Math 71SL Syllabus  
Spring 2008

Classroom Practices in Elementary School Mathematics  
Thursdays, 4:00—5:30 p.m.

Contact Information  
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Instructor of Record: Ted Gamelin

Purpose: To cultivate student interest in the teaching of elementary mathematics that develops conceptual understanding and recognizes the diverse learning styles of children with special needs—such as gifted, limited English, or resource programs. Throughout the course, students will observe classroom teachers, discuss mathematics education issues, explore effective teaching strategies, and be introduced to manipulative lessons that convey these concepts to children. Students will be expected to participate in instruction with a Mentor Teacher and complete at least 30 hours of fieldwork (3hrs/week) in an elementary classroom setting. Reflection and critical analysis, through written assignments and discussions, are key components of the course.

Class meetings: Seminar will meet ten times on Thursdays from 4:00—5:30 p.m. The dates are: April 3rd, April 10th, April 17th, April 24th, May 1st, May 8th, May 15th, May 22nd, May 29th, and June 5th. Active participation is expected.

Placements: The Academic Coordinator, Matt Fox, will handle all scheduling and placements. Local elementary schools with excellent Mentor Teachers have been selected for your placement. All schools are within walking distance or one short bus ride from UCLA. Once you have been paired with another student and placed with a Mentor Teacher, you will be provided with the location information. Contact information for your Mentor Teacher, the elementary school principal, and other students working at your school site will also be provided.

Assignments and Grading:  
• Observations and Reflections: Observe in an elementary classroom at least three hours per week (a total of 30 hours per quarter). Following each observation, complete your assignment on the Online Information System (OIS) WeTeach website, and reflect on focus questions to be used during seminar discussions. (See Observation Protocol and Observation Reflection Guidelines.)  
• Tutoring: Work with your Mentor Teacher to select one target student to tutor for about 15-20 minutes a week. Write a one-page reflection of your growth over time as a teacher as a result of this experience.  
• Readings: Read the four assigned articles. Write a reflection and critical analysis on three of these, and a division problem in response to the fourth. (See Reading Reflection Guidelines.)
• Problems of the Week (POW): Complete the POW assigned for each session. (See POW Guidelines.)

Attendance/Participation: Attend all scheduled classes and participate in discussions and critical analyses on observations, readings, mathematics problems, and other relevant educational issues.

Hands-on Lesson Plan: Work with a partner to develop a manipulative-based lesson (20 minutes is adequate). Your lesson plan will be summarized and presented to your peers (6 to 8 minutes) on either May 29th or June 5th. You may elect to do a shortened version of the lesson or present student work and photos in a PowerPoint or iMovie if you obtain photo release forms. At the discretion of your Mentor Teacher, you may also practice this lesson with the child you are tutoring, a small group, or possibly the entire elementary class. (See Hands-on Lesson Plan Guidelines)

Assignments and Grading: All observation reflections must be recorded each week on the OIS no later than 8:00 p.m. each Wednesday. Problems of the Week (POWs) and reading reflections may be e-mailed to the instructor ahead of time, or turned in by the due date after class discussions. Work receiving a one (1) must be revised to receive credit. Math 71SL is a two-unit pass/no pass course.

Preparation: Before you engage in your work at the elementary school, there will be an introductory meeting where you will meet your Mentor Teacher and other faculty members from your placement school. This meeting will allow you to become acquainted with your Mentor Teacher and the community in which you will be working. In addition, we will discuss in detail the roles, responsibilities, and expectations of everyone involved in this partnership between UCLA and the elementary schools.

Meaningful Work: While the type of work you engage in at the elementary school will vary, you are expected to observe and assist your Mentor Teacher in mathematics, science, and other subjects. Possible activities include helping your Mentor Teacher prepare for instruction or class activities, observing, assisting individual students or small groups, and teaching individuals, small groups, or the whole class. You are a guest in the assigned school and as a guest, agree to support school policies and personnel, follow all rules and regulations, and conduct yourself as a professional educator in your manner, dress and communication. You should follow the Observation Protocol Guidelines at all times.

