

**E ED 565M: Mathematics Curriculum and Methods
Fall 2024**

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Michael D. Eisner College of Education Conceptual Framework

The faculty of the Michael D. Eisner College of Education, regionally focused and nationally recognized, is committed to **Excellence through Innovation**. We believe excellence includes the acquisition of professional knowledge, skills, and dispositions and is demonstrated by the growth and renewal of ethical and caring professionals—faculty, staff, candidates—and those they serve. Innovation occurs through collaborative partnerships among communities of diverse learners who engage in creative and reflective thinking. To this end we continually strive to achieve the following competencies and values that form the foundation of the Conceptual Framework.

1. We value academic **excellence** in the acquisition of professional knowledge and skills.
2. We value the use of **evidence** for the purposes of monitoring candidate growth, determining the impact of our programs, and informing ongoing program and unit renewal. To this end we foster and culture of evidence.
3. We value ethical practice and what it means to become **ethical and caring professionals**.
4. We value **collaborative partnerships** within the College of Education as well as across disciplines with other CSUN faculty, P – 12 faculty, and other members of regional and national educational and service communities.
5. We value diversity in styles of practice and united in a dedication to acknowledging, learning about, and addressing the various strengths, interests, and needs of **communities of diverse learners**.
6. We value **creative and reflective thinking** and practice.

Course Description

This course addresses the skills and understandings that Preschool Credential candidates and Multiple Subject Credential candidates need in order to effectively plan, implement and evaluate instructional programs in mathematics for diverse student populations that reflect the California Preschool Foundations and California Mathematics Framework and Academic Content Standards. This course is designed to provide teacher candidates with models of pre- and post-assessment and instruction consistent with our current understanding of learning processes, opportunities to develop related process skills, and skills in implementing instructional models. The course helps teacher candidates develop strategies for teaching preschool and elementary students of various cultural and linguistic heritages, developmental levels, learning styles and special populations to ensure all children equal access to the core curriculum.

California Teacher Performance Expectations (TPEs)

TPE 1: Engaging and Supporting All Students in Learning

A. Making Content Accessible

1. Understand the patterns of development of students' mathematical abilities and their implications to the design of a balanced and comprehensive preschool-Grade 8 mathematics curriculum.
2. Use varied instructional strategies and materials, e.g., discussion, manipulatives, physical models, graphical representations, media and technology, in a manner appropriate to the design of learning experiences that promote student motivation, computational skill, concept understanding, and problem solving abilities that address the CCSS-M.
3. Understand how to deliver a comprehensive program of rigorous instruction that includes reading, writing, speaking and listening to develop student skills in using academic language specific to mathematics and also to facilitate student interactions to develop communication skills in reasoning, constructing viable arguments, and critiquing the reasoning of others.

B. Student Engagement and Developmentally Appropriate Teaching Practices

4. Design daily preschool-Grade 8 mathematics instruction that:
 - ☐ Is developmentally appropriate to make content accessible to all students
 - ☐ Explicitly communicates the purpose and objectives of lessons to students
 - ☐ Is relevant to students' needs and interests
 - ☐ Provides for the active and equal participation of all students
 - ☐ Provides for sharing and evaluation of differing points of view
 - ☐ Extends students' thinking through stimulating questions and challenging ideas
 - ☐ Models the qualities of a secure mathematics learning environment
 - ☐ Is differentiated relative to the needs of students with atypical development
 - ☐ Extends concrete thinking and fosters abstract reasoning and problem-solving skills

C. Demonstrates Understanding of Appropriate Practice for English Language Learners

5. Apply pedagogical theories, principles and practices in promoting student development of mathematical academic language, comprehension, and knowledge. Candidates allow students to express mathematical meaning in a variety of ways, including in their first language, and make learning strategies explicit.

TPE 2: Creating and Maintaining Effective Environments for Student Learning

D. Instructional Time & Social Environment

6. Design instruction that demonstrates appropriate use of instructional time to maximize student learning, and that includes specific strategies for managing routine tasks and lesson transitions.
7. Create a positive climate for learning and a sense of community that promotes student effort by emphasizing collaborative activities and joint problem solving.

