The College of Education at CSULB is a learning and teaching community that prepares professional educators and practitioners who promote equity and excellence in diverse urban settings through effective pedagogy, evidence-based practices, collaboration, leadership, innovation, scholarship, and advocacy.

California State University, Long Beach
College of Education, Department of Teacher Education

Syllabus
EDEL 462 Spring 2021
Shuhua An

Course Information

Course: EDEL 462 - 02 (10560) Teaching and Learning Mathematics, K-8
Term: Spring 2021
Location: Online
Format: Synchronous on Mondays, 4:00 pm - 6:45 pm
Number of Weeks online: 15 weeks
Monthly Zoom Meeting: https://csulb.zoom.us/j/89551025407 Meeting ID: 895 5102 5407

First and Last Day of the Online Course: January 19, 2021 until May 14, 2021.
Weekly Start and End Day: The online week begins on Monday and ends on Sunday
Due Date/Time Zone: Due dates are expressed in day, hour and time zone (PST). Students are responsible for adjusting the due date to their time zone.
Technical Support: Helpdesk at (562) 985-4959, and helpdesk@csulb.edu; Monday – Friday between 9 am and 5 pm (Pacific Standard Time).
The system check for BeachBoard is:
https://bbcsulb.desire2learn.com/d2l/tools/system_check/systemcheck.asp?ou=6605
Technical Competence Required: Students must be able to use email, Zoom, and BeachBoard.

Instructor Information

Instructor: Shuhua An, Ph.D.
Office: ED2 Rm 260
Email: Shuhua.An@csulb.edu
Office Hours: Virtual office hours every day via email or Zoom on Mondays, 2:30-3:30 pm
https://csulb.zoom.us/j/98034644208, Meeting ID: 980 3464 4208

Required Text and Materials

An, S., &Wu, Z. (2020). Teaching elementary and middle school mathematics using the MSA approach (5th ed.). Irvine, CA: Education for All.
California Department of Education. (2016). Mathematics Framework for California Public Schools. Sacramento, CA: California Department of Education.
Available: http://www.cde.ca.gov/ci/ma/cf/draft2mathfwchapters.asp
California Department of Education. (2013). California Common Core State Standards for Mathematics. Sacramento, CA: California Department of Education.
Available: http://www.cde.ca.gov/be/st/ss/documents/ccssmathstandardaug2013.PDF

Course Description

Prerequisite: Admission to the Multiple Subject Credential Program
Learning theories, research-based instructional practices of teaching mathematics to all students in diverse classrooms. Minimum of ten hours of fieldwork in classrooms where at least 25% of the students are classified as English learners. Letter grade only (A-F).

Program Student-based Learning Outcomes

The following Program Outcomes (POs) are aligned with the Multiple Subject Credential Program SLOs which are based on the *Teaching Performance Expectations* (TPEs, revised and adopted June 2016); Common Core State Standards (revised March, 2013); and RICA Content Specifications (Domains I-V, revised 2007). Upon successful completion of the course, students will demonstrate the following:

SLO 1-Lesson Design and Assessment

1. Written lesson plan that is clear, complete, and standards-based (TPE 3.1)
2. Lesson plan that includes an appropriate three-part objective (content, level of cognition, proving behavior) (TPEs 3.3, 4.1, 5.8)
3. Lesson plan that includes a formative assessment tool and clear plan for summative assessment that allows students to demonstrate mastery in a variety of ways (TPE 3.4, 5.1)
4. Lesson plan that includes a step-by-step approach to the instructional sequence, procedures aligned with the lesson objective and appropriate task analysis (TPE 4.4)
5. Include plans for engaging students, modeling, active participation, and checks for understanding (TPE 1.4, 1.8, 3.3, 4.7)
6. Lesson plan includes differentiated instruction (materials and/or proving behavior) for English Learners and at least one other identified subgroup at tiers 1 & 2 (TPE 1.4, 1.6, 3.5, 3.6, 4.4, 5.7, 5.8)
7. Lesson plan includes opportunities for students to actively think critically and work collaboratively (TPE 1.5, 4.6)
8. Lesson goals and instructional strategies are based on student learning needs (TPE 1.1, 3.2, 4.2)
9. Lesson plan incorporates appropriate and available technology (TPE 3.7, 3.8, 4.7, 4.8)