Summary of Course Requirements
• Record a total of 30 observation hours and enter eight Classroom Observation Reflections on the Online Information System (OIS).
• Participate in weekly seminar discussions
• Write three Reading Reflections and a division problem in response to articles
• Write solutions and reflect on the process for each of eight POWs
• Write a one-page reflection on your growth over time as a teacher, due June 5th
• Write a hands-on Lesson Plan and share lesson results with seminar class

Observation Protocol Guidelines

• Arrangements have been made for Math 71SL students to observe at various elementary schools near UCLA.
• Schools are within walking distance or short bus commute.
• Check in at the main office each time you visit the school site and receive a visitor’s pass.
• As representatives of UCLA and as prospective teachers, and under the guidance of the UCLA instructor, you must be professional at all times when dealing with school staff and elementary students. This includes being polite and courteous, being non-judgmental, and dressing appropriately.
• All observation reflections are to be entered into the OIS.
• Ask the teacher you observe to sign the Observation Record form each week.
• You will be provided focus questions to consider for each of the observations.

Explanation of “Service Learning”

This is a “service learning” course and requires that you have a working knowledge of service learning.
• It is a method whereby students learn and develop through active participation in thoughtfully organized service that is conducted in and meets the needs of communities.
• It is coordinated with an elementary school, secondary school, or community-based organization.
• It helps foster civic responsibility.
• It is integrated into and enhances the academic curriculum of the students, or the education components of the community service program in which the participants are enrolled.
• It provides structured time for students or participants to reflect on the service experience.

Observation Reflection Guidelines

• Must be entered into the WeTeach website: https://tepd.ucop.edu/weteach
• Must be received by instructor each Wednesday no later than 8:00 p.m.
• Writing is reflective, analytical, and includes proper grammar, punctuation, and spelling.

Reading Reflection Guidelines

• Reading Reflections are to be type written, double-spaced, and one to two pages in length. The document may be sent electronically to the instructor.
• Reflections are to reflect professional writing and academic language, including use of proper spelling, punctuation, and grammar.
• Reflections are to address the following:
  o At least two ideas you gained from the reading.
  o A possible question that arose for you while reading this piece.
  o A general reflection and critical analysis, including any conclusions drawn based on the article.

Problems of the Week (POW) Guidelines

• Solve the problem using different methods, including pictures or manipulatives.
• Write a narrative on how you approached the problem and how you solved it describing your thought processes and any patterns you found.
• Discuss any challenges you faced and how you addressed them.

One-page Reflection on Your Professional Growth

• At the end of the quarter, write a one page final reflection on your professional growth over time.
  o What did you discover about yourself as a teacher-learner?
  o How did you feel about your tutoring experience with a target student?
  o Reflect on your overall experience during this course.

Hands-on Lesson Plan Guidelines

• Work with a partner to develop a 20-minute lesson plan that incorporates manipulatives.
  o Lesson Plan may be an extension of a seminar content lesson or other manipulative-based activity of your choice (approved by your Mentor Teacher).
  o Be sure to cite your sources if you use material developed by others.
  o Lesson must be based on either the California or NCTM mathematics standards for your grade level.
  o Basic Lesson Plan format must include: your name, description of activity, grade level, materials needed, standards being addressed, suggested procedure, informal assessment ideas, and your source if these are not original ideas.
• Practice this lesson with the student you are tutoring. (You and your Mentor Teacher may elect for you to present this lesson to the entire class or a small group instead.)
• Sign up with your partner to present your reflections and a summarized version of the lesson to your peers (6 to 8 minutes) on either May 29th or June 5th.

