



CALIFORNIA STATE UNIVERSITY, LONG BEACH
 College of Education , Department of Teacher Education
 EDEL 462: Teaching and Learning Mathematics, K – 8 (3 units)
 Spring 2014

Instructor: Désirée Zamorano MA
Office Hours: Mondays 11:45-12:30
Class Dates: January 27th - May 5th

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Office: Ed 2271

Class Hours: Mondays 9:00-11:45am

Required Text:

Tipps, Steve, Art Johnson, and Leonard M. Kennedy. *Guiding Children's Learning of Mathematics*. 12 ed. Belmont, CA: Wadsworth Cengage Learning, 2011.

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

<http://www.cde.ca.gov/be/st/ss/documents/ccssmathstandarداug2013.pdf>

Highly Recommended Resource:

Burns, Marilyn. *About Teaching Mathematics, 3rd Edition, Grades K-8: A K-8 Resource Math Solutions* 2007

Course Description:

Prerequisite: Admission to the Multiple Subject Credential Program.

Learning theories, research, and instructional practices of teaching mathematics to all students in culturally and linguistically 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).

Mission:

The College of Education a 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.

Student Learning Outcomes:

Upon successful completion of the course, students will be able to:

- A. Design instruction for elementary and middle school mathematical content, including the development of mathematics curriculum as outlined in the K- 12 California's Common Core Standards for Mathematics <http://www.cde.ca.gov/re/cc/>
- B. Use the components of specially designed academic instruction in English (SDAIE) as they apply to mathematics, including linking mathematics across the curriculum, connections to prior knowledge, using multicultural materials, matching instruction to the level of student English language proficiency, comprehensible teacher delivery, cooperative learning, using primary language support, and varying assessment.
- C. Plan and demonstrate strategies of teaching to academic content standards that emphasize a comprehensive approach to problem solving, guided discovery, active involvement with

mathematics including everyday mathematical situations, physical materials, and mathematical discourse.

- D. Select technology-based tools to support the learning of mathematics.
- E. Identify the characteristics of contemporary mathematics programs, including principles of education equity, multicultural education, and linguistic diversity.
- F. Demonstrate knowledge of the psychological principles of the teaching/learning process for mathematics content standards.
- G. Diagnose children's learning in elementary mathematics and use variety of assessment techniques.
- H. Apply long and short term planning in field experiences.
- I. 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.

Course and Departmental Expectations:

- Students must maintain a B average in EDEL courses, with no grade lower than a C. Grades of "Incomplete" are given only in cases of grave emergency which are documented.
- No late assignments will be accepted.
- All students are responsible for accessing and downloading electronic information sources for the class.
- All students should be prepared to participate in discussions.
- Students must abide by the policies outlined in The University Catalog. Please become familiar with these policies and standards of conduct.

Attendance and Participation:

Attendance and Participation: This course is designed so that you and your peers have maximum opportunities to discuss and reflect upon the material covered in the course. ***If you miss more than ONE (1) session your grade will be lowered by one-half grade (e.g. A to A-) for each absence thereafter.*** You are responsible for obtaining information about course assignments or course syllabus changes whenever you are absent. ***The syllabus can and will be altered based on student or professor need throughout the semester.*** ***Participation*** in class activities and discussion is expected throughout the semester. This means that you come ***prepared to discuss*** the readings—connecting them to field work and/or life experience.

Grading Policy:

95-100	A	78, 79	C+	Below 65	F
90-94	A-	73-77	C		
88, 89	B+	70-72	C-		
83-87	B	68, 69	D+		
80-82	B-	65-67	D		

Statement Regarding Students with Disabilities:

Students with disabilities who need reasonable modification, special assistance, or accommodations in this course should promptly direct their requests to the course instructor. If a student with a disability feels that modifications, special assistance, or accommodations offered are inappropriate or insufficient, s/he should seek the assistance of the Director of Disabled Student Services on campus.

Required Assignments:

Assignment	Points	Due
Attendance	30	Throughout
Participation	30	Throughout
Responses to reading	20	Throughout
Field Work Assignments: (see hand book for details)	60	Throughout
Technology Assignment	10	Throughout
Grade Level Math Lesson	20	tbd
Children's Math Literature Assignment	10	tbd
Signature Assignment	20	April 28
	200	

1. **Attendance and Participation:** This course is designed so that you and your peers have maximum opportunities to discuss, reflect and apply the material covered in the course. ***If you miss more than ONE (1) session your grade will be lowered by one-half grade (e.g. A to A-) for each absence thereafter.*** You are responsible for obtaining information about course assignments or course syllabus changes whenever you are absent. ***The syllabus can and will be altered based on student or professor need throughout the semester.*** **Participation** in class activities and discussion is expected throughout the semester. This means that you come ***prepared to discuss*** the readings—connecting them to life experience, and/or media items related to education.
2. **Reading Responses due at the beginning of each class.** This assignment will allow you to prepare for the discussions
 - Note important ideas
 - Note quotable quotes that stand out
 - Note connections across reading, or personal experience, or media items.
 - Things to consider...
3. **Field Work Assignments:** Detailed in an additional handout
4. **Technology Assignment:** Purpose: Exploration of online resources/Use Appropriate Tools Strategically. How might incorporating technology introduce, deepen, or extend classroom instructions? Search for a relevant website. Take it for a test drive. Be ready to present your findings to the class. Write up a response to these questions: What Common Core standard was addressed? What big idea or specific skill? How would you use this website? Be sure to upload your website to Beachboard the morning of your presentation, as a resource to others. For me: Write up your findings. Due date: To be assigned.
5. **Grade Level Math Lesson:** Grouped by grade level of field work assignments, you will design and teach a lesson. Purpose: to deepen understanding of instructional design. Details to follow.

