

Course & Section Nos.	EDMS 543 Sec 1
Course Title	Elementary Mathematics Education
Class Roster No.	43458
Days	Wednesday
Time	4:00 PM – 6:50 PM
Course Location	Virtual
Semester / Year	Fall 2020
Instructor	Sean Nank, Ph.D.
Phone	760-458-3178
E-Mail	snank@cougars.csusm.edu
Office	Virtual
Office Hours	By Appointment

SCHOOL OF EDUCATION MISSION & VISION STATEMENT

(Adopted by SOE Governance Community, January 2013)

Vision

To serve the educational needs of local, regional, and global communities, the School of Education advances innovative practice and leadership by generating, embracing, and promoting equitable and creative solutions.

Mission

The mission of the School of Education community is to collaboratively transform education. We:

- Create community through partnerships
- Promote and foster social justice and educational equity
- Advance innovative, student-centered practices
- Inspire reflective teaching and learning
- Conduct purposeful research
- Serve the School, College, University, and Community

BASIC TENETS OF OUR CONCEPTUAL FRAMEWORK

- Student centered education
- Research and theory specific to the program field inform practice
- Connections and links between coursework and application
- Strong engagement between faculty and candidates
- Co-teaching clinical practice
- Culturally responsive pedagogy and socially just outcomes

COURSE DESCRIPTION

This course focuses on curriculum development, methods, techniques, materials, planning, organization, and assessment in various elementary school curricula, and curriculum integration in mathematics. Methods of cross-cultural language and academic development will be integrated into the course. *Requires participation/observation in the public schools.*

Course Prerequisites

Admission to the Multiple Subject Credential Program.

Course Objectives

Learning to teach mathematics well is challenging and, therefore, this course is but one stage in your process of becoming a mathematics teacher. We are expected to: (a) increase our skills of listening to students and asking questions, (b) develop an understanding of children's content specific thinking, (c) develop strategies to create a classroom environment that promotes the investigation and growth of mathematical ideas and to ensure the success of all students in multi-cultural settings, (d) deepen our understanding of the mathematics taught at the elementary school level, including such topics as place value, base systems, number theory, fractions, proportions, statistics, and algebra, (e) develop an understanding of the current issues and best practices in mathematics education, (f) develop a familiarity with the California Common Core State Standards, (g) understand the nature, purposes, and application of mathematics assessment and its relationship with curriculum, teaching, and learning, and (h) learn to teach content specific concepts using effective and appropriate strategies, including the educational use of technology.

REQUIRED TEXTS, MATERIALS AND ACCOUNTS

Required Texts

- California Department of Education. (2013). *California common core state standards for mathematics*. Sacramento, CA: Author. <http://www.cde.ca.gov/ci/cc/> (PDF, free download)
- Nank, S. D. (2011). *Testing over teaching: Mathematics education in the 21st century*. Chicago, IL: Discovery Association Publishing House.
- SU, F. (2020). *Mathematics for Human Flourishing*. Yale University Book Press.
- Several other readings are required and will be available for download.

Recommended Texts

- Carpenter, T. P., Fennema, E., Franke, M. L., Levi, L., & Empson, S. B. (2014). *Children's mathematics: Cognitively guided instruction* (2nd ed.). Portsmouth, NH: Heinemann.
- Carpenter, T. P., Franke, M. L., & Levi, L. (2003). *Thinking mathematically: Integrating arithmetic & algebra in elementary school*. Portsmouth, NH: Heinemann.
- Empson, S. B., & Levi, L. (2011). *Extending children's mathematics: Fractions and decimals*. Portsmouth, NH: Heinemann.
- Kamii, C. (2000). *Young children reinvent arithmetic: Implications of Piaget's theory* (2nd Ed.). New York, NY: Teachers College Press. ISBN-13: 978-0807739044.
- Nank, S. D. (Interviewee), Paula Phillips (Interviewer). (2018) The beauty of math. Retrieved from:
<https://www.voiceamerica.com/episode/104795/the-beauty-of-math>
- Nank, S. D. (Interviewee), Vicki Davis (Interviewer). (2018). iPad for masterful math: Randomizing formative math assessment. Episode 228. Retrieved from:
<http://www.coolcatteacher.com/ipads-masterful-math-randomizing-formative-math-assessment/>
- Nank, S. D. (2017). Seven steps for adapting technology to the classroom. *Southeast Education Network (SEEN)* (19, 1). Retrieved from:
<http://www.seenmagazine.us/Articles/Article-Detail/ArticleId/6500/Seven-Steps-for-Adapting-Technology-to-the-Classroom>

