INSTRUCTOR:

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Office Hours: 9-9:50 M,T,W,Th, by appointment

COURSE OVERVIEW:

Reflecting Washington State mathematics K-12 learning standards, the National Council of Teachers of Mathematics (NCTM) principles and standards, and the State of Washington Professional Educator Standards Board (PESB) endorsement standards for Number and Operations, this course emphasizes the development of the real number system in conjunction with the four arithmetic operations (+, − , ×, ÷). Elementary mathematics content is rediscovered through problem solving in an inquiry-based learning context to support the development of mathematical processes and practices.

Major content topics of the course include number sets and their properties; investigation of place value in different bases; meaning and interpretations of four arithmetic operations; standard and alternative algorithms of operations; and investigation of operations on various subsets of real numbers using concrete and abstract models. Exploration of these topics will follow the outline:

Unit 1: Place Value and the Base-Ten Number System
Unit 2: Fractions and Problem Solving
Unit 3: Addition and Subtraction
Unit 4: Multiplication
Unit 5: Division

COURSE DELIEVERY AND LAYOUT:

This course is delivered through a combination of face-to-face class sessions and Online Canvas. You are expected to log into Canvas frequently. It is organized into five modules that include in-class activities, mathematical exercises and problems (completed out-of-class but discussed in following class sessions), on-line quizzes, and in class exams. All these assessments will be in the calendar:

- Math Preparation exercises and problems - check of written work and preparation to participate in class discussions.
- Module on-line quizzes - unlimited attempts on quizzes, use quizzes to prepare for module written exams.
- Module Checking Understanding - students will explain how module activities reveal the connection between a main concept and multiple procedures studied in the module.
- Two written exams - 50 minute exams aligned with the exercises and on-line quizzes, students may re-take similar problems that they miss to earn back half of the missed points.

Required text: *Mathematics for Elementary Teachers with Activities*, 5th Edition Sybilla Beckmann

Software and Hardware Required

- Access to CWU Canvas. Documents in this course will be presented in .pdf. You will need Adobe Reader which you can obtain for free at http://get.adobe.com/reader/ .
- Internet connection
- Mac OS x 10.9 and higher or
- Windows Vista or higher--Windows 7 is recommended
- Up-to-date version of Firefox or Chrome
- Run the browser check (Links to an external site.)Links to an external site. to check your system settings.

COURSE OBJECTIVES:

By the end of the course, teacher candidates will be able to:

Outcomes		Assessment	Standards
Mathematical Problem Solving: *Teacher candidates know, understand, and apply the process of problem solving in each mathematical content area. As a result, candidates:*		Exercises, Quizzes, Tests, and Writing	EM 1D
Mathematical Reasoning: *Teacher candidates reason, construct, and evaluate mathematical arguments; also interpret and compare information from a variety of sources in each mathematical content area. As a result, candidates:*		Exercises, Quizzes, Tests, and Writing	EM 1D
Mathematical Communication: *Teacher candidates communicate their mathematical thinking orally and in writing, using appropriate mathematical language and notation to clearly and effectively express or present ideas and information in each mathematical content area. As a result, candidates:*		Exercises, Quizzes, Tests, and Writing	EM 1D
Mathematical Connections: *Teacher candidates recognize, use, and make connections between and among mathematical ideas and in contexts outside mathematics to build mathematical understanding. As a result, candidates:*		Exercises, Quizzes, Tests, and Writing	EM 1D
Number and Operation:			
Analyze and explain the mathematics that underlies the procedures involving operations with whole, integer, and rational numbers.		Exercises, Quizzes, Tests, and Writing	1D5
Recognize the meaning and use of place value in representing whole numbers and finite decimals, comparing and ordering numbers, and understanding the relative magnitude of numbers		Exercises, Quizzes, Tests, and Writing	1D5
Demonstrate proficiency in real number computation using multiple algorithms, mental mathematics, and computational estimation.		Exercises, Quizzes, Tests, and Writing	1D5
Demonstrate understanding of, represent, and use whole numbers, integers, and fractions.		Exercises, Quizzes, Tests, and Writing	1D5
Demonstrate understanding of the meaning of operations on whole numbers and fractions		Exercises, Quizzes, Tests, and Writing	1D5
Provide equivalent representations of fractions, decimals, and percents.		Exercises, Quizzes, Tests, and Writing	1D5
Demonstrate understanding of the fundamental ideas of number theory (e.g. divisibility, factoring, multiples, prime factorization, prime and composite)		Exercises, Quizzes, Tests, and Writing	1D5
Compare properties of number systems.		Exercises, Quizzes, Tests, and Writing	1D4
Demonstrate knowledge of the historical development of number and number systems, including contributions from many cultures.		Exercises, Quizzes, Tests, and Writing	1D2

ASSIGNMENTS AND EVALUATION GUIDELINES:

The instructional and assessment strategies for this course are designed to enable your achievement of the course performance outcomes. The instructors will give you feedback to support progress in meeting performance outcomes.