6. **Children's Math Literature:** Purpose: to integrate math and literature; to explore relevant resources; to build a personal book list Find and list 5 grade level appropriate texts. Choose one to evaluate. Present to class by responding to the following prompts,

- What concepts does the text explore?
- How would you see yourself using the text?
- Where in your series of lessons would you use it?
- What extensions, if any, can you see?
- What did you enjoy about this book, how do you see it engaging your students?

Upload your recommended book list to Beachboard and hand in to me your write up the day of your presentation. Due Date: to be assigned.

7. **Signature Assignment:** Design a lesson plan that requires using different strategies to engage students in learning and using various assessments to evaluate student learning. ***Details to follow, to be uploaded to TaskStream. Due Date: April 28th hard copy AND uploaded to TaskStream.***

Late work is accepted at the discretion of the instructor, only by prior arrangement, and will have points deducted.

Date	Topics	Assignment	Assignment Due
Jan. 27, 2014	Making Sense and Persevering <ul style="list-style-type: none"> • Introductions • Lowering the affective filter • Problem solving activity and perspective • Taskstream self-enrollment-M2142 • Syllabus overview • Framing of the Common Core • Math and literature 	<ul style="list-style-type: none"> • Quick write • Marilyn Burns excerpt • <i>Guiding Children's Learning of Mathematics</i>. Ch 1 and 2 	<ul style="list-style-type: none"> • Quick write • Presentations
Feb 3 2014	Making Sense and Persevering <ul style="list-style-type: none"> • Math Exploration • Exploration K- 12 California's Common Core Standards for Mathematics http://www.cde.ca.gov/re/cc/ • Mathematical Practice Priorities • Further discussion of FW assignments 	<ul style="list-style-type: none"> • <i>Guiding Children's Learning of Mathematics</i>. Ch 3 and 4 On Beachboard: • Managing Classroom Instruction • The Role of the Teacher 	<ul style="list-style-type: none"> • Response to assigned reading
Feb. 10 2014	Reason Abstractly and Quantitatively <ul style="list-style-type: none"> • Math Exploration • Learning Theories • Teaching for meaning • Conceptual understanding vs. procedural 	<ul style="list-style-type: none"> • <i>Guiding Children's Learning of Mathematics</i>. Ch 5 and 6 On Beachboard: • Teaching Arithmetic 	<ul style="list-style-type: none"> • Field work placement • Letter of introduction (#1) • Response to assigned reading
Feb. 17, 2014	Reason Abstractly and Quantitatively <ul style="list-style-type: none"> • Math Exploration • Designing Instruction 	<ul style="list-style-type: none"> • <i>Guiding Children's Learning of Mathematics</i>. Ch 7 and 8 	<ul style="list-style-type: none"> • FW #2: Description of classroom organization and management • Response to reading • Children's book presentations begin
Feb. 24, 2014	Student Engagement Construct Viable Argument and Critique the Reasoning of Others <ul style="list-style-type: none"> • Math Exploration • Early Number Experiences • Developing Number Sense 	<ul style="list-style-type: none"> • <i>Guiding Children's Learning of Mathematics</i>. Ch 9 and 10 On Beachboard: • Numbers and Operations 	Tech presentations begin <ul style="list-style-type: none"> • Response to reading
March 3, 2014	Collaborative Learning	<ul style="list-style-type: none"> • <i>Guiding Children's Learning of Mathematics</i>. Ch 11 	FW #3: Analysis of Math Curriculum

	Construct Viable Arguments and Critiques the Reasoning of Others <ul style="list-style-type: none"> Math Exploration Numbers and Operations Explorations 	On Beachboard: <ul style="list-style-type: none"> Numbers and Operations Problems 	Grade Level Math lessons begin <ul style="list-style-type: none"> Response to reading
March 10, 2014	Model with Mathematics <ul style="list-style-type: none"> Math Exploration An understanding of multiplication 	<ul style="list-style-type: none"> <i>Guiding Children's Learning of Mathematics.</i> Ch 12 and 13 	FW#4:Math Lesson Observation and Analysis <ul style="list-style-type: none"> Response to reading
March 17, 2014	Model with Mathematics <ul style="list-style-type: none"> Math Exploration An understanding of fractions 	<ul style="list-style-type: none"> <i>Guiding Children's Learning of Mathematics.</i> Ch 14 and 15 	<ul style="list-style-type: none"> Response to reading
March 24, 2014	Technology for Instruction Us Appropriate tools Strategically	On Beachboard	<ul style="list-style-type: none"> Response to reading
March 31, 2014	☺ SPRING BREAK ☺	On Beachboard	<ul style="list-style-type: none"> Response to reading
April 7, 2014	Technology for Learning Use Appropriate Tools Strategically Statistics and Probability Exploration	<ul style="list-style-type: none"> <i>Guiding Children's Learning of Mathematics.</i> Ch 16 	<ul style="list-style-type: none"> Response to reading
April 14, 2014	Attend to Precision Algebraic Thinking and Discussion	On Beachboard	FW#5 <ul style="list-style-type: none"> Response to reading
April 21, 2014	Attend to Precision Decimals Percents Ratios	<ul style="list-style-type: none"> <i>Guiding Children's Learning of Mathematics.</i> Ch 17 	<ul style="list-style-type: none"> Response to reading
April 28, 2014	Formative Assessment Look for and Make Use of Structure Designing Classroom Explorations Geometry	On Beachboard	Signature Assignment
May 5, 2014	Look for and Express Regularity in Repeated Reasoning Metacognition		Field Experience Verification Special Ed Observation

Students who need different or additional accommodations in order to meet the course requirements are invited to meet with me.