TPE 3: Understanding and Organizing Subject Matter for Student Learning

E. Specific Pedagogical Skills for Math Instruction

8. Facilitate the students' development of knowledge and skills to use problem solving, reasoning and proof, communication, representation, and connections in real-world situations.
9. Facilitate the application of adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition.
10. Critically examine the state-adopted preschool-Grade 8 Common Core State Standards in light of children's natural development of mathematical skills, concepts, and reasoning.
11. Develop critical thinking in mathematics by following the Common Core Standards for Mathematical Practices. Develop an appreciation for mathematics as a mode of thinking and a strategy of inquiry and develop positive attitudes towards mathematics and teaching of mathematics. These specific pedagogical skills are to:
 - ☐ Promote positive classroom interaction, collaboration, and written and oral communication as students construct logical arguments and sound reasoning
 - ☐ Promote student curiosity, flexibility, and persistence in problem solving
 - ☐ Encourage multiple approaches to problem solving

- ☐ Provide discussion of different problem solutions, making and testing conjectures.

TPE 4: Planning Instruction and Designing Learning Experiences for Students

F. Learning about Students

12. Identify and incorporate the elements and practices of a mathematics learning environment in planning the mathematics curriculum, that,
 - ☐ Establishes clear expectations for student behavior
 - ☐ Promotes intellectual risk-taking in a secure environment
 - ☐ Promotes positive attitudes towards mathematics
 - ☐ Promotes caring, respect, and fairness
 - ☐ Develops relevant, differentiated instruction based upon varied student needs, such as language, cultural backgrounds, exceptionalities, and developmental learning needs
 - ☐ Correlates learning experiences to students' cultural backgrounds, experience, and interests.

G. Instructional Planning

13. Demonstrate the ability to understand and teach the progression of the state-adopted preschool – Grade 8 Common Core State Standards for Mathematics and strategically plan and schedule instruction to ensure that students meet or exceed the standards.
14. Identify the elements of a comprehensive instructional plan for preschool-Grade 8 mathematics instruction in accordance with state-adopted Common Core State Standards that:
 - ☐ Incorporates explicit models of instruction based on sound theory and research that is appropriate to the purpose and content of the lesson to help students meet or exceed grade level expectations
 - ☐ Uses the vertical alignment of mathematics curriculum to plan sequenced instruction
 - ☐ Includes varied measures for assessing student progress during instruction
 - ☐ Based on assessment data, classroom observation, and reflection, candidates identify students who need specialized instruction, including promising students and/or students with physical disabilities, learning disabilities, atypical development, or health conditions requiring instructional adaptations.

TPE 5: Assessing Student Learning

H. Monitoring Student Learning During Instruction

15. Demonstrate effective use of multiple measures for progress monitoring throughout mathematics instruction to determine whether all students, including English Learners and students with atypical development, are understanding content and making progress toward academic standards. Candidates anticipate, check for and address common misconceptions and identified misunderstandings and act upon this information during instruction.

I. Interpretation and Use of Assessments

16. Become familiar with a variety of formal and informal assessment strategies, as well as, formative and summative assessments, at varying levels of cognitive demand to determine students' progress and plan instruction, e.g., pre-assessments, summative benchmark tests, diagnostic instruments, and performance-based exercises.
17. Know how to familiarize students with the format of the state-adopted assessment program and how to accurately interpret assessment results of individuals and groups in order to develop and modify instruction.
18. Understand how to modify assessment instruments appropriately.
19. Identify strategies and design activities to promote student self-assessment and goal setting in relation to their progress and achievement in the mathematics curriculum.

TPE 6: Developing as a Professional Educator

20. Evaluate their own mathematics content knowledge against the state-adopted Common Core State Standards and establish professional goals for increasing subject matter knowledge and teaching effectiveness.