SLO 2-Lesson Implementation and Assessment

1. Lesson is taught in alignment with specified standards (TPE 4.3)
2. Objective/Learning Target is clearly communicated to all students (TPE 3.1, 3.2, 4.4)
3. Materials are prepared and utilized effectively (TPE 4.3)
4. Appropriate pacing is used to teach the lesson and monitor for student learning (TPE 1.5, 4.3, 4.4, 4.7)
5. A variety of questioning and active participation (overt and covert) strategies are used throughout the lesson (TPE 4.3)
6. The results of active participation strategies are used to make adjustments to the instruction (TPE 1.8, 5.1, 5.2)
7. Students are engaged in self-assessment (TPE 4.5, 5.3)
8. Uses appropriate wait time during questioning (1.5, 1.6)
9. Effectively implements appropriate and available technology (TPE 3.7, 3.8, 4.7, 4.8, 5.3)

SLO 3-Classroom Management and Environment

1. Teaches, reteaches, or reinforces rules, procedures, and routines (TPE 2.1, 2.2, 2.6)
2. Applies appropriate reinforcement techniques throughout the lesson (structure, approximation, extinction, consequences) (TPE 2.3, 2.5)

3. Effectively implements proactive and positive classroom management techniques (TPE 2.1, 2.3, 2.5, 2.6)
   Implements appropriate strategies to maintain student motivation (TPE 1.3, 2.3, 2.5, 2.6)

SLO 4-Professionalism

1. Arrives on-time and prepared to engage in instruction (TPE 6.8)
2. Conducts regular reflection on performance (TPE 6.1)
3. Establishes professional learning goals (TPE 6.3)
4. Learns to communicate effectively and collaborate with all stakeholders (other teachers, administrators, support staff, parents, community members) (TPE 6.4)
5. Models ethical conduct of teaching professionals, including use of technology and digital media (TPE 6.5, 6.6)
6. Learns how to engage with parents (TPE 1.2, 2.6, 5.5, 6.4) activity: how to show parents how to do a read-aloud

Course Student-based Learning Outcomes

A. **Creating & maintaining effective environments for student learning**

1. Identify the characteristics of effective mathematics programs, including principles of education equity, multicultural education, and linguistic diversity (M1). Utilize differential instruction, create, and maintain effective environments to support all students in learning mathematics through active participation. (SLO 1, SLO 2)
2. Select tools and technology enhancements to support the learning of mathematics including computers, calculators, and software. Use web-based online resources for teaching and learning, and professional growth and development. (SLO 1, SLO 2)

B. Understanding & organizing subject matter for student learning

1. Demonstrate knowledge of the psychological principles of the teaching/learning process that align with California Common Core State Standards (CCSS) for Mathematical Practices. (SLO 1, SLO 2) (M2)
2. Design instruction for elementary and middle school mathematical content, including the development of mathematics curriculum in alignment with the Mathematics Framework for California Public Schools, the California Common Core State Standards (CCSS) for Mathematics. (SLO 1, SLO 2) (M3)
3. Plan and demonstrate strategies of teaching to the Common Core State Standards for Mathematics, utilizing models of explicit instruction, interactive instruction, and implicit instruction emphasizing the 5E model, the three-phase model, international math approaches, concept attainment model, cooperative learning, cognitively-guided instruction, and the problem-based learning model. (SLO 1, SLO 2)

C. Planning instruction & designing learning experiences for all students

1. Design instruction that includes differentiated instruction for English Learners. (SLO 1)
2. Design instruction for elementary and middle school mathematical content that includes appropriate accommodations and modifications for the continuum of students with mild/moderate to moderate/severe disabilities. (SLO 1)
3. Select or design and demonstrate hands-on techniques for the use of concrete models, visual representations, and other instructional materials to support all students in learning. (SLO 1)
4. Design instruction that includes opportunities for students to actively think critically and work collaboratively (SLO 1)
5. Utilize a variety of assessments to identify individual student learning needs and to support students in achieving mathematical proficiency in concepts and procedures, problem solving, communicating, reasoning, modeling, and data analysis. (SLO 2)

