

**DEPARTMENT OF MATHEMATICS  
COLLEGE OF SCIENCES  
CENTRAL WASHINGTON UNIVERSITY  
COURSE SYLLABUS SPRING 2012**

1. **MATH 164**

| <u>CRN</u> | <u>TIME/DAY</u> | <u>BLDG/ ROOM</u> | <u>INSTRUCTOR</u> |
|------------|-----------------|-------------------|-------------------|
| 30374      | 8:00 -8:50      | Hertz 120         | Dr. Janet Shiver  |
| 30375      | 9:00 – 9:50     | Hertz 120         | Dr. Janet Shiver  |

2. **Textbook and Materials:**

The text for this course is *a Problem Solving Approach to Mathematics*, eleventh edition by Billstein, Liebeskind and Lott.

3. **Office Hours and Phone Numbers:**

Office: Bouillon 117

Phone: 963-2834

Email: [shiverj@cwu.edu](mailto:shiverj@cwu.edu)

Office hours: 2:00 – 3:00 M,T,W,H or by appointment and 10:00-11:00F

4. **Course Description:** This course is designed for students who plan to teach at the elementary or middle grades level and who have declared education as their major course of study. This course presents the fundamental topics underlying elementary and middle school arithmetic including problem solving, real numbers and their subsystems, and elementary number systems. Algorithms for addition, subtraction, multiplication, and division of real numbers are developed using a variety of methods and activities.

5. **Course Rationale:** To meet the expectations for mathematics education for elementary teachers, a shift in content, instructional methods, and assessment practices is crucial. The *Principles and Standards for School Mathematics* (NCTM, 2000) outlines the specific changes needed in pre-service mathematics education. This document calls for prospective teachers to be taught using the methods they should model in their own classrooms. It also calls for teachers to have an understanding of the historical development and current applications of mathematics and the use of technology to promote mathematical understanding and to communicate meaning. This course is designed to address these changes in mathematics education and to prepare pre-service elementary teachers to teach important mathematical content to elementary students. This course will use the following reform ideas:

Content:           *Toward:* A variety of mathematical topics and problem situations  
                          *Away from:* Only arithmetic topics

Learning:           *Toward:* Investigating problems and exploring concepts  
                          *Away from:* Memorization and rote learning (although, in certain cases

these are necessary)

Teaching: *Toward:* Questioning and listening  
*Away from:* Teaching by telling

Evaluation: *Toward:* A variety of sources evaluated by the instructor  
*Away from:* Evaluation by tests only

Expectations: *Toward:* Using understanding of concepts and procedures to solve problems  
*Away from:* Only the mastery of isolated concepts and procedures

6. **Course Expectations:** Students will be expected to read the text **prior** to class, to complete all assigned problems and projects on time (at the beginning of class), keep a well organized notebook, and to seek outside assistance when difficulties are encountered. Take home assignments will be accepted up to one day late but 20 points will be deducted from the grade received on the assignment for any late work. Textbook assignments will not be taken late. All Assignments should be NEATLY written **in pencil** and all supporting work must be shown.
7. **Absence Policy:** Regular attendance is essential for successful completion of this course. A student absent from a test or other class assignment will be given a **zero** unless excused in advance by the instructor. Extenuating circumstances such as illness or injury will be evaluated on a case- by- case basis but must be accompanied by a doctor's note. Please have supporting documentation available for review upon returning to class or you will not be allowed to make up the missed work. *More than 4 absences from this class may result in a grade of F for the semester. Students with more than 4 absences will automatically receive a 0 for attendance.*
8. **Grading Policy:** The course grade will be determined as follows:  
Average of Unit Tests = 50%  
Average of Homework/ notebook/labs/quizzes/projects = 25%  
Attendance = 5% (0 absences – 100, 1 absence – 90, 2 absences – 80, 3 abs – 70, 4 abs – 60, etc.)  
Final Exam = 20%

| A       | A-     | B+     | B      | B-     | C+     | C      | C-     | D+     | D      | D-     | F    |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 93-100% | 90-92% | 87-89% | 83-86% | 80-82% | 77-79% | 73-76% | 70-72% | 67-69% | 63-66% | 60-62% | <60% |

9. **Academic Honesty:** The integrity of students and their written and oral work is a critical component of the academic process. All written work submitted in this course will be individual work unless instructed otherwise. Students must properly document all outside sources used for projects, programs, and

homework. The submission of another's work as one's own is plagiarism, and will be dealt with using the procedures outlined in the Undergraduate Catalog.

10. **Course Outline:** This schedule is a **rough** estimation of the time that will be spent on the following topics. This schedule may be modified by the instructor at any time during the course.

| <b>Week of</b>   | <b>Topic</b>   | <b>Assessment</b>   |
|------------------|--|---|
| March 25         | Problem Solving/ Algebraic Thinking  |   |
| April 1          | Problem Solving/ Algebraic Thinking  |   |
| April 8          | Problem Solving/ Algebraic Thinking  | <b>Take Home Quiz Due April 9<sup>th</sup><br/>Test 1</b> |
| April 15         | Number Systems/Bases   |   |
| April 22         | Number Systems/Bases/Fractions   |   |
| April 29         | Fractions  | <b>Test 2</b>   |
| May 6            | Operations   |   |
| May 13           | Operations   |   |
| May 20           | Operations   | <b>Test 3</b>   |
| May 27           | Number Theory  | <b>Memorial Day – No class May 27th</b>                   |
| June 4<br>June 6 | Final Exam for 8:00 class from 8:00 – 10:00<br>Final Exam for 9:00 class from 8:00 – 10:00 | <b>FINAL EXAM</b>   |

11. **FIRE!!** In the event of a fire alarm signal students will exit the building in a quick and orderly manner through the nearest hallway exit. Learn the floor plan and exits of this building. Do not use elevators. Crawl on the floor if you encounter heavy smoke. Assist disabled persons and others if possible without endangering your own life.