

Department of Teaching and Learning
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Course Information

Prefix & Number	EDEL 433
Title	TEACHING ELEMENTARY SCHOOL MATHEMATICS
Credits	3 Credit Hours
Semester	
Instructor	
Office/Phone/Email	
Class Location	
Office Hours	
Prerequisites	Successful completion of the PPST, MAT 122 & 123.
Course Description (Course Introduction)	The intent of this course is to assist prospective teachers in developing sound pedagogical strategies and instructional techniques in teaching elementary school mathematics. The task of the teacher is to combine knowledge of self, students, subject matter, and materials to form meaningful experiences for children. By focusing attention on each of these elements and their interactions this course will provide a beginning step in emergence as a teacher of mathematics.
SPA Standards Addressed: Standard Domain Areas Addressed in this Course INTASC Principles Addressed in this Course (please insert three subcomponents to them (performance, essential knowledge, and critical dispositions)	- Develop a contemporary philosophy of teaching mathematics to children that promotes effective learning and incorporate this philosophy into the development of lessons and instructional materials. (NCTM Equity Principle, NCTM Curriculum Principle, NCTM Learning Principle; COE Principle 2: Individual Development, COE Principle 4: Planning Processes, COE Principle 5: Strategies and Methods, COE Principle 6: Learning Environments; INTASC Standard 7: Planning for Instruction, INTASC Standard 9: Professional Learning and Ethical Practice, INTASC Standard 10: Leadership and Collaboration; Common Core State Standards for Mathematical Practice 1-8) - Apply understanding of elementary school mathematics content by sequencing mathematical concepts and relating sequences to the needs of children. (NCTM Curriculum Principle; COE Principles 1-4: Content Knowledge, Individual Development, Diverse Learners, Planning Processes; INTASC Standard 1: Learner Development, INTASC Standard 2: Learning

Differences, INTASC Standard 4: Content Knowledge, INTASC Standard 5: Application of Content, INTASC Standard 7: Planning for Instruction, INTASC Standard 8: Instructional Strategies; Common Core State Standards for Mathematical Practice 1, 4, 6-8)

- Become familiar with and use different pedagogical techniques in teaching mathematics to elementary school children and in assessing the effectiveness of those techniques. (NCTM Teaching Principle, NCTM Assessment Principle; COE Principles 5 and 8: Strategies and Methods and Assessments; INTASC Standard 6: Assessment, INTASC Standard 7: Planning for Instruction, INTASC Standard 8: Instructional Strategies; Common Core State Standards for Mathematical Practice 1, 3, 5, 7, 8)

- Recognize and provide for individual styles of learning and individual performance levels by effectively using appropriate materials and resources in teaching elementary mathematics. (NCTM Curriculum Principle, NCTM Teaching Principle, NCTM Learning Principle; COE Principles 2 and 3: Individual Development and Diverse Learners; INTASC Standard 3: Learning Environments, INTASC Standard 4: Content Knowledge, INTASC Standard 5: Application of Content, INTASC Standard 7: Planning for Instruction, INTASC Standard 8: Instructional Strategies; Common Core State Standards for Mathematical Practice 1, 3, 5, 7, 8)

- Develop a positive attitude toward mathematics through an appreciation of and an enthusiasm for teaching mathematics meaningfully. (NCTM Learning Principle; COE Principles 6 and 10: Learning Environments and Reflection and Professional Development; INTASC Standard 9: Professional Learning and Ethical Practice, INTASC Standard 10: Leadership and Collaboration)

- Learn to use technology in the teaching and learning of mathematics (NCTM Technology Principle; COE Principle 5: Strategies and Methods; INTASC Standard 3: Learning Environments, INTASC Standard 6: Assessment, INTASC Standard 9: Professional Learning and Ethical Practice, INTASC Standard 10: Leadership and Collaboration; Common Core State Standards for Mathematical Practice 5)

Specific Technology Goals reflecting the NETS Standards:

- Use technology tools and information resources to increase productivity, promote creativity, and facilitate academic learning.

- Use content-specific tools (e.g., software, simulation, environmental robes, graphing calculators, exploratory environments, Web tools) to support learning and research.

- Use technology resources to facilitate higher order and complex thinking skills, including problem solving, critical thinking, informed decision making, knowledge construction, and creativity.

- Use technology in the development of strategies for solving problems in the real world. Observe and experience the use of technology in their major field of study.