TPE 7: Effective Literacy Instruction for All students

21. Plan and implement evidence-based integrated mathematics and literacy instruction grounded in an understanding of applicable literacy-related academic standards and the themes of the California English Language Arts/English Language Development Framework (Foundational Skills, Meaning Making, Language Development, Effective Expression, and Content Knowledge) and their integration for preschool to Grade 8 students.
22. Asset-based pedagogies, inclusive approaches, and culturally and linguistically affirming and sustaining pedagogies; literacy development in languages other than English
23. Provide integrated mathematics and literacy instruction for all students that is active, motivating, and engaging; responsive to students' age, language and literacy development, and literacy goals; reflective of family engagement, social and emotional learning, and trauma-informed practices; and based on students' assessed learning strengths and needs, analysis of instructional materials and tasks, and identified academic standards.
24. Meaning making based on prior knowledge using complex and literary and informational texts; addressing comprehension, higher order cognition, reasoning, perspective taking across disciplines.
25. Promote students' content knowledge by engaging students in mathematics instruction that integrates reading, writing, listening, and speaking in discipline-specific ways, including through printed and digital texts and multimedia, discussions, experimentation, hands-on explorations, and wide and independent reading. Teach students to navigate increasingly complex literary and informational texts relevant to the discipline, research questions of interest, and convey knowledge in a variety of ways. Promote digital literacy and the use of educational technology, including the ability to find, evaluate, use, share, analyze, create, and communicate digital resources safely and responsibly, and foster digital citizenship.

Course Assignments

All major assignments for this course must be completed in a professional manner, i.e., typed, edited, free of mechanical and spelling errors, grammatically correct and submitted on time. Further, each assignment must meet all the requirements as delineated in the description of the assignment.

Assignments	Format	Due	Points
#1. Analysis of Teaching 6.1	Written Reflection Written Reflection	Week 3 Week 16	15 15
#2. Number Talk Rehearsal 2.2, 2.6, 3.2, 3.3	Performance	Week 5-6	30
#3. Modeling Algorithm 3.2, 3.3, 3.6, 3.7, 3.8	Performance	Week 6	30
#4. Designing a Culturally Relevant Math Task 1.1, 1.3, 1.5, 3.1, 4.1	Written Assignment Performance & Reflection	Week 8 Week 9	30 30
#5. Lesson Plan 3.1, 3.2, 3.7, 4.1, 4.5, 4.8	Written Assignment	Week 10	60
#6. Eliciting and Interpreting Student Thinking (EIST) 1.1, 1.3	Performance Written Reflection	Week 12 Week 13	30 30
#7. Leading a Whole-Group Discussion 1.1, 1.3	Performance Written Reflection	TBD TBD	30 30
#8. Assessment Plan 5.1, 5.2, 5.5, 5.6, 5.7, 5.8	Written Assignment	Week 15	60
Participation 6.1	Throughout the course		60
Total			450

An assignment will be considered late if it is not turned-in on due. Alert me by email if you have extenuating circumstances in advance. You are expected to uphold the value of academic integrity. Any academic dishonesty and misconduct (e.g., cheating or plagiarism) cannot be tolerated and accepted for

this course. Cheating or plagiarism can also lead to you being expelled or suspended from CSUN and/or special program (see Section 41301, Title 5, California Code of regulations). It is your responsibility to read and understand academic dishonesty as described here: <https://catalog.csun.edu/policies/academic-dishonesty/>

Your final grade will be based on the percentage of points you have earned relative to the maximum points possible (100). Percentages will be translated into letter grades using the following system:

A	100-95%	B+	89.99-87%	C+	79.99-77%	D+	69.99-67%	F	< 60%
A-	94.99-90%	B	86.99-83%	C	76.99-73%	D	66.99-63%		
		B-	82.99-80%	C-	72.99-70%	D-	62.99-60%		

edTPA (Performance Assessment for California Teachers)

The California Commission on Teacher Credentialing requires that every teacher candidate should pass a performance assessment to earn a Multiple Subject credential. The edTPA Performance Assessment consists of four tasks. This course is designed to help you be successful in completing the Mathematics Assessment Task 4: Assessing Students' Mathematics Learning. The assignment in this course will help you develop a formative assessment of student learning, analyze student work samples, and design a re-engagement lesson focused on student needs. Under California law, you cannot earn a Multiple Subject credential until all components of the edTPA Performance Based Assessment are passed.