SPRING QUARTER TOPICS

Session 1: April 3, 2008 (General Overview)
• Problem of the Day Icebreaker “Colored Stairs” from United We Solve
• Introductions; Overview of Math 71SL and Spring Quarter Expectations
• Good teaching begins with being professional.
• Mathematics content: Positive and negative integers with cups and chips; why “magic numbers” work (grades 2-6)
• Assignments
  o Problem of the Week (POW) due April 10th, The Grandmas
  o Carefully read handout: “UCLA California Teach Classroom Assistant Guidelines”
  o Meet Mentor Teacher. Begin classroom observations and meet the students
  o Observation questions:
    ▪ How does the teacher interact professionally with the children?
    ▪ How does the teacher make each child feel welcomed?
Work with your Mentor Teacher to select a target student to tutor over the course of the quarter.

- Who is this child? Special interests?
- What instructional challenges does the child offer? (Gifted? ELL? Resource? Spatial-visual?)

Be prepared in seminar next week to discuss your experiences.

Session 2: April 10, 2008 (Student Involvement)

- Introduction of the Online Information system (OIS) and discussion of classroom observations—questions, answers, reflections.
- **Good teaching begins with student involvement**
- Mathematics Content: Introduction to pattern blocks as a classroom manipulative for understanding multiplication and division of fractions (grades 3-6)
- Review Problem of the Week (*The Grandmas*)
- Assignments
  - Problem of the Week (POW) due April 10th, *The Taxman*
  - Write a division of fractions problem for the article: *Assessing Understanding through Problem Writing, Division by ½*; NCTM
  - Observation Reflection #1 entered into the OIS by Wednesday, April 16th at 8:00 p.m.
    - How does the teacher spark the students’ natural curiosity or interest in the lessons?
    - How does the room environment support or enhance these curiosities?
  - Continue tutoring your target student
    - How will you involve this student in your tutoring sessions and spark his or her interest?

Session 3: April 17, 2008 (Making Connections)

- **Good teaching begins with making connections.**
- Mathematics Content: Linear functions with pattern blocks (grades 1-6); student iMovie of “Linear and Nonlinear Functions”
- Discussion of classroom observations
- Review Problem of the Week: *The Taxman*
- Assignments
  - Problem of the Week (POW) due April 24th, *April is the 4th Month*
  - Observation Reflection #2 entered into the OIS by Wednesday, April 23rd at 8:00 p.m.
    - How does the teacher make connections with themes or unit concepts?
    - What extensions does the teacher offer for students who finish early or need extra support?
  - Continue tutoring your target student
    - How are you clarifying this student’s misunderstandings or enhancing his or her learning?
    - How are you building on the child’s prior knowledge?

Session 4: April 24, 2008 (CA Mathematics Framework)

- **Teaching to the California Mathematics Framework; Standards and the Big Ideas**
- Mathematics Content: 3-D Puzzles and Isometric dot paper (grades 3-6)
Discussion of classroom observations
Review Problem of the Week: March is the 4th Month
Assignments
  o Problem of the Week (POW) due May 1st, Squares for a Knight
  o Observation Reflection #3 entered into the OIS by Wednesday, April 30th at 8:00 p.m. Observation questions:
    ▪ What mathematics standards is the teacher focusing on?
    ▪ How does the teacher make these concepts understandable and interesting for all students? (Gender? Cultural interests? Special needs?)
  o Write Reading Reflection #1: Chapter 3: Developing Understanding in Mathematics, Elementary and Middle School Mathematics
  o Continue tutoring your target student
    ▪ What new understandings has the child developed?
    ▪ How is the child justifying his or her answers?
    ▪ Is the child’s self-concept about his or her ability to learn mathematics changing?