D. Developing as a professional educator

1. Observe and participate in an elementary or middle school classroom and enhance teaching ability in field experiences. (SLO 2, SLO 4)
2. Integrate different perspectives in teaching and learning mathematics such as international, integrated STEM or multi-cultural perspectives. (SLO 1, SLO 2, SLO 3)

Clinical 2 Courses– EDEL 442, EDEL 452, EDEL 462, EDEL 472, SCED 475

Candidates will be asked to submit a time log of the alternative fieldwork on S4 @ The Beach by the end of the semester. To submit the time log, candidates must indicate the total number of hours they spent for the alternative fieldwork each course.

Information on how to complete the time log can be found on the Office of Clinical Practice website at www.csulb.edu/ocps4.

Course Requirements

There are two types of Assignments: Individual Assignments and Group Assignments. All assignments should follow the APA format.

Pre- and Post- Pedagogical Content Knowledge (PCK) Questionnaires (15 points each)
Answer the questions on the Pre- and Post-PCK Questionnaires to the best of your ability. Provide full and complete answers that are based on your learning experiences and understanding of mathematics.

Introduction in Discussion Board (5 points)
(1) Introduce yourself, (2) Share a story about your favorite math teacher at K-8 levels and discuss one important characteristic of your favorite teacher and why it is important, and (3) provide comments to two peers' posts.

Unit of Study in Mathematics Plan (20 points) (Group Work)
Develop a unit of study plan and a detailed MSA lesson plan within the unit plan.

1. Unit Lesson Plan (10 points)
   Develop a unit of study plan that includes at least five lesson outlines. Use the Unit Lesson Plan template to complete this assignment.
2. Problem-Based Learning Lesson Plan (10 points)
   Develop a detailed MSA lesson plan that describes a problem-based learning instructional approach. Use the MSA Lesson Plan template to complete this assignment.
   See the separate instruction sheet for this assignment on BeachBoard.

STEAM Integration (20 points) (Group Work)
Design a STEAM task (20pts): (1) Search and analyze resources in STEAM (science, technology, engineering, arts, and math); (2) Design one STEAM task at the elementary or middle school level and use PowerPoint slides to describe the task; (3) Develop a 5 min video to demonstrate the engineering design process of your task; and (4) individual reflection on learning from design, group work, and from other groups' sharing.

Signature Assignment (20 points)
Identify Common Core State Standards for Mathematics in the Numbers and Operations in Base

Ten, Numbers and Operations-Fractions for grades K-5 or Ratio and Proportion Relationships 6-8 content domains. Write one or more lesson objective(s) that are aligned with the selected content standards. Identify student readiness needed for the standards and apply it to facilitate student understanding. Describe instructional strategies and develop student learning activities related to the CCSS Mathematical Practice Standards that you will use to teach this lesson. Address opportunities for students to work collaboratively and to think critically. Adapt resources, technologies and instructional materials that address the needs of all students, especially including English learners and students with special needs. Provide a formative assessment(s) using critical thinking questioning and involve students to participate in self-assessment.

MSAW (35 points)
Throughout the course, there are biweekly MSAW activities related to teaching and learning math using different forms. Solve and submit it in the dropbox. You are also encouraged to share your solutions of selected MSAWs on the discussion Board.

Textbook Chapter Practice – (100 points, 5 or 10 points each chapter)
Read An & Wu book chapters and do chapter practice and submit it three times: (1) chapters 1-4 practice, (2) chapters 5-8 Practice, and (3) chapters 9-12 practice. The questions for each chapter are posted in the Assignment folder in modules and in the dropbox on BeachBoard.

Fieldwork (100 points) – Alternative Mode for 10 Hours of Fieldwork
Part 1: Math Video Lesson Review and Reflection (20 points) - 2 Hours of Fieldwork.
Select two math video lessons to review and reflect to complete two hours of alternative fieldwork. See the separate instruction sheet for the lesson link, reflection template, and checklist on BeachBoard.