Text: Heddens, J.W. and Speer, W. R., *Today's Mathematics*, Twelfth Edition, Wiley Publishing, 2009.

Suggested Resources: *Teaching Children Mathematics* journal and other resources cited in text;

National Council of Teachers of Mathematics (NCTM) Curriculum Standards and Focal Points:
<http://www.nctm.org/standards/default.aspx?id=58>

Common Core Mathematics Standards:
<http://www.corestandards.org/the---standards/mathematics>

Course Requirements

Reading the Text and Participation - Reading, writing, and data collection assignments will be made periodically with the expectation of the completion prior to discussion in class. Students are expected to attend all classes and to take an active role in discussion.

WebCampus - WebCampus will be used as a means of communication, with class schedule, all assignments and due dates provided on-line. All students are expected to participate on-line and check WebCampus regularly.

Writings / Assignments - There will be writings / assignments throughout the semester. Students are expected to produce high quality, thoughtful work. Specific assignments as well as formatting details will be found on WebCampus.

Grading Policies

Assignments - Assignments are due at the beginning of the first class period of the assigned week unless otherwise stated. If work cannot be completed on time, make arrangements with the instructor prior to the due date. Late assignments will be accepted only if arrangements with the instructor are made prior to the due date and are subject to the loss of points due to lateness. Unless otherwise noted in class, assignments should be typed. Do not enclose your work in folders; please staple in the upper left corner. Cover pages are unnecessary; place your name, date, section number, table number and title of assignment in upper right or left corner of the first page. For self-protection, provide yourself with back-up copies of all assignments.

Grading of assignments: Students will be graded with a '+' for work that goes beyond the expectation of the instructor, and a '-' for work that is not satisfactory. At the end of the semester, if the average student grade is positive, the final grade will be increased by one level (e.g., B+ to A-, or A- to A. If the average student grade is negative, the final grade will be decreased by one level (e.g., A to A-).

Attendance and Participation – Attendance is required and affects the final grade. For the purposes of this class, attendance is defined as presence and participation in class discussions and activities. Lack of participation may be considered an absence from class. University accepted excused absences are religious holidays or participation in University-sponsored events; students planning to take University sanctioned religious holidays must inform the instructor no later than the second class meeting. There are no other identified excused absences. Your attendance pattern [absences, late arrivals, early departures, and participation] will influence your final grade as follows:

<u>Absences</u>	<u>Effect</u>
<u>(Note: 3 late arrivals and/or early departures = 1 absence)</u>	
0 - 2	no change in grade
3 - 4	grade drops 1/3 (e.g., B+ will drop to a B)
5 - 6	grade drops 2/3 (e.g., B+ will drop to a B-)
7 - 8	grade drops 1 letter
9 - 10	grade drops 1 1/3 letter
>10	F

Grading

Writings/Assignments	+ / - 1 grade
Quizzes	60%
On-line Participation	+ / - 1 grade
Manipulatives Performance Assessment	5%
Final Exam	35%

Graduate Licensure – CIE 533 graduate licensure students are required to complete an additional research application project. See the instructor for this semester’s project. Failure to complete a project will result in a deduction of one full letter grade. The project will be due with the final exam.

Administrative Concerns - Successful completion of the PPST, MAT 122 and 123 are prerequisites to this course. Students who cannot verify having taken or having received waivers for these requirements within the first week of class will be administratively dropped/withdrawn from the course.

Any student who misses the first class meeting may be administratively dropped/withdrawn from the course in order to accommodate students on a waiting list.

Tentative Course Schedule (see WebCampus Calendar for up-to-date information)

Week # Date	Topics	Readings due
Week 1	Teaching Mathematics for Understanding	1. Ch. 2: Exploring what it Means to Know and Do Mathematics
Week 2	Status and Learning Mathematics Orchestrating Mathematical Discussions: Intro	1. http://teachingmathculture.wordpress.com/2014/03/05/status-the-social-organization-of-smartness/ 2. http://teachingmathculture.wordpress.com/2014/03/10/seeing-status-in-the-classroom/ 3. Wood (2008) Why Can't Miguel Learn Math?
Week 3	Teaching Mathematics through Problem Solving in Diverse Classrooms Recognizing and Documenting Children's Funds of Knowledge	Oslund & Crespo (2014) AND 1. Teaching through Problem Solving 2. Planning for All Learners (pp. 67-69, start with section on accommodating a lesson for ELLs) 3. Teaching Mathematics Equitably to All Children (pp. 94, 95, & 102-107)
Week 4	Early Number Concepts and Teaching Non-native English Speakers	Developing Early Number Sense AND Choose ONE of the following (BB): 1. Garrison et al., 90 percent of the game is half mental 2. Bresser, Equity for Language Learners 3. Wiest, Problem Solving and English Learners 4. Borgioli, Equity for English Learners in Math Class

