



**University of Texas at El Paso**  
**Fall 2017**  
**Department of Teacher Education**

**MSED 4310 (13014)**  
**HYBRID**

**Class meeting time:** M 12:00 pm – 2:50 pm, Educ. 402

**Instructor:** Dr. Olga Kosheleva, PhD

**Office:** EDU 801D

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**E-mail:** [olgak@utep.edu](mailto:olgak@utep.edu)

**Office Hours:** 9:40 am – 11:50 am or *by appointment*

**Required Text:** Van de Walle, John A. (2007). *Elementary and Middle School Mathematics: Teaching Developmentally*. 7th Edition. Longman.

ISBN 9780137025084

Companion website for another edition:

[http://wps.ablongman.com/ab\\_vandewalle\\_math\\_6](http://wps.ablongman.com/ab_vandewalle_math_6)

Other necessary handouts and/or readings will be passed out in class or will be available on Blackboard. You **MUST** have a valid UTEP login and password to access Blackboard via [my.utep.edu](http://my.utep.edu).

This is HYBRID course. We will meet face-to-face and we will have on-line sessions. Most of students' works will be submitted via Blackboard. Every time you submit your work through Blackboard, you would need to have a hard copy of this work in your portfolio (and provide me with another copy).

Once you are logged into Blackboard, you will find all the courses you are registered for, under the appropriate semester.

Guidelines for submissions to Blackboard: follow all the instructions provided in the homework description.

Each submission should have appropriate subject (e.g. "FirstName\_Last Name, Home Work, due date").

Attach submission files that have the file names as specified in the homework description. A submission that does not have a proper subject and/or file name will be assigned 0 points. Please, follow the guidelines for submission provided in the homework assignment.

**Recommended Resources**

1. NCTM Illuminations: <http://illuminations.nctm.org/>
2. NCTM Principals and Standards (2000): <http://standards.nctm.org/>

3. Early Algebra: [www.ase.tufts.edu/education/earlyalgebra/default.asp](http://www.ase.tufts.edu/education/earlyalgebra/default.asp)
4. Annenberg Media: <http://www.learner.org/index.html>
5. National Library of Virtual Manipulatives:  
<http://nlvm.usu.edu/en/nav/vlibrary.html>
6. Mathematics Toolkit (2001): <http://www.utdanacenter.org/mathtoolkit/>
7. TExES preparation manuals <http://cms.texas-ets.org/texas/prepmaterials/>
8. Texas Essential Knowledge and Skills (TEKS):  
<http://www.tea.state.tx.us/index2.aspx?id=6148>
8. Texas Education Agency (STAAR Released Tests):  
[http://tea.texas.gov/student.assessment/STAAR\\_Released\\_Test\\_Questions/](http://tea.texas.gov/student.assessment/STAAR_Released_Test_Questions/)
9. The National Academies of Sciences Engineering Medicine, NAP  
<https://www.nap.edu/>
10. WordPress: <http://wordpress.org>
11. UTEP Library Electronic Databases
12. Common Core Standards: <http://www.corestandards.org/>

### **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, and 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.

***No cellular phones or beepers are permitted in class.***

### **UTEP EDGE Alignments:**

This course will help students gain experience of (1) research and scholarly activity, (2) learning communities, (3) creative activity and help students enhance skills of (1) problem-solving, (2) communication, and (3) critical thinking.

### **Equal Educational Opportunity**

In order 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 on the basis of 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

## **Course Framework and Philosophy**

This course provides a concentrated review of basic mathematics, mathematical concepts and algorithms applicable to the intermediate and middle school grades. The emphasis will be placed on teaching and learning mathematics using “conceptual” understanding of mathematics. By “conceptual”, we mean dealing with mathematics using real understanding, not merely rote, computational approach that just means obtaining the correct final answer. The topics will include real numbers and operations on real numbers, geometry and measurement, statistics and probability, and algebra (patterns, variables, and functions).

Emphasis will be placed on math content that should be taught to students (grades 4-8), video lesson observations and analysis, lesson planning, and inquiry teaching. Projects involving problem-based teaching and learning will be part of your assignments. Further emphasis will be given to the appropriate use of manipulatives, cooperative learning, verbalizing mathematics, teaching problem-solving techniques, assessment of student performance, and computer applications.