Part 2: SBAC Assessment (20 points) – 3 Hours of Fieldwork (Group Work)
Assess one to three children's mathematics learning using four items from Smarter Balanced Assessment Consortium (SBAC), analyze students' strengths and weaknesses in math learning, develop strategies to correct student error patterns and reflect on learning. See the separate instruction sheet for this assignment on BeachBoard.

Part 3: <u>Presentation of Manipulative Game</u> (20 points) – 2 Hours of Fieldwork
Design a math game using PowerPoint that uses concrete materials to help struggling students make sense of math and achieve proficiency in math. Use a 5 min video to demonstrate how to do play your game. Share your game on Discussion Board. See the separate instruction sheet for this assignment on BeachBoard.

Part 4: <u>Children Literature Book (30 points) -</u> 3 Hours of Fieldwork (Group Work)
(1) Design a children literature book that describes a fun story relating to an integration of health and math in a real-world application with visual pictures and animation features using PowerPoint. Share your book on Discussion Board (10 pts)
(2) Read your book to a child and help them learn math and health knowledge and skills, and write a report of your book reading activity (20 pts)
See the separate instruction sheet for this assignment on BeachBoard.

<u>Showcase of Math Teaching and Learning (20 points)</u>
Develop a showcase of your math learning and teaching site that includes your selected projects from this class at the end of this semester. Weebly.com, wix.com or another free online site can

be used for your showcase. Submit your link to the Dropbox and share it on Discussion Board and on instructor showcase site and/or social media such as Facebook and twitter.

Group Assignment Requirement

To successfully complete group assignments, each student should make your contribution, and your need to do the following: (1) Form a group of four students; (2) Take a turn to be a group leader; (2) Group leader organizes a Zoom meeting to discuss and develop each group assessment; (3) Group leader shares the group work on the Discussion Board and submits the final group work in the Drobox, including,

- Group Completed Assignment
- Link of group meeting and evaluation of each group member's contrition

Zoom Class Meetings (45 points)

Teaching is a collaborative profession, and the interaction synchronously is important for this profession. I will provide weekly online zoom class meetings that will allow us to meet online synchronously to discuss pertinent information on course content, activities, and important assignments. Therefore, class attendance and active participation are expected for all students. You will receive 3 points for each class session attended for a total of 15 classes, for a total of 45 points. If you have an emergency and cannot make an online meeting, please let me know. You can watch the meeting recording at your convenient time, and submit a page of summary within a week for the attendance points.

Grading/Course Credit

All assignments MUST be submitted on the due date.

Pre- and Post-PCK Questionnaires	30 points
Introduction on Discussion Board	5 Points
Unit of Study	20 points
STEAM Task	20 points
Signature Assignment	20 points
Fieldwork Journal – 2 Hours of Fieldwork	20 points
SBAC Assessment – 3 hours of Fieldwork	20 points
Presentation of Manipulative Game – 2 Hours of Fieldwork	20 points
Children Math Literature Book – 3 Hours of Fieldwork	30 points
Chapter Practices	100 Points
MSAW	35 points
Showcase	20 points
Math at the Beach Participation	10 points
Zoom Meeting Attendance	45 points
Total points possible:	395 points

A final course grade is earned based upon the following point scale:

356 - 395	A
316 - 355	B
277 - 315	C
237- 276	D
0 - 236	F

EDEL 462 Course Calendar Spring 2021

Module	Topic	Reading and Watching	Assignment and Due Date		Where to Submit	Point
Module 1 Intro.	-Overview of the Course -Introduction of CCSSM from CA Framework	- CA Framework for Math: Cover, Introduction -Videos: CCSSM	Discussion Board: Introduction Pre-PCK Questionnaire	1/24 1/24	Discussion Dropbox	5 15
Module 2	-Teaching CCSSM -- Linking theory and research to teaching -Unpacking CCSSPM	-CA Math Framework: Overview -An & Wu Chapter 1 -Video: CCSSMP	MSAW1	1/31	Dropbox	5
Module 3	-Planning Standards-Based Math Lessons	-Math Framework: Instructional Strategies -An & Wu Chapter 2 -Video: Lesson Planning	Unit Lesson Study (Group Work) Share it on Discussion Board	2/7	Dropbox	20
Module 4	-Assessment in Teaching Math	-Math Framework: Assessment -An & Wu Chapter 3 -Video: Assessment	MSAW2	2/14	Dropbox	5
Module 5	-Technology in Teaching Math -STEAM Integration	-Math Framework: Technology in Teaching Math -An & Wu Chapter 4 -Video: (1)Technology in Teaching; (2) STEM Integration	STEAM Task (Group Work) Share it on Discussion Board	2/21	Dropbox	20
Module 6	-Design differentiated instruction for English Learners -Using MSA for Early Number Development	-CA Math Framework: Transitional Kindergarten, Executive Summary -Math Framework: Universal Access; Adaptations for ELLs -An & Wu Chapter 5 -Video: (1) Supporting ELLs; (2) Early Math Learning	An & Wu Book Practice, chapters 1-4 MSAW3	2/28 2/28	Dropbox Dropbox	20 5
Module 7	-Design accommodations for Special Needs Students -Using MSA for Whole Number Concepts and Operations	-Strengthening Discussion -Second Grade "Professors" - Using Formative Assessment to Drive Learning -An & Wu Chapter 6 -Video: (1) Accommodation for Diverse Students; (2) Teaching Whole Numbers	Children Literature Book (Group Work) Share it on Discussion Board)	3/7	Dropbox	30
Module 8	-Demonstrating strategies of teaching to the CCSSM -Using MSA for Fraction Concepts	-Math Framework: Instructional Strategy Chapter -An & Wu Chapter 7 -Video: (1) Teaching Strategy; (2) Teaching Fraction Concepts	MSAW4	3/14	Dropbox	5
Module 9	-Growth Mind Set in Math -MSA for Fraction Operations	-Math Framework Related Chapters -An & Wu Chapter 8 -Video: (1) Growth Mindset; (2) Teaching Fraction Operation	An & Wu Book Practice, chapters 5-8 MSAW5	3/21 3/21	Dropbox Dropbox	20 5
Module 10	-Designing Instruction for students to actively think critically -Using MSA for Fraction Operations	-Math Framework Related Chapter -An & Wu Chapter 8 -Video: Question Strategies; (2) Teaching Fraction Operation	Signature Assignment	3/28	Dropbox	40

Module 11	Using concrete models and visual representations – -Using MSA for Decimals	-Math Framework Related Chapter -An & Wu Chapter 9 -Video: (1) Using Concrete and Visual Models; (2) Decimals	Math Manipulatives Share it on Discussion Board	4/11	Dropbox	20
Module 12	-Creating and Maintaining effective environments -Using MSA for Ratio, and Proportional Relationship	-Math Framework Related Chapter -An & Wu Chapter 10 -Video: (1) Effective Environments; (2) Teaching Ration and Proportion	SBAC Assessment (Group Work) MSAW6	4/18 4/18	Dropbox Dropbox	20 5
Module 13	-Observation and participation in in field experiences -Using MSA for Geometry and Measurement	-Math Framework Related Chapter -An & Wu Chapter 11 - Video: Teaching Geometry and Measurement	Fieldwork Journal: Math Video reflection	4/25	Dropbox	20
Module 14	-Using MSA for Algebra and Algebra Thinking -Continual Professional Development	-Math Framework Related Chapter -An & Wu Chapter 12 -Video: Algebra and Algebra Thinking	An & Wu Book Practice, chapters 9-12 MSAW7	5/2 5/3	Dropbox Dropbox	40 5
Module 15	Final Exam Week Assessment Results Sharing	Showcase Sharing	Showcase Share it on Discussion Board Post- PCK Questionnaire	5/9 5/16	Dropbox Dropbox	20 15
	Math at the Beach Participation			TBD		10
	Zoom Attendance					45
	Total Points Possible					395 points

Course Policies

Class Participation

Your participation is critical to our collective success. Successful student participation includes but not limited to:

- Participating in Zoom meetings and 2021 Math at the Beach
- Participating in BeachBoard Discussions
- All discussion board postings are due on the date indicated in the course calendar. The discussion board forum will be closed after the due date so **late postings cannot be accepted.**

Communication Strategy

Throughout this online course, the instructor will communicate with students regularly through email and the discussion board. Students will communicate with the instructor through Questions for the Instructor on BeachBoard and via email. The instructor will respond to each email from students within 24 hours. Students will interact communicate with each other through the discussion board on BeachBoard. Participation in discussion boards will be assessed by the quality of the thinking reflected in postings.