- Nank, S. D. (Interviewee), Goode, R. W. (Author). (2017). You need math awareness – here’s why: collaboration, decomposing numbers, and pattern recognition are key to developing numeracy skills. *Black Enterprise*. Retrieved from: <http://www.blackenterprise.com/education/you-need-math-awareness-heres-why/>
- Nank, S. D. (2017). Balancing math education: Interview with Sean Nank, PhD. *Kindergarten Kiosk*. Retrieved from: <https://www.kindergartenkiosk.com/podcast/4/27/balancing-math-education-interview-with-sean-nank-phd>
- Nank, S. D. (Interviewee), Will, M. (Author). (2017). Math ‘makes the world more beautiful’: A professor’s advice on teaching math. *Education Week*. Retrieved from: http://blogs.edweek.org/teachers/teaching_now/2017/04/math_teacher_ga.html?cmp=soc-edit-tw
- Nank, S. D. (Interviewee), Schaffhauser, D. (Author). (2017). What’s out in 2017: 5 ed tech trends on the way out in 2017. *THE Journal: Transforming Education Through Technology* (44, 2). pp. 14 – 17. Retrieved from: https://digital.1105media.com/THEJournal/2017/THE_1703/TJ_1703Q1.html#p=1
- Nank, S. D. (Interviewee), Harrington, T. (Author) (2017). Q&A: Tips and insights from a common core math expert. *EdSource*. Retrieved from: <https://edsources.org/2017/qa-tips-and-insights-from-a-common-core-math-expert/577388>
- Nank, S. D. (Interviewee), Schaffhauser, D. (Author). (2017). What’s hot: 9 major ed tech trends for 2017. *THE Journal: Transforming Education Through Technology*. Retrieved from: <https://thejournal.com/articles/2017/01/12/whats-hot-9-major-ed-tech-trends-for-2017.aspx>
- National Council of Teachers of Mathematics (NCTM) (2014). *Principles to actions: Ensuring mathematics success for all*. Reston, VA: Author. <http://www.nctm.org/PrinciplestoActions/> (eBook/PDF \$5 or print edition \$29)
- NCTM’s professional journals: *Teaching Children Mathematics* (<https://www.nctm.org/publications/teaching-children-mathematics/>) and *Mathematics Teacher: Learning and Teaching PK-12* (<https://www.nctm.org/mtlt/>).
- Smith, M. S., & Stein, M. K. (2011). *Five practices for orchestrating productive mathematics discussions*. Reston, VA: National Council of Teachers of Mathematics.
- Van de Walle, J. A., Karp, K. M., & Bay-Williams, J. M. (2018). *Elementary and middle school mathematics: Teaching developmentally* (10th ed.). Boston, MA: Allyn & Bacon.
- Wong, Harry K, *The First Days of School*, ISBN 978-0-9764233-1-7, 4th ed; hard copy or e-book; EffectiveTeaching.com

Hansen Curriculum Library: You are encouraged to use the books, manipulatives, and multimedia in the Hansen Curriculum Library, located on the 5th floor of the Kellogg Library on the CSUSM main campus.

Cougar Courses

The course materials and assignments are posted at Cougar Courses, accessible at <https://cc.csusm.edu/>.

COURSE AND PROGRAM LEARNING OUTCOMES

Upon successful completion of this course, teacher candidates will demonstrate the course objectives listed above. Teacher candidates will also complete other courses, clinical practice, and additional requirements for the credential program. Upon successful completion of the program, teacher candidates will demonstrate the following competencies and dispositions:

Authorization to Teach English Learners

This credential program has been specifically designed to prepare teachers for the diversity of languages often encountered in California public school classrooms. The authorization to teach English learners is met through the infusion of content and experiences within the credential program, as well as additional coursework. Candidates successfully completing this program receive a credential with authorization to teach English learners. (*Approved by CCTC in SB 2042 Program Standards, August 02*)

Teacher Performance Expectation (TPE) Competencies

The course objectives, assignments, and assessments have been aligned with the CTC standards for Multiple Subject Credential. This course is designed to help teachers seeking a California teaching credential to develop the skills, knowledge, and attitudes necessary to assist schools and district in implementing effective programs for all students. The successful candidate will be able to merge theory and practice in order to realize a comprehensive and extensive educational program for all students.