Course Policies

Attendance and Participation

All students are expected to attend each class. Student absences are considered excused for the following reasons: religious observances, personal illness, family emergencies, or other serious situations beyond the control of the student (e.g., extreme weather event or natural disaster). If you have those extenuating circumstances, contact me as soon as possible and prior to class. For the excused absences, you will be requested to submit an official document or letter to prove those extenuating circumstances (e.g., doctor's notes). Attendance will be taken at each class session.

Active participation is defined as completing reading assignments, being on time and ready to learn, taking an active role in discussions, collaborating well with others, and being attentive in class. Your participation in our class activities and discussions is important not only for your own learning, but also for the learning of others. Sharing your ideas and questions with the group, as well as responding to those of your classmates, are fundamental to our work together. Appropriate use of electronic devices is also a part of your participation in our class. Non-instructional texting, phone calls, social networking, shopping, and other non-instructional use of these devices are not acceptable in this class at any time. Please let me know if there is an emergency that affects your need for using a phone during class time. You may earn up to 4 points toward participation for each class session.

- ❑ Maintaining professional dispositions (e.g., being on time and staying for the entire class; being present and attentive; non-instructional use of electronic devices; completing the assigned readings)
- ❑ Contributing to discussion by actively sharing ideas, asking questions, and making comments

To get a full credit of participation for the class session you missed with excused absences, you need to submit a 2-page summary of the topics covered and present the materials to the instructor before the next class session starts. If you miss two class sessions with unexcused absences, you may earn only 50% of the total possible participation score. If you miss three class sessions with unexcused absences, you may earn only 25% of the total possible participation score. If you miss four class sessions with unexcused absences, you may earn 0% of the total possible participation score. If you miss five class sessions with unexcused absences, you cannot successfully complete this course. If you miss more than 20 minutes of each class section twice, it counts as one absence.

Professional Dispositions

The Department of Elementary Education has adopted a process for ensuring that all CSUN students uphold standards of knowledge, performance, and professional dispositions recognized by the education

profession. Obtain detailed information about the list of Qualities Important to Future Teachers and Educational Professionals, the involuntary delay/withdrawal process, the Concern form, and student appeals, at http://www.csun.edu/education/eed/delay_withdrawal/index.html

A list of dispositions that are important to future teachers and educational professionals is found below:

A. Personal qualities important to the teaching/education profession

Possesses integrity, accepts responsibility, is highly motivated, evidences high academic achievement, displays perseverance, takes initiative, exhibits self-control, shows maturity of judgment, is punctual and reliable, demonstrates warmth and advocacy for children, and presents a professional appearance and demeanor.

B. Qualities important to collaboration

Establishes rapport with others, assumes appropriate roles in the collaborative process, works well with others and communicates respectfully, demonstrates effective communication skills, values teamwork, demonstrates a respectful appreciation for diverse perspectives, demonstrates a commitment to achieving team goals, and seeks to develop and maintain professional workplace relationships.

C. Commitment to professional growth

Responds appropriately to supervision, reflects on/evaluates strengths and areas for improvement, accepts constructive criticism and suggestions, displays interest and curiosity in the learning process, uses suggestions to improve skills and understanding, values life-long learning, strives to achieve competence and integrity, and is a self-directed learner.

D. Commitment to diversity and social justice

Demonstrates cultural respect and understanding, believes in equal educational/vocational opportunity, displays sensitivity to ethnically, linguistically, cognitively, physically, socially diverse groups and individuals, advocates high and appropriate expectations for all students, and treats all people equally.

E. Commitment to ethical practices

Maintains confidentiality, displays ethical behavior, is honest and trustworthy, abides by legal mandates and ethical responsibilities, uses sound, informed judgment.

Academic Support

A. Disability Resources Available

The California State University does not discriminate on the basis of disability in admission or access to, or treatment or employment in, its programs and activities. Sections 504 and 508 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and various state laws prohibit such discrimination. If you need extra assistance with aspects of this course, please contact the [Disability Resources and Educational Services \(DRES\)](#) or the [National Center on Deafness \(NCOD\)](#). Reasonable and effective accommodations and services will be provided to students if the requests are made in a timely manner and with appropriate documentation in accordance with federal, state, and university guidelines. Please let me know if you need further information or assistance from me in order to facilitate your learning experience. If you would like to discuss your approved accommodation with me, please let me know and we can set up a virtual appointment.