Assignment	Points
Exercises and Class Discussions and Activities	80
Practice quizzes for each Module	53
Module Checking Understanding	50
Module On-line Quizzes	60
Exams	200

Total Points	443

Grading Scale
93-100% = A, 90-93% = A-, 87-90% = B+, 83-87% = B, 80-83% = B- , 77-80% = C+, 73-77% = C, 70-73% = C-, 67-70% = D+, 63-67% = D, 60-63%, 0-60% = F   Please see the CWU Catalog for the eligibility for an incomplete (I).

Performance Expectations
All of the assignments and directions can be found on Canvas. If a course deadline was missed, assessment alternatives are left up to the discretion of the instructors.

COURSE POLICIES:
Instructor Feedback/Communication
The instructor will read and reply to all e-mails promptly. You will receive specific feedback in the form of electronic comments appended to your electronic submission. I will use the Announcements tool in CANVAS to communicate changes to the course and other course information.

Suggestions for Success
Take the responsibility for your own achievement of these performance objectives. You can get individual help by e-mail or in person in my office. If at any time you have trouble-using Blackboard or do not understand an assignment make sure to contact the instructor. Use the activities, assignments, assessments and people such as the instructor to insure that you understand the mathematical teaching concepts and can demonstrated this understanding in the form of the performance objectives.

Student Feedback/Communication
I welcome all feedback on the course. My preferred method of communication with individual students is via email. I am also available for office hours . If you experience a legitimate emergency (according to my standards) that will prevent you from completing required coursework on time, I expect you to communicate with me at the earliest reasonable opportunity. Please state the nature of the emergency, and when you expect to turn in the coursework.

Submitting Electronic Files
All electronic files must be submitted in .doc or .pdf format. If you do not have Microsoft Word, you can download Open Office Writer for free at http://www.openoffice.org/. This will allow you to open the instruction files, make changes and save in .doc or .pdf.

Late and Uncompleted Work
- If extenuating circumstances exist, contact instructor.
- All course assignments must be completed to pass the course.

UNIVERSITY POLICIES:
STUDENT SUCCESS
Multiple resources are available to help students move past challenges and become academically successful.

Academic Success Center
The CWU Academic Success Center helps students learn strategies that can increase GPA and improve course pass rates. All services are available online via Zoom unless otherwise noted. Expanded hours are available to meet student need. To access, go to www.cwu.edu/asc or https://tutortrac.cwu.edu, use your CWU login and password, and click the Schedule an Appointment link.

Tutors
Several forms of peer tutoring are available. All Canvas courses include a direct link to a tutoring resources page. The PALS program pairs a trained tutor with a faculty member to promote learning strategies and

content comprehension in specific courses. eTutoring allows students to get online help in 15 subjects with expanded hours of 5am-midnight, 7 days per week. To access, students visit www.etutoringonline.org, select CWU, and request a password link be sent to their CWU email address. A list of subjects is available at https://www.cwu.edu/academic-success/online-tutoring/online-tutoring

Academic Coach

Students can work one-on-one with an academic coach in individualized sessions that focus on building academic strength. Students can improve time management, develop a study plan, unpack how to process new information for deep understanding, increase reading and comprehension skills, and more. Coaches help students discover learning best strategies, maximize academic experiences, and reduce stress.

Writing Center

Learning to write well can be a difficult skill set to develop, a process made easier via targeted feedback via the CWU Writing Center. Students submit papers for review and receive detailed video comments from writing consultants in various disciplines. Students can also request a phone consult. Best results are achieved when students plan early for multiple rounds of feedback and revision.

MATH CENTER

Learning mathematics is challenging for many students. Students who struggle with math can access the CWU Math Center. Students can connect with a math tutor for live help sessions that deal with all Quantitative Reasoning, 100-level, and other math courses. Zoom meetings, whiteboards, and other tools are used to promote deeper understanding of mathematics.

UNIVERSITY POLICIES

ACADEMIC HONESTY

Consult university policies (CWUP 5-90-040(22), CWUR 2-90-040(22), and WAC 106-125-020) for student conduct, cheating, plagiarism, and other academic expectations. CWU's policies and recommendations for academic misconduct will be followed, leading to disciplinary action up to and including failing the course.

DIVERSITY

As a member of a peer learning community, a high degree of professionalism is necessary. **CWU expects every member of the university community to contribute to an inclusive and respectful classroom culture.**

DISABILITY SUPPORT SERVICES

Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. Students with disabilities should contact Disability Services to discuss a range of options to removing barriers, including accommodations: Hogue Hall 126, 509.963.2214, DS@cwu.edu

RELIGIOUS HOLIDAY ABSENCES - IS MY ABSENCE EXCUSED?

Excused absences will not lower your overall grade in this class and are determined on a case-by-case basis. In compliance with RCW 28B.137.010, Central Washington University makes every effort to deal reasonably and fairly with students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Students must present written notice to their instructor within the first two weeks of class listing the specific dates on which accommodations are required. Contact the Dean of Student Success at (509) 963-1515 for further information or questions.