This course will not be in lecture-only format, but will include significant time for you to create your own manipulatives, approaches, strategies, innovative techniques to figuring out math problems and present the most visual, natural way how to teach similar concepts to the children in elementary and middle grades. Regardless of your current level of background knowledge or past classroom experiences, you owe it to yourself and your future students to come to this class with openness to learning mathematics in new ways.

The goal is to create a community of learners who will incorporate innovative teaching and methods and technology, practice and reflect on their teaching, developing their skills as effective teachers of mathematics.

We will reflect upon our own experiences and beliefs about mathematics. We will look at mathematics as a discipline, and compare more traditional ideas about what it means to ‘know’ and ‘do’ mathematics to the vision of mathematics advocated by the reform movements as well as what it means to ‘know’ and ‘do’ mathematics relying on constructivist principles of learning and teaching. Some related questions include:

- What makes a ‘good mathematical task’, and how can a good task support students’ learning?

- How do children make sense of mathematics concepts?
- How can tools (including manipulatives, calculators, and other technology) assist children in their thinking and problem solving?
- What are the roles of a teacher in a math classroom? What are the roles of the students?
- What do we need to think about when planning and implementing a mathematics lesson?
- How can we adjust our instruction based on what we learn from students?

### Course Objectives and Student learning Outcomes Useful Websites

Standard	Student Learning Outcomes
<i>Standard V. Mathematical Processes:</i> The mathematics teacher understands and uses mathematical processes to reason mathematically, to solve mathematical problems, to make mathematical connections within and outside of mathematics, and to communicate mathematically.	Apply content knowledge to construct a mathematical model of a real world situation, analyze and evaluate how well the model represents the situation based on results.
<i>Standard VI. Mathematical Perspectives:</i> The mathematics teacher understands the historical development of mathematical ideas, the interrelationship between society and mathematics, the structure of mathematics, and the evolving nature of mathematics and mathematical knowledge.	Use mathematics to model and solve problems in other disciplines to show the integration and the relevance of mathematics to the linguistic, cultural, and socioeconomic background of students.
<i>Standard VII. Mathematical Learning and Instruction:</i> The mathematics teacher understands how children learn and develop mathematical skills, procedures, and concepts, knows typical errors students make, and uses this knowledge to plan, organize, and implement instruction; to meet curriculum goals; and to teach all students to understand and use mathematics.	Apply theories and principles of learning mathematics to plan and implement developmentally appropriate and effective instructional activities for all students.
<i>Standard VIII. Mathematical Assessment:</i> The mathematics teacher understands assessment and uses a variety of formal and informal assessment techniques appropriate to the learner on an ongoing basis to monitor and guide instruction and to evaluate and report student progress.	Select or design and administer a variety of appropriate assessment instruments and/or methods (e.g., formal/informal, formative/summative) to monitor student understanding of mathematics and progress over time.
<i>Standard IX. Professional Development:</i> The mathematics teacher understands mathematics teaching as a profession, knows the value and rewards of being a reflective practitioner, and realizes the importance of making a lifelong commitment to professional growth and development.	Become life-long learners who renew their skills by critically and effectively reflecting upon, evaluating, and implementing research based materials in the mathematics classroom.

These standards can be downloaded from the following website:

[tea.texas.gov/WorkArea/DownloadAsset.aspx?id=2147484170](http://tea.texas.gov/WorkArea/DownloadAsset.aspx?id=2147484170)

## **Course Requirements and Assignments**

Assigned readings are a vital aspect of the course. Students will present math activities described in the textbook, they also will be asked to research UTEP electronic databases and create their own math activities using manipulatives and technology. Short quizzes related to the ideas and concepts discussed in the textbook, in face-to-face and online class sessions will be regularly given to students in the beginning of the class or at the end of the class. **Late assignments will not be accepted**

Reports and reflections must be **word-processed** with double-spacing and standard (Times New Roman) 12-point fonts, checked for spelling/grammar, and have any appropriate output/graphics electronically pasted into the document. Correct grammar and spelling is expected. You will be asked to submit most of the assignments via Blackboard. Please, make sure that your Individual work should be submitted to the Discussion Board, in the Topic with Your Name. For your Group work follow the directions in the Assignment.

**Each attendance and participation will count towards final grade. It will be taken each meeting using a sign-in sheet (which is your responsibility to make sure you sign). Your active participation in each class session is vital to your learning as well as to the learning of other students in the class.**

The instructor may count late arrival, early departure, or blatant nonparticipation as a half-absence or even a full absence, depending on what is missed. We meet only once a week and most of the activities in this course involve collaborative learning, group activities or discussions. If you miss quiz or test, you will get score of 0.