Teacher Performance Assessment

Beginning July 1, 2008 all California credential candidates must successfully complete a state-approved Teacher Performance Assessment (TPA), as part of the credential program of preparation. This year the CSUSM credential programs use the CalTPA (California Teacher Performance Assessment).

CalTPA

To assist with your successful completion of the CalTPA, a series of informational seminars are offered over the course of the program. TPA related questions and logistical concerns are to be addressed during the seminars. Your attendance to TPA seminars will greatly contribute to your success on the assessment. The CalTPA Candidate Handbook, TPA seminar schedule, and other TPA support materials may be found on the SOE website:

<https://www.csusm.edu/soe/currentstudents/tpa.html>

Additionally, to support your success in your credential program and with TPA, SOE classes use common pedagogical language, lesson plans (lesson designs), and unit plans (unit designs).

Expected Dispositions for the Education Profession

Education is a profession that has, at its core, certain dispositional attributes that must be acquired and developed. Teaching and working with learners of all ages requires not only specific content knowledge and pedagogical skills, but positive attitudes about multiple dimensions of the profession. The School of Education has identified six dispositions that must be evident in teacher candidates: social justice and equity, collaboration, critical thinking, professional ethics, reflective teaching and learning, and life-long learning. These dispositions have observable actions that will be assessed throughout the preparation program. For each dispositional element, there are three levels of performance - *unacceptable*, *initial target*, and *advanced target*. The description and rubric for the three levels of performance offer measurable behaviors and examples.

The assessment is designed to provide candidates with ongoing feedback for their growth in professional dispositions and includes a self-assessment by the candidate. The dispositions and rubric are presented, explained and assessed in one or more designated courses in each program as well as in clinical practice. Based upon assessment feedback candidates will compose a reflection that becomes part of the candidate's Teaching Performance Expectation portfolio. Candidates are expected to meet the level of *initial target* during the program.

Professional Dispositions & Participation—You are expected to actively participate in in-class and online discussions, group work, presentations, and hands-on activities throughout the course. A positive professional disposition includes a willingness to consider and discuss new ideas objectively, curiosity, perseverance, and seriousness about improving one's self as a teacher. It can also include a sense of humor and social intelligence (e.g., the tact and ability to make others feel comfortable and to contribute).

Assignment Policy

All assignments, requirements, due dates, and scoring rubrics will be available through Cougar Courses. **You are responsible to track your grades and monitor your progress in the course.** In order to successfully complete this course, all assignments must be completed at an acceptable level noted on assignment directions and rubrics. Each written assignment is expected to have a clear organizational presentation and

be free of grammar, punctuation, or spelling errors. There will be a reduction in points for the above-mentioned errors. All assignments are due by 11 p.m. on the due date, unless specified otherwise. Reading reflections are typically due in class.

Late assignment and missed work: There will be 10% deduction for being one day late, 20% deduction two days late, and 30% deduction three days late. After three days, no assignments will be accepted. If extraordinary circumstances occur, please contact the instructor BEFORE the deadline.

Grading Standards

Final grades are calculated on the standard of:

A: 93% - 100%	A-: 90% - 92%	B+: 87% - 89%	B: 83% - 86%
B-: 80% - 82%	C+: 77% - 79%	C: 73% - 76%	C-: 70% - 72%
D: 60% - 69%	F: below 60		

Failure to complete this course with a grade of C+ or higher will prohibit a teacher candidate from continuing the teaching credential program.

Final Exam Statement

There will be no final exam.

