

**ELED 4310 / BED 4310**  
**Teaching Math in Elementary School and Bilingual Classrooms**  
**Syllabus (Summer 2017)**

University of Texas at El Paso  
 College of Education, Department of Teacher Education

<b>Instructor</b>	Dr. Song An	<b>Email:</b> saan@utep.edu
<b>Class Locations</b>	402 and 201 Education Building, UTEP	
<b>Office Phone</b>	915-747-7616	
<b>Office Hours</b>	Education Building 201 M & W 12:00 pm– 1:00 pm (Other time by appointment)	
<b>Class Time</b>	M & W (1:00pm to 5:20pm) Online discussions throughout the semester	
This syllabus is subject to change as needed. Any changes to the syllabus will be announced in class.		

### Course Description

This course analyzes contemporary curricula; implementation of methods relevant for active, authentic learning, and culture relevant teaching of mathematics to elementary grade learners. Course instruction and activities include opportunities to understand state and national standards related to teaching and learning mathematics. The course will investigate how children learn mathematics and what is meant by deep understanding of mathematics as well as how to teach mathematics so that learners see relationships and connections within and between mathematics ideas. The course will also discuss equity principle and develop conceptual understanding of elementary grade mathematics contents.

### Required Textbook

Van de Walle, J., Karp, A., Bay-Williams, J. (2009). *Elementary and Middle school mathematics: Teaching developmentally (7th ed.) Texas Edition*. Boston, MA: Pearson.

### 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. **Texas Education Agency (TAKS Released Tests).** <http://www.tea.state.tx.us/>

### Course Objectives/Student Learning Outcomes

<i>Students enrolled in this section will have multiple academic goals to achieve:</i>	<i>Instructor will use following assessments to evaluate students' learning outcomes</i>
1. Develop a positive belief in teaching and learning mathematics; understand the role of the teacher as a reflective practitioner.	a. Course graded assignments b. Class discussion
2. Design mathematics lessons aligned with the NCTM and TEKS with emphasis of mathematics processes and conceptual understanding	a. Course graded assignments b. Lesson evaluation c. Class discussion
3. Identify and use curricular materials and resources that support learner-centered teaching practices.	a. Course graded assignments b. Lesson development c. Lesson demonstration
4. Create differentiated lessons effective for the diverse mathematics classroom.	a. Lesson demonstration b. Class presentations c. Lesson observation
5. Explore and develop skills in instructional methods (i.e., use of mathematics manipulatives) appropriate for the teaching and learning of elementary mathematics concepts.	a. Course graded assignments b. Final Exam c. Class discussion and presentation on specific math contents
6. Create assessments appropriate for the Elementary school students	a. Course graded assignments b. Class discussions c. Final exam

### Attendance, Participation and Professionalism

Attendance of individuals in the class is required and unexcused absences will result in a grade reduction. University rules regarding absences will be followed for the required class meetings. There will be a student sign-in sheet at the beginning of each class. If a student misses a session, it is the responsibility of the student for knowing and completing all work required. Each attendance will count towards the final grade. ***Two tardies (including early leaves) will count as one absence. More than two absences may result in a student earning one-letter grade lower in the course.***

Students are expected that students will attend all classes and actively participate in working on projects and class discussions. Students are expected to prepare for each class session. Lateness to class is strongly discouraged. With the emphasis on collegiality it is important that all group members be in class to contribute to the group's effort in developing an understanding of what it means to teach mathematics effectively.

All teaching candidates are expected to demonstrate the ethical and professional values associated with Elementary Level Education. It is critical teaching candidates adopt and exhibit a professional demeanor at each point in their teacher preparation. Evidence of professional dedication will be expected through all work during classes and practicum, seminar, internship, and clinical experiences. Credit for participation and professionalism will be part of the evaluation. ***Wireless phone usage is strictly prohibited in class.***

### **Assignment Format and Late Assignments**

All assignments must be submitted electronically unless specified. It is highly recommended you save all your work electronically and possibly a hardcopy for your records before turning it in. The following format is **required** for every assignment submitted. Deviating from the format may result in reduced points, returned paper, or rejection of the assignment completely. All assignments should be double spaced and typed with 12-point font; page numbers should be included if more than one pages. **You must label your assignment as you save it containing your name and the assignment name.** Only assignments submitted complete and on time will be considered for full credit. Without evidence that you were unavailable (sick) for the entire range of days, the assignment will be given a zero. Any assignments turned more than one week late (or the range of dates for submission) will receive zero points.

### **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.

### **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 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).

### **Course Requirement**

#### **Attendance and Class Participation**

Your active participation in each class session is vital to your learning as well as to the learning of other students in the class. I expect you to attend all class meetings prepared for active, collaborative, participation during the session, whether it is whole group discussion, small group activity, or individual reflection. Preparation for class involves completion of assigned readings and 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 transpired in your absence. Late work will not be accepted. Make-up quizzes or tests may be scheduled only in the event of documented illness or emergency.