Quality Criteria for Written Assignments
Assignments must be typed or word-processed and submitted to the dropbox. Accuracy of spelling, grammar and punctuation, and final presentation form will be considered.

Late Assignments
All assignments are due on or before the date listed in this syllabus and should be submitted to the Dropbox or Discussion Board. The Dropbox and Discussion Board will be available until the due date. If you have a late assignment that you want to submit, you will need to email the professor and request that the Dropbox or Discussion Board be re-opened, but keep in mind that they will be assessed a 10% penalty for **each day** that they are late.

E-mail
The CSULB campus email account, <first.lastname@student.csulb.edu>, is the default avenue of communication at CSULB. Active use of your CSULB campus email is essential for sending and receiving information related to this course and for university-wide business. Please be sure that your BeachBoard account is set to use your university campus email account. For assistance, contact the CSULB Technology HelpDesk (phone# 562-985-4959 or helpdesk@csulb.edu), also at http://www.csulb.edu/divisions/aa/academic_technology/thd/ .

Please check your email regularly and to keep your email address current. In the event of technical breakdowns only, students may email assignments to the instructor.

Statement Regarding Students with Disabilities

Students with a disability or medical restriction who are requesting a classroom or academic accommodation should contact the Bob Murphy Access Center (BMAC) located in the Student Success Center, #110, or by phone at 562-985-5401 or via email at *BMAC@csulb.edu*. The BMAC will work with the student to identify a reasonable accommodation in partnership with appropriate academic offices and medical providers. We encourage students to reach out to BMAC as soon as possible. It is the student's responsibility to notify the instructor in advance of the need for accommodation related to a university-verified disability.

University Policy

Institutional Academic Policy
http://www.csulb.edu/divisions/aa/research/our/information/policies/cheating/
Standards of appropriate online behavior will be maintained.

Withdrawal Policy: See University Schedule of Classes and/or University Catalog.

University Support Services on Campus

Student Affairs Services and Programs for Students
http://web.csulb.edu/divisions/students/programs.html

Student Affairs: Student Emergency Intervention and Wellness Program
http://web.csulb.edu/divisions/students/studentdean/emergency_grant/
The CSULB Student Emergency Intervention and Wellness Program (part of the *Basic Needs Program*) is a comprehensive initiative that identifies and immediately serves some of

CSULB's most at-risk students, which include our displaced students, food insecure students and students experiencing an emergency or crisis, such as the following:

Student Emergency Grant
The Meals Assistance Program (Feed a Need)
Short-Term Emergency Housing Program

Criteria for eligibility include: Be an enrolled CSULB student; Be able to demonstrate an urgent financial need (Supporting documentation is helpful where appropriate); and Must have exhausted all sources of financial assistance and aid.

Sexual Assault, Rape, Dating/Domestic Violence, & Stalking

Title IX prohibits gender discrimination, including sexual harassment and sexual misconduct. If you have experienced sexual harassment, sexual assault, rape, dating/domestic violence, or stalking, the campus confidential Victim's Advocate is available to help. Jaqueline Urtez (e: advocate@csulb.edu, p: (562) 985-2668) can provide **free** and **confidential** support, accommodations, and referrals for victims without having to report the assault to campus authorities. While students are welcome to discuss assaults with faculty, both faculty and teaching assistants are mandatory reporters who are required to report all incidents of sexual harassment/misconduct to the Title IX office for follow-up and possible investigation. Students who do wish to report the assault for possible investigation may contact the confidential victim's advocate, who can help them through the reporting process, or they can report the assault directly to the Title IX Office by completing an online reporting form at https://www.csulb.edu/equity-diversity/title-ix or contacting the Office of Equity & Diversity at OED@csulb.edu