instructions posted in Discussion Forum "Week 9."
Oct 29 thru Nov 4	Week 10	See the detailed instructions posted in Discussion Forum "Week 10."
Nov 5 thru Nov 11	Week 11	See the detailed instructions posted in Discussion Forum "Week 11."
Nov 5 thru Nov 11	Week 12	See the detailed instructions posted in Discussion Forum "Week 12."
Nov 12 thru Nov 18	Week 13	See the detailed instructions posted in Discussion Forum "Week 13."
Nov 19 thru Nov 25	Week 14	See the detailed instructions posted in Discussion Forum "Week 14."
Nov 26 thru Dec 2	Week 15	See the detailed instructions posted in Discussion Forum "Week 15."
Dec 3 thru Dec 6	Week 16	See the detailed instructions posted in Discussion Forum "Week 16."

The course instructor reserves the right to adjust the course syllabus or change assignments as needed.