B. Additional Campus Resources and Support

CSUN has a range of resources to support your academic goals, engagement with campus activities and physical and mental health. I encourage you to browse the links below throughout the semester and the rest of your time at CSUN. Please let me know if you would like additional information on any of the resources below. These links are also included on the Canvas site.

C. Academic and Technical Resources

- [Oviatt Library](#) for browsing of books, articles, media and additional academic resources.
- [Learning Resource Center](#) offers tutoring, a writing center, & more.
- [Disabilities Resource Educational Services \(DRES\)](#) for assistance with accommodations.

- CSUN Information Technology (IT) for technology support with Canvas and software related issues. Their office is open for calls/chat M-F from 8am-5pm PST.
- CSUN's Accessibility Policy for more information on CSUN's goal to ensure that campus communication and information technology is accessible to everyone.

Course Materials

Required materials:

Van de Walle, John. A., Karp, K., & Bay-Williams, J. M. (2023). *Elementary and middle school mathematics: Teaching developmentally*. (11th ed.). Boston: Pearson AB.

California Common Core State Standards

California English Language Development Framework Executive Summary

California Dyslexia Guidelines

California Preschool Foundations

* In August 2010, the California State Board of Education adopted the new Common Core Standards along with many other states. You can find these new 2013 adopted standards on the California Department of Education website under *Curriculum and Instruction*. The Common Core Standards can also be downloaded as a PDF file on the CDE website at www.cde.ca.gov/re/cc/. The pertinent standards for K – 5 can be found on pages 1-37 of this 153-page PDF file beginning with the Standards for Mathematical Practice. You will need the CA Common Core Mathematics Standards as you plan your math lesson.

In addition, you will be reading a variety of articles and other materials (e.g., curriculum materials) which will be provided on Canvas, as hard copies, or through a website.

**Tentative Course Schedule
(SUBJECT TO CHANGE)**

	Topics	Readings	TPEs
Week 1	<ul style="list-style-type: none"> <input type="checkbox"/> Introduction <input type="checkbox"/> Norms, expectations, & logistics <input type="checkbox"/> Course overview <input type="checkbox"/> Syllabus review <input type="checkbox"/> A snapshot of elementary mathematics instruction <input type="checkbox"/> Fixed mindset vs. Growth mindset <input type="checkbox"/> Identity wheel activity <input type="checkbox"/> Implicit Association Test (IAT) <input type="checkbox"/> Recognizing your own implicit and explicit biases 		6.2
Week 2	<ul style="list-style-type: none"> <input type="checkbox"/> Exploring what it means to know and do mathematics <input type="checkbox"/> A brief history of U.S. curriculum and standards <input type="checkbox"/> CCSS-M: Key principles and structure, Mathematical content standards, Mathematical practice standards <input type="checkbox"/> Preschool foundations <input type="checkbox"/> Analyzing Teaching: Professional noticing & Discourse moves 	<ul style="list-style-type: none"> <input type="checkbox"/> Read CA Preschool Foundations <input type="checkbox"/> Read CA CCSS-M Standards 	6.7 3.1 4.7
Week 3	<ul style="list-style-type: none"> <input type="checkbox"/> California Mathematics Framework <input type="checkbox"/> ELA/ELD Framework <input type="checkbox"/> Early Math Concepts: Matching, Classification, Comparing, and Ordering or Seriation <input type="checkbox"/> Kathy Richardson's elementary math resources 		7.1
Week 4	<ul style="list-style-type: none"> <input type="checkbox"/> Developing early number concepts and number sense <input type="checkbox"/> Using literature to teach math <input type="checkbox"/> Choral counting and counting collections <input type="checkbox"/> Equity in teaching mathematics <input type="checkbox"/> Content-specific accommodations and modifications 	<ul style="list-style-type: none"> <input type="checkbox"/> Read Van de Walle Ch.7 	7.9 3.2, 1.4, 2.5