Week 5	Foundations for Operations, Part I (Addition and Subtraction)	<ol style="list-style-type: none"> 1. Developing Meaning for the Operations (pp. 148-158) 2. Helping Students Master the Basic Facts (pp. 171-181) 3. Developing Strategies for Addition and Subtraction Computation (pp. 216-228) 4. Chapter 3 of Children's Mathematics
Week 6	Arithmetic and Algebraic Thinking: Equality	
Week 7	Foundations for Operations, Part II: Multiplication and Division	<p>Developing Meaning for the Operations (pp. 158-170)</p> <p>Helping Students Master the Basic Facts (pp. 181-191)</p>
Week 8	Place Value, Part I: MultiDigit Addition and Subtraction	<ol style="list-style-type: none"> 1. Kline (2008) 2. Stein, M. K., Engle, R. A., Smith, M. S., & Hughes, E. K. (2008). 3. Phillip (1996)
Week 9	<i>No Class Spring Break</i>	
Week 10	Place Value, Part II: Multidigit Multiplication and Division	<p>Developing Whole-Number Place-Value Concepts</p> <ol style="list-style-type: none"> 1. Campbell et al. (1998)
Week 11	Data Collection and Analysis and Children's Funds of Knowledge	<p>Developing Concepts of Data Analysis</p> <p>Choose TWO of the following (BB):</p> <ol style="list-style-type: none"> 1. Peterson, <i>Teaching math across the curriculum</i> 2. Simic-Muller et al., <i>Math Club Problem Posing</i> 3. Richardson, <i>Designing a math trail for the elementary school</i> 4. Kahn & Civil, <i>Understanding the math of a classroom garden</i> 5. English, <i>Statistics at Play</i>

Week 12	Children's Funds of Knowledge Part II	<i>Civil & Menendez "Involving Latino/Latina parents in their children's mathematics education"</i> <i>Clements and Sarama "Math and Play"</i>
Week 13	Geometry	Geometric Thinking and Geometric Concepts
Week 14	Fractions: Meaning of and Equivalency	Developing Fraction Concepts 1. Empson, <i>Using sharing situations to help children learn fractions</i> 2. Empson, <i>Equal sharing and the root of fraction equivalence</i>
Week 15	Fractions: Operations and Proportional Thinking	Developing Strategies for Fraction Computation 1. Gould, building understanding of fractions with Lego® bricks
Week 16	Revisiting Reggie and Ms. Keith	Karp, Bush, Dougherty (2014) 13 Rules That Expire
Final Exam		

POLICIES AND SPECIAL NOTES

Academic Misconduct

Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the *Student Academic Misconduct Policy* (approved December 9, 2005) located at:

<https://www.unlv.edu/studentconduct/student-conduct>.

Copyright

The University requires all members of the University Community to familiarize themselves with and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor

defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

Disability Resource Center (DRC)

The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

Religious Holidays Policy

Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor within the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or within the first 7 calendar days of the course for summer and modular courses, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

Transparency in Learning and Teaching

The University encourages application of the transparency method of constructing assignments for student success. Please see these two links for further information:
<https://www.unlv.edu/provost/teachingandlearning>
<https://www.unlv.edu/provost/transparency>

Incomplete Grades

The grade of I—Incomplete—can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving "I" grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

Tutoring and Coaching

The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit <http://www.unlv.edu/asc> or call [702-895-3177](tel:702-895-3177). The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of the SSC (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TEB second floor.

UNLV Writing Center

One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>.

Rebelmail

By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu. Emailing within WebCampus is acceptable.

Final Examinations

The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>.

Library Resource

Students may consult with a librarian on research needs. For this class, the Subject Librarian is (https://www.library.unlv.edu/contact/librarians_by_subject). UNLV Libraries provides resources to support students' access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at <https://www.library.unlv.edu/>.