Session 5: May 1, 2008 (Hands-on Strategies)
  • Good teaching uses hands-on strategies.
  • Mathematics Content: Similar shapes, growth patterns, and nonlinear functions (grades 3-6)
  • Discussion of classroom observations
  • Review Problem of the Week: Squares for a Knight
  • Assignments
    o Problem of the Week (POW) due May 8th, Game of Poison
    o Write Reading Reflection #2: Chapter 6: Planning in the Problem-Based Classroom, Elementary and Middle School Mathematics
    o Observation Reflection #4 entered into the OIS by Wednesday, May 7th at 8:00 p.m. Observation questions:
      ▪ How does the teacher use manipulatives in the mathematics lessons?
      ▪ What evidence do you see that the children understand the concepts?
    o Continue tutoring your target student
      ▪ What manipulatives are you using in your lessons?
      ▪ What evidence do you have that the child understands the concepts you are teaching?

Session 6: May 8, 2008 (Students Construct Meaning)
  • Students learn best when they construct their own meaning.
  • Mathematics Content: Finding the area on geoboards (grades 1-6)
  • Discussion of classroom observations
  • Review Problem of the Week: Game of Poison
  • Assignments
    o Problem of the Week (POW) due May 15th, A Pirate’s Treasure
    o Write Reading Reflection #3: Chapter 7: Teaching All Children Mathematics, Elementary and Middle School Mathematics
    o Observation Reflection #5 entered into the OIS by Wednesday, May 14th at 8:00 p.m. Observation questions:
How does the teacher determine that students are ready to move on to the next steps? Is there a district pacing plan?
- Is every child engaged in the activity?
  - Continue tutoring your target student
    - Are there still some background ideas your student is missing?
    - How are you challenging the child and still making sure the activities are not out of reach?

Session 7: May 15, 2008 (Teaching ALL Students)
- **Teaching ALL children mathematics**
- Mathematics Content: Geometry—volume and constructing nets
- Discussion of classroom observations
- Review Problem of the Week: *A Pirate’s Treasure*
- Answer questions regarding Lesson Plan assignment
- Assignments
  - Problem of the Week (POW) due May 22nd, *Sailors and Coconuts*
  - Observation Reflection #6 entered into the OIS by Wednesday, May 21st at 8:00 p.m. Observation questions:
    - How does the teacher encourage reasoning and problem solving?
    - What questioning techniques does the teacher use to develop higher-order thinking?
    - How does the teacher empower ALL students to learn and be engaged in the lesson?
  - Continue tutoring your target student
    - How are you developing the child’s higher-order thinking skills?
    - Is the child showing growth as a problem solver?

Session 8: May 22, 2008 (Planning)
- **Good planning leads to good teaching.**
- Mathematics Content: Finding patterns—square numbers and square roots with pattern blocks; Algebraic thinking—Cow pastures (grades 2-6)
- Discussion of classroom observations
- Review Problem of the Week: *Sailors and Coconuts*
- Assignments
  - Final Problem of the Week (POW) due May 29th, *Ice Cream Cones*
  - Write a one-page final reflection on your professional growth during this quarter—due by June 5th.
  - Observation Reflection#7 entered into the OIS by Wednesday, May 28th at 8:00 p.m. Observation questions:
    - What types of questions are being asked during class?
    - Are students given “wait time” before answering?
    - Does the teacher ask the students to justify their answers?
  - Continue tutoring your target student
    - Reflect on your tutoring experience with this child and be prepared to share your experiences in seminar.

Session 9: May 29, 2008 (Problem-based Classrooms)
- **Planning in the problem-based classroom.**
- Begin presenting pair-shared lesson plans (6 to 8 minutes in length)
- Final reflections on classroom observations
• Review Problem of the Week: *Ice Cream Cones*
• Assignments
  – **Observation Reflection #8 entered into the OIS by Wednesday, June 4\(^{th}\) at 8:00 p.m.** Observation questions:
    ▪ How does the teacher foster learning, encourage questions, and discuss ideas within the lesson?
    ▪ Does the teacher interact with all students or only call on a select few?

**Session 10: June 5, 2008 (Final Presentations)**
• Finish presenting pair-shared lesson plans (6 to 8 minutes in length)
• Final discussion and reflections on classroom observations and course outline
• Share growth experiences
• Networking and support

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