	students with special needs and ELLs <input type="checkbox"/> Lesson Plan: Introduction		3.3, 3.5, 4.1, 4.3, 4.4, 4.5
Week 9	<input type="checkbox"/> Developing fraction concepts <input type="checkbox"/> Using AI in planning, teaching, and assessing mathematics	<input type="checkbox"/> Read Van de Walle Ch.14	4.8
Week 10	<input type="checkbox"/> Eliciting and Interpreting Student Thinking (EIST) <input type="checkbox"/> Reflecting on your own teaching practice		7.6, 7.7, 7.8 6.1 7.8 8.4 8.6
Week 11	<input type="checkbox"/> Creating assessment for learning <input type="checkbox"/> Conceptual understanding vs. Procedural fluency <input type="checkbox"/> Evaluation Criteria <input type="checkbox"/> Analyzing student work samples <input type="checkbox"/> Monitoring student learning and designing re-engagement lesson <input type="checkbox"/> Assessment Plan: Introduction		5.1 5.2 5.5 5.6 5.7 5.8
Week 12	<input type="checkbox"/> Developing fraction operations: Addition, Subtraction, Multiplication, division	<input type="checkbox"/> Read Van de Walle Ch.15	
Week 13	<input type="checkbox"/> Developing decimal and percent concepts and decimal computation <input type="checkbox"/> Ratios, proportions, and proportional reasoning <input type="checkbox"/> Rethinking engagement with families and communities <input type="checkbox"/> Communicating students' progress in mathematics	<input type="checkbox"/> Read Van de Walle Ch.16 & Ch.17	6.3, 6.4
Week 14	<input type="checkbox"/> Developing measurement concepts <input type="checkbox"/> Developing geometric thinking and geometric concepts <input type="checkbox"/> Tangrams by incorporating language arts <input type="checkbox"/> Tessellations by incorporating visual arts	<input type="checkbox"/> Read Van de Walle Ch.18 & 19	1.7
Week 15	<input type="checkbox"/> Simulations and peer-coaching <input type="checkbox"/> Wrap-up		3.4 8.6

	<input type="checkbox"/> Review of course <input type="checkbox"/> Reflections: What did you learn?		
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Note: This syllabus is a tentative course outline and is subject to change at the discretion of the instructor. If there are any changes they will be announced and explained in advance in class. Any changes that are made are the responsibility of the students to be aware of.

TPE LINKING LEGEND

TPEs		Class Sessions (Week)
TPE 1	1.1	Assignment #4 (p.4), Assignment #6 (p.4), Assignment #7 (p.4) Assignment #4 (p.4), Assignment #6 (p.4), Assignment #7 (p.4) Week 4 (p.8) Assignment #4 (p.4) Week 14 (p.10)
	1.3	
	1.4	
	1.5	
	1.7	
TPE 2	2.2	Assignment #2 (p.4) Week 4 (p.8) Assignment #2 (p.4)
	2.5	
	2.6	
TPE 3	3.1	Assignment #4 (p.4), Assignment #5 (p.4) Assignment #2 (p.4), Assignment #3 (p.4), Assignment #5 (p.4) Assignment #2 (p.4), Assignment #3 (p.4) Week 15 (p.10) Week 8 (p.9) Assignment #3 (p.4) Assignment #3 (p.4), Assignment #5 (p.4) Assignment #3 (p.4)
	3.2	
	3.3	
	3.4	
	3.5	
	3.6	
	3.7	
	3.8	
TPE 4	4.1	Assignment #4 (p.4), Assignment #5 (p.4) Week 8 (p.9) Week 8 (p.9) Assignment #5 (p.4) Week 2 (p.8) Assignment #5 (p.4)
	4.3	
	4.4	
	4.5	
	4.7	
	4.8	
TPE 5	5.1	Assignment #8 (p.4) Assignment #8 (p.4) Assignment #8 (p.4) Assignment #8 (p.4) Assignment #8 (p.4) Assignment #8 (p.4)
	5.2	
	5.5	
	5.6	
	5.7	
	5.8	
TPE 6	6.1	Throughout the course (p.4) Week 1 (p.8) Week 13 (p.10) Week 13 (p.10) Week 2 (p.8)
	6.2	
	6.3	
	6.4	
	6.7	
TPE 7	7.1	Week 3 (p.8) Week 10 (p.10) Week 10 (p.10) Week 10 (p.10) Week 4 (p.8)
	7.6	
	7.7	
	7.8	
	7.9	