**I expect you to attend all face-to-face class meetings, be prepared to engage in active, collaborative participation during the session, whether it is the whole group discussion, collaborative group activity, or individual reflection.**

Preparation for class involves completion of assigned readings and writing tasks. If you are unable to attend a particular class session, please let me know beforehand. You are responsible for contacting someone in the class to find out what was happening in your absence, and to get copies of notes, handouts and announcements.

In case of emergencies, you are asked to provide written documentation of the emergency at the *earliest* opportunity.

If you will have absence for religious holy days (which are excused, of course), send me e-mail on Blackboard as soon as possible. As the UTEP *Catalog* says, "When in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor may drop the student from the class with a grade of "W" before the course drop deadline and with a grade of "F" after the course drop deadline." To be specific, since each meeting is a week's worth of the

course, having **more than two absences (during face-to-face sessions) may result in an instructor-initiated drop**. On a positive note, excellence in attendance will actually improve your grade, as you can see by the formula under “Grades.”

**Academic Integrity:** It is expected that work you submit will represent your own effort (or your own group’s effort, if it is a group project), will not involve copying from or accessing unauthorized resources or people (e.g., from a previous year’s class), and will appropriately acknowledge allowable references that you do consult. Violations are unacceptable and will be referred to the Dean of Students Office for possible disciplinary action. Don’t resubmit work completed for other classes without specific acknowledgment and permission from me.

For Group Work: Within a group, members are allowed to divide up subsets of the project for which individuals will take the initial responsibility for coordinating efforts, but it is assumed that by the time a group turns in a write-up that all members have read, discussed, and understand all parts of what is being turned in. Group members may even discuss general ideas and strategies with members of other groups, but NOT share parts of actual written work.

**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 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 747-5148 for general information about the Americans with Disabilities Act (ADA).

### **Basic skills requirement**

Proficiency in the basic skills, as described by the National Council of Teachers of Mathematics, should be demonstrated during the semester. To demonstrate proficiency, you will be required to complete a series of tests of basic skills covering fundamental topics in the following areas: whole number, integers, fractions, decimals, geometry, measurement, ratio, proportion, percent, probability and statistics, and algebraic reasoning.

### **FINAL PORTFOLIO should include documents reflecting following activities:**

1. **LESSON ANALYSIS:** you will examine and evaluate several mathematics lessons (video observation). A handout will be provided to guide your analysis. (Individual work). **Timeline:** throughout the semester.
2. **ANALYSIS** of state and national standards related to mathematics education. (Individual work). **Timeline:** throughout the semester.

3. Critical Literature Review: Each student will draft a critical literature review (CLR) on mathematics education topics that are related to the mathematical concepts taught in the intermediate and middle school grades. (Individual work). **Timeline:** throughout the semester.

4. ORGANIZING/FACILITATING INTERACTIVE DISCUSSIONS/PRESENTATIONS OF META LESSONS:

Each group will be prepared to facilitate interactive discussions with students from the class. You will present your Meta lesson using interactive activities. Your role is to be "peer leaders", that is while other students work in small groups, you will be providing content activities, and will help to maintain and encourage student interest and focus on conceptual understanding through a Socratic questioning dialog. You should also promote interaction within and among groups participated in content activities. The ultimate goal: by participating in hands-on activities, students will be actively constructing their own knowledge and deepen their understanding of mathematical concepts and procedures (group work). Specific schedule of Discussions and Presentations will be provided at the middle of September.

**Timeline:** Specific schedule of Discussions and Presentations will be provided during second week of February.

5. INTERNET RESOURCES/PROGRAM EVALUATION: Use programs from the links provided or critique a program currently being used in the elementary and middle grades. Form for critique will be provided. (Group work).

**Timeline:** throughout the semester.

6. ELECTRONIC DATABASES: we will be using Electronic Databases from UTEP Library on a continuous basis. Make sure to become familiar with this wonderful resource. Part of every assignment would include some search in Electronic Database.

**Timeline:** throughout the semester. (Individual/Group work).

**OTHER IMPORTANT WORK**

**DAILY QUIZZES (Individual Work)**

Unless otherwise announced, every day will start with a short quiz—all topics on previously assigned readings/projects are “fair game” for a quiz question.

Quizzes start promptly at the beginning of the hour. If you are late, you miss the quiz.