School of Education/Course Attendance Policy

Due to the dynamic and interactive nature of courses in the School of Education, all candidates are expected to attend all classes and participate actively. At a minimum, candidates must attend more than 80% of class time, or s/he may not receive a passing grade for the course at the discretion of the instructor. Individual instructors may adopt more stringent attendance requirements. Should the candidate have extenuating circumstances, s/he should contact the instructor as soon as possible. *(Adopted by the COE Governance Community, December, 1997).*

This course: Hands-on activities and discussions are a vital part of the course. Attendance will be taken in each class. Candidates missing more than one class session cannot earn an A or A- (up to 11 points will be deducted from the course total points they earn). Candidates missing more than two class sessions cannot earn a B or B+ (up to 18 points deduction). Candidates missing more than three sessions cannot earn a C+. Excessive tardiness in a class period or leaving early may count as an absence. Notifying the instructor does not constitute an excuse. All assignments must be turned in on due date even in case of an absence.

In an eight-week course, a class session is either the morning or afternoon session (approximately 3 hours) of a full instructional day.

GENERAL CONSIDERATIONS

CSUSM Academic Honesty Policy

Students will be expected to adhere to standards of academic honesty and integrity, as outlined in the Student Academic Honesty Policy. All assignments must be original work, clear and error-free. All ideas/material that are borrowed from other sources must have appropriate references to the original sources. Any quoted material should give credit to the source and be punctuated accordingly.

Academic Honesty and Integrity: Students are responsible for honest completion and representation of their work. Your course catalog details the ethical standards and penalties for infractions. There will be zero tolerance for infractions. If you believe there has been an infraction by someone in the class, please bring it to the instructor's attention. The instructor reserves the right to discipline any student for academic dishonesty, in accordance with the general rules and regulations of the university. Disciplinary action may

include the lowering of grades and/or the assignment of a failing grade for an exam, assignment, or the class as a whole.

Incidents of Academic Dishonesty will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the University.

Refer to the full Academic Honesty Policy at:

http://www.csusm.edu/policies/active/documents/Academic_Honesty_Policy.html

Plagiarism

As an educator, it is expected that each candidate (course participant) will do his/her own work, and contribute equally to group projects and processes. Plagiarism or cheating is unacceptable under any circumstances. If you are in doubt about whether your work is paraphrased or plagiarized see the Plagiarism Prevention for Students website <http://library.csusm.edu/plagiarism/index.html>. If there are questions about academic honesty, please consult the University catalog.

Students with Disabilities Requiring Reasonable Accommodations

Students with disabilities who require reasonable accommodations must seek approval for services by providing appropriate and recent documentation to the Office of Disability Support Services (DSS). This office is in Craven Hall 4200, contact by phone at (760) 750-4905, or TTY (760) 750-4909. Website: <http://www.csusm.edu/dss/>. Students authorized by DSS to receive reasonable accommodations should meet with their instructor during office hours or, in order to ensure confidentiality, in a more private setting. The CSUSM's accessibility policy can be found at <https://www.csusm.edu/accessibility/>.

Credit Hour Policy Statement

Per the University Credit Hour Policy, students are expected to spend a minimum of 11 hours *outside* of the classroom each week because this is a 3-unit course in an 8-week timeframe ("double dose"). The course has a few online sessions. The online tasks are designed to reflect an appropriate amount of time needed for the course credit.

All University Writing Requirement

The CSUSM writing requirement of 2500 words is met through the completion of course assignments. Therefore, all writing will be looked at for content, organization, grammar, spelling, and format. For this class please use APA Manual, 6th edition (see a guide at <http://owl.english.purdue.edu/owl/section/2/10/>).

Necessary Technical Competency Required of Students

This course has a few online sessions. To successfully complete online activities, you need to use Cougar Courses (download course documents, watch presentations and videos, upload your assignments, post discussion responses and reply to peers' posts, join online chats, etc.). You need to use e-mail effectively and know how to attach files. It is best that you know how to make minor configuration changes in a Web browser (change font sizes, open and close tabs, allow or disable pop-ups and plug-ins, enable Cookies and JavaScript, etc.). In addition, you are expected to use office applications (such as a word processor, a presentation tool, a spreadsheet tool, an image viewer, a PDF reader, etc.), engage in collaboration and file sharing (such as Dropbox and/or Google Drive & Apps), and apply Web literacy skills (conduct an effective search with a search engine, evaluate trustworthiness of web content, understand copyrights). Lastly, you may need to troubleshoot basic hardware and software problems.

Contact Information for Technical Support Assistance

If you need any technical support, contact IITS Technology Support Services: <https://www.csusm.edu/tss/>

Electronic Communication Protocol

Electronic correspondence is a part of your professional interactions. If you need to contact the instructor, e-mail is often the easiest way to do so. It is my intention to respond to all received e-mails in a timely manner.