### **Activity Demonstration**

Working independently, you demonstrate a mathematics activity on a specified date in class that corresponding with your assignment 3-5. The demonstration should be around 15 minutes in length. In the activity demonstration, (1) you will provide interactive activities to the class; (2) you will explain your target mathematics concepts to the class; (3) you will offer your original mathematics questions as assessment to your classmates. Your role in the demonstration is to be a "peer leader", 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 interactions.

### **Assignment 1: Mathematics Teaching Philosophy** (*No less than 600 words*)

In this assignment, you will create a graphic novel with eight pictures on two A4 pages. On page one, you will draw 4 pictures to describe and illustrate your experiences of learning mathematics in the past. On page two, you will draw 4 pictures to describe and illustrate what you want your students learning mathematics in the future. First, draw four pictures to show four key moments during your math class. Please color your pictures so that they illustrate the emotions felt during the experience. Underneath each picture you will write two or three sentences of narration or dialogue describing what is happening in that picture. Bring a hard copy of your drawings to class on June 14 during our second class meeting.

### **Assignment 2: TEKS and NCTM Review** (*No less than 600 words*)

Texas Essential Knowledge & Skills (TEKS) and National Council of Teachers of Mathematics Standards (NCTM) Standards are the two important mathematics standards that all teachers are required to know. You will read both documents and write a review report of the documents. You will compare the two documents to identify similarities and differences in their requirements for students' understanding of mathematics. In your paper, you will discuss at least three key differences between the TEKS and the NCTM standards based on your explorations.

### **Assignment 3-5: Lesson Plan Development** (*No less than 600 words in each lesson plan*)

Select one of mathematics topics (such as fraction, algebra and data analysis), you will develop a series of three mathematics activities based on following international-cultural themed strategies. The North America (Canada, United States and Mexico) themed activities are excluded in these assignments, and you need to explore cultures in different counties/regions in **Africa, Asia, Europe, and South America**. In each lesson, you will provide "flexibility" instructional designs, and to specify how students in each grade level (K-6) could use these activities. You will provide instructional steps **detailed enough so that other teachers can replicate your lesson**. Lesson plan template will be provided. Specifically, **in assignment 3**, you will develop your first lesson; **in assignment 4**, you will develop your second lesson; and **in assignment 5**, you will develop your third lesson. The activity in each lesson will focus on a different culture.

**Online Discussions** (*Online Discussion Due Dates: Every Sunday Midnight*)

Each week you will participate a series online discussions about strategies of teaching mathematics throughout the semester. Each student should post answers to each discussion questions (no less than 300 words), the answer should be concise, meaningful, well thought-out, and articulate. Post your first response by the due days and post your follow up responses in the following two days. Read all the postings of your peers, and interact with your peers in a positive manner. You will reply at least three of your classmates’ posts in a meaningful way. **At the end of the semester, you will have a take home exam, and the exam will cover all class/online discussions, assignments, activities, and readings.**

**General Calendar**

*Changes may be made in this syllabus when judged appropriate by the instructor*

<b>Dates</b>	<b>Class Topics/Activities</b>	<b>Assignments and Due dates</b>
Week 1 June 12	Chapter 1-7 Foundation of Math Teaching	Assignment 1 <i>Due June 8</i>
Week 1 June 14	Chapter 8-13 Number Concepts & Operation	Assignment 2 <i>Due June 10</i>
Week 2 June 19	Chapter 19 & 20 Geometry & Measurement	Assignment 3 <i>Due June 15</i>
Week 2 June 21	Chapter 21 & 22 Data Analysis & Probability	
Week 3 June 26	Chapter 14 & 18 Algebra	Assignment 4 <i>Due June 22</i>
Week 3 June 28	Chapter 15-18 Fraction and Proportion	Assignment 5 <i>Due June 29</i>
Week 4 July 3	Activity Demonstrations	
Week 4 July 5	Take Home Final Exam	Take Home Final Exam <i>Due July 9</i>

**Assignments and Grades**

Assignment 1	(10 Pts)	(Week 1)
Assignment 2	(10 Pts)	(Week 1)
Assignment 3	(10 Pts)	(Week 2)
Assignment 4	(10 Pts)	(Week 3)
Assignment 5	(10 Pts)	(Week 4)
Online Discussion	(15 ×4 Pts)	(Week 1-4)
Activity Demonstration	(20 Pts)	(Week 4)
Take Home Final Exam	(70 Pts)	(Week 4)
<b>Total</b>	<b>200 Pts</b>	
<b>Grade Distribution:</b>		
<b>A</b> 90% - 100 % of point total	<b>B</b> 80% - 89.9% of point total	
<b>C</b> 70% - 79.9 % of point total	<b>D</b> 60% - 69.9% of point total	

### Sign-In Passcode

- Put Your Name Here \_\_\_\_\_
- It is your responsibility to get my sign-in passcode on this sheet **BEFORE** each class meeting starts
- Please return this sheet to me in our last class meeting to receive your attendance credits

Week 1 June 12	
Week 1 June 14	
Week 2 June 19	
Week 2 June 21	
Week 3 June 26	
Week 3 June 28	
Week 4 July 3	