Quiz problems will be written on the board or projected—you do not need to copy down the problem. Please, write only on one side of the paper. You will have approximately 10 minutes to write out your answers.

All written homework should be submitted to Blackboard (alternatively to e-mail), also two copies of the papers should be brought to class (one copy is submitted to the professor, one should be kept in your portfolio).

**Extra Credit: throughout the semester you will be provided with opportunities to receive extra credit. Typically extra credit constitutes the grade equivalent to one successful quiz completion.**

**Example of activities that count as extra credit:**

Example 1: TEACH a MATH LESSON (Microteaching, at least 20 min.). Please, discuss the topic and lesson plan with your teacher at your school of Internship.

Before you teach the lesson, you should submit pre-reflection (at least 1,000 words) describing your preparation process. After lesson was taught you should submit post-reflection with photographs showing selected students' works, etc (at least 1,000 words) (Individual or Group work). Extra credit (three quizzes).

Example 2: TUTORING in Math (grades 1-8). You will be asked to write a detailed report describing mathematical problems solved, difficulties and mistakes students experienced, your approaches to tutoring, etc. Extra credit (four quizzes for regular tutoring during semester).

Example 3: COMPLETING SURVEYS for variety of studies that would be announced in this class. Extra credit (one survey = one quiz).

**Grades will be provided once a month (average grade). They will be submitted through Blackboard email.**

**Grade Distribution**

Classroom/Online Participation, Attendance	15
Lesson Analysis/Critical Lit Review	15
Homework/Quizzes/Presentations	20
Final Portfolio	25
Tests	25
<b>TOTAL:</b>	<b>100</b>



## Course Calendar

Date	Assignment
Week 1: August 28  <i>Face to Face</i>	Course Overview Introductory activity & examination of syllabus Presentation of course resources
September 4 <i>Labor Day</i>	
Week 2: September 11  <i>Face to Face</i>	Pre-test Follow assignment guidelines under discussion forum via blackboard, if available (Week 2)
Week 3: September 18  <i>Face to Face</i>	Presentation of UTEP Library Electronic Databases Presentations of research from Week 2 Quiz Follow assignment guidelines under discussion forum via blackboard, if available (Week 3)
Week 4: September 25  <i>Face to Face</i>	Presentations of findings from research articles from Week 2 Quiz Hands-On Activities Follow assignment guidelines under discussion forum via blackboard, if available (Week 4)
Week 5: October 2  <i>Face to Face</i>	Presentations Quiz Hands-On Activities Follow assignment guidelines under discussion forum via blackboard, if available (Week 5)
Week 6: October 9  <i>Online</i>	Follow assignment guidelines under discussion forum via blackboard, if available (Week 6)
Week 7: October 16  <i>Face to Face</i>	Midterm Test Follow assignment guidelines under discussion forum via blackboard, if available (Week 7)
Week 8: October 23  <i>Face to Face</i>	Presentations Quiz Hands-On Activities Follow assignment guidelines under discussion forum via blackboard, if available (Week 8)

<p>Week 9: October 30</p> <p><b><i>Face to Face</i></b></p>	<p>Presentations  Quiz  Hands-On Activities  Follow assignment guidelines under discussion forum via blackboard, if available (Week 9)</p>
<p>Week 10: November 6</p> <p><b><i>Online</i></b></p>	<p>Follow assignment guidelines under discussion forum via blackboard, if available (Week 10)</p>
<p>Week 11: November 13</p> <p><b><i>Face to Face</i></b></p>	<p>Presentations  Quiz  Hands-On Activities  Follow assignment guidelines under discussion forum via blackboard, if available (Week 11)</p>
<p>Week 12: November 20</p> <p><b><i>Online</i></b></p>	<p>Follow assignment guidelines under discussion forum via blackboard, if available (Week 12)</p>
<p>Week 13: November 27</p> <p><b><i>Face to Face</i></b></p>	<p>Presentations  Quiz  Hands-On Activities  Follow assignment guidelines under discussion forum via blackboard, if available (Week 13)</p>
<p>Week 14: December 4</p> <p><b><i>Online</i></b></p>	<p>Follow assignment guidelines under discussion forum via blackboard, if available (Week 14)</p>
<p>Week 15: December 11</p> <p><b><i>Face to Face</i></b></p>	<ul style="list-style-type: none"> <li>▪ Final Presentations</li> <li>▪ Follow assignment guidelines under discussion forum via blackboard, if available (Week 15)</li> </ul>

***This syllabus is subject to change as needed.***