Please be reminded that e-mail and on-line discussions are a very specific form of communication, with their own nuances and etiquette. For instance, electronic messages sent in all upper case (or lower case) letters, major typos, or slang, often communicate more than the sender originally intended. With that said, please be mindful of all e-mail and on-line discussion messages you send to your colleagues, to faculty members in the School of Education, or to persons within the greater educational community. All electronic messages should be crafted with professionalism and care.

Things to consider:

- Would I say in person what this electronic message specifically says?
- How could this message be misconstrued?
- Does this message represent my highest self?
- Am I sending this electronic message to avoid a face-to-face conversation?

In addition, if there is ever a concern with an electronic message sent to you, please talk with the author in person in order to correct any confusion.

TENTATIVE COURSE SCHEDULE/COURSE OUTLINE

The dynamic nature of teaching and learning makes it hard to establish a set schedule. Please note that modifications will likely to occur at the discretion of the instructor. You're expected to **complete a week's reading materials BEFORE coming to the class** of the week.

Date	Session, Topics, & Essential Questions	Reading & Assignments
Week 1 9/2	1. Building a math learning community What are characteristics of an effective math classroom? What is your relationship with math? (MCR)Which One Doesn't Belong?	Read: Course syllabus Start perusing the CCSS-M grades K-5 and the eight standards for mathematical practice View: Check Cougar Courses Do: Come to the first class ready to engage in mathematics and your mathematical story
Week 2 9/9	2. Students as young mathematicians in a community of learners What does it mean to "do mathematics"? How do beliefs, attitudes, identities, etc. influence learning? Passion and Mathematics (P) (MCR)Choral Count	These are all due by this day, Sept 9th – this is NOT something you start on today, it is something that is finished by today. Read: Su, Intro, Ch. 1, 2 View: Check Cougar Courses Do: Discussion Post - (2 pts) The original posts are due Saturday night. Peer responses are due Tuesday night.
Week 3 9/16	3. Instructional Routines Content Routines and Language Routines (MCR) What Do you Know About ___?	Read: Su, Ch. 3, 4 View: Check Cougar Courses Do: Discussion Post - (2 pts) Passion Project – Choose your passion

Date	Session, Topics, & Essential Questions	Reading & Assignments
Week 4 9/23	4. Lesson Structures and Lesson Plans The basis of a mathematical lesson plan How can we unpack math standards? How do we establish learning goals to guide student learning & instructional decisions? (MCR) True or False?	Read: Su, Ch. 5, 6 View: Check Cougar Courses Do: Discussion Post - (2 pts)
Week 5 9/30	5. Curricula: Themed, Traditional, and Problem-Based & Cultural Proficiency in Mathematics Classrooms (MCR) Number Talk	Read: Su, Ch. 7, 8 View: Check Cougar Courses Do: Discussion Post - (2 pts) Lesson Plan – Turn in your lesson plan Warm UP (5 pts)
Week 6 10/7	6. Absolutist vs. fallibilist conceptions of mathematical thinking What Does Toothpaste Have to do with Engagement (P) (MCR) Notice and Wonder	Read: Su, Ch. 9, 10 View: Check Cougar Courses Do: Discussion Post - (2 pts) Passion Project – Have your alignment to your subject matter completed Lesson Plan – Turn in your lesson plan ACTIVITY (10 pts)
Week 7 10/14	7. CCSS Standards and Mathematical Practices How can we unpack math standards? How do we establish learning goals to guide student learning & instructional decisions? (MCR) Estimation Exploration	Read: SU, Ch. 11, 12 View: Check Cougar Courses Do: Discussion Post - (2 pts) Lesson Plan – Turn in your lesson plan COOL DOWN (5 pts)
Week 8 10/21	8. Assessment K-2 Timed Tests – Speed Kills... Student Achievement in Mathematics (P) IM Example of Formative Assessments (MCR) Act it Out (k-2)	Read: Nank, Intro., Ch. 1, 2 View: Check Cougar Courses Do: Discussion Post - (2 pts)
Week 9 10/28	9. Assessment 3-5 Standards Based Grading in Mathematics Classrooms (P) (Centers) Factor Game	Read: Nank, Ch. 3, 4 View: Check Cougar Courses Do: Discussion Post - (2 pts) Passion Project BLOG – Have your storyboard completed (5 pts)
Week 10 11/4	10. Your Teaching Personality – the 4 Personalities and the 5 LLs Know yourself so you can know your colleagues and your students Innovative Elements of Leadership (P) – Yes, you are a Leader!! (Centers) number/dice game	Read: Nank, Ch. 5, 6 View: Check Cougar Courses Do:

Date	Session, Topics, & Essential Questions	Reading & Assignments
		Discussion Post - (2 pts) Passion Project – Start recording if you have not yet done so
Week 11 11/11	11. Your students' learner personality How were you as a learner, how are you as a learner, how are your students as learners with you? Student Discourse (P) (MLR) Stronger and Clearer Each Time	Read: Su, Ch. 13, Epilogue View: Check Cougar Courses Do: Discussion Post - (2 pts) Assessment – Peer review due (7 pts)
Week 12 11/18	12. Equity, Access, and Social Justice How do we make decisions about what to teach and how we teach it? How do we monitor student learning during a lesson? Oppression to Success (P) (MLR) Collect and Display	Read: Article TBD View: Check Cougar Courses Do: Discussion Post - (2 pts)
Week 13 11/25	13. Thanksgiving!!!!!!!	Read: Article TBD View: Check Cougar Courses Do: Discussion Post - (2 pts) Assessment – Final Version DUE (20 pts)
Week 14 12/2	14. Mathematical Connections – It's Linked to More Than Your Passion Pineapple Problem Pre-design (L) Clarify, Critique, Correct	Read: Article TBD View: Check Cougar Courses Do: Discussion Post - (2 pts)
Week 15 12/9	15. Why, Voice, and Relationships Top Ten (P) (L) Three Reads	Read: Article TBD View: Check Cougar Courses Do: Discussion Post - (2 pts) Passion Project – DUE (20 pts)
Week 16 12/16	16. Finals Week	No Final Exam

COURSE REQUIREMENTS AND GRADED COURSE COMPONENTS

Teaching and learning require engaged and reflective participants. It is essential that you prepare carefully for class, be ready to discuss readings and assignments thoughtfully, and actively participate in all class activities.

Course Assignments

Assignment structure:

Discussions: 28 pts
 Assessment: 20 pts
 Assessment draft (for peer review): 7 pts

Lesson Plan (Warm up, activity, cool down):	20 pts
Passion Project:	25 pts
Total:	100 pts

Passion Project

25 pts: One project for the term is the Passion Project. You will complete this project as a student in this course in hope that you will then take and use, modify, or otherwise adapt the concept to your classroom. The premise of the project is that it is paramount to ensure students have a safe environment in your classroom in order to 1) transition the mindset to “our” classroom, 2) provide an avenue for authentic cultural proficiency while valuing diverse experiences, and 3) using students’ passion to uncover the underlying subject matter specific themes and influence threaded throughout their passion. This will facilitate students making their own authentic meaning of the subject matter instead of adopting our meaning of the subject matter, thus facilitating engagement, learning, and understanding.

The complete Passion Project including the rubric for grading is available in the Cougar Courses portal. Remember, you will engage in this project by identifying your top three passions and then use mathematics to explain and investigate how the subject matter is woven throughout your passion.

Lesson Plan

20 pts: You will design a lesson plan that consists of three components which are 1) Warm Up, 2) Activity, and 3) Cool Down. The lesson plan should align with the curriculum you are utilizing at your site for your clinical experience. Ideally, you will teach this lesson at your site. Start looking now at the timeline for the lesson plan and plan accordingly – choose something that comes after the completion of the lesson plan so you can use it in your clinical experience. You will identify the CCSS-M standards, Standard for Mathematical Practice (SMP), and the Mathematics Content Routine (MCR) or Mathematics Language Routine (MLR) to be used in the lesson.

Assessment

20 pts: Once finished with the above detailed lesson plan, you will design a unit assessment based on the unit the lesson plan took place in. The assessment should embrace multiple means for students to display their learning and incorporate theoretical and practical aspects of assessment strategies. The assessment should also adequately cover both procedural and conceptual understanding of the standard(s) contained in the unit.