

PACIFIC UNION COLLEGE SYLLABUS

MATH 211

FOUNDATIONS OF SCHOOL MATH I

Autumn 2007

COURSE DESCRIPTION: The logic and structure underlying school mathematics. Concepts, procedures, problem solving, and applications at concrete, pictorial, and abstract levels. Problem solving techniques, the arithmetic of whole numbers, fractions, decimals, integers, rational and real numbers, ratio and proportion, and percent.

Prerequisite: High School Algebra II or MATH 096 (Intermediate Algebra) or permission of instructor.

OBJECTIVES: This course is designed to prepare the future elementary school teacher for the mathematics encountered in the classroom. Your experiences in this course will enable and encourage you to engage mathematical problems in a variety of ways and to demonstrate why particular answers are correct. You will develop a deep understanding of mathematics that enables you to explain mathematical ideas and the reasons why algorithms yield correct results.

TEXT: Bennett & Nelson, *Mathematics for Elementary Teachers, a Conceptual Approach*, McGraw-Hill, seventh edition, 2007. Please bring this textbook and a calculator to each class.

INSTRUCTOR: Lloyd Best (lbest@puc.edu). Phone: office/965-6591; home/942-9680. Fax: office/965-7135.

OFFICE: CSH 238G.

OFFICE HOURS: Monday: 9-10, 2-4; Tuesday: 9-10, 11-12, 2-4; Wednesday: 9-10; Thursday: 11-12; Friday: 9-10.
I am also happy to help you at other times by appointment.

CLASS EXPERIENCES AND ATTENDANCE: Each day you can look forward to interactive presentations of the day's lesson. You will frequently be involved in group exploration and discovery. Occasionally you will be called upon to present some of your own solutions to the previous day's assignment.

Previous students have discovered that missing three or more class presentations makes it very difficult to pass the course. Some explanations presented in class are not in the text. In addition, announcements made during classes have the same force as statements in this syllabus.

STUDYING WITH OTHERS: You are encouraged to study with other classmates. Comparing ideas and solutions helps to clarify understandings. Be sure that your written assignments reflect your own understanding and not just what someone else figured out. You probably don't really "know" it if you can't write it out yourself.

LEARNING DIFFERENCES: PUC strives to accommodate students with documented learning differences. If you have a learning disability, or think you might have one, please check with the Teaching and Learning Center. They can provide a diagnosis and will work with us to accommodate your situation.

GRADING: The final grade will be based on Homework and Quizzes (35%), Tests (65%).

A	A-	B+	B	B-	C+	C	C-	D+	D	D-
92%	88%	84%	80%	75%	70%	65%	60%	57%	53%	50%

HOMEWORK: Assignments will be announced in class. You are expected to clearly communicate your reasoning by showing your work on problems and by using appropriate writing techniques. Appropriate mathematical symbolism and terminology is expected.

Before working on the assignment you will need to carefully read the textbook. It is very instructive to work through the textbook examples.

Late work is not accepted unless delayed by illness or other emergency. Any late work must be submitted directly to me the day you return to class. If approved, the work will either be graded or averaged with other homework scores. Late assignments are not accepted unless due to illness or other emergency.

QUIZZES: You should expect a quiz at the end of each week. An unexcused missed quizzes will not be made up. If you must miss a quiz, you must notify me in advance. (You may leave a voice mail message at 6591.) An excused missed quiz either will be rescheduled or will be averaged with other quiz scores.

TESTS: Tests must be taken at the scheduled time (see schedule on the next page). Only tests which are missed due to illness or emergency circumstances may be made up. If you must miss a test, you are required to notify me in advance.

ACADEMIC INTEGRITY: You are encouraged to work with other students on assignments, but your work should reflect your own understanding. All quiz and test work must be completely your own. A student involved in cheating (or assisting another student in cheating) on a test should expect to be dismissed from the course with a failing grade. See PUC's Code of Academic Integrity (page 213 of the *General Catalog*) for further details.

Date	Homework To Turn In This Day	Class Lecture/Discussion
Sep 26	None	§1.1: Introduction to Problem Solving (p3-9)
Sep 28	H1.1a(p13):1,2,5,6,8	§1.1: Introduction to Problem Solving, continued (p9-12)
Oct 1	H1.1b(p14):9,10,12,13,14,17,18,20,26	§1.2: Patterns and Problem Solving (p20)
Oct 3	H1.2(p30):1,2,3,7,9,10,23,27,28,31,40	§1.3: Problem Solving with Algebra (p37)
Oct 5	H1.3(p49):1-21odds	§2.1: Sets and Venn Diagrams (p61)
Oct 8	H2.1(p72):5-11,15,17,19,31,33,34	§2.2: Functions, Coordinates, and Graphs (p78)
Oct 10	H2.2(p94):1-3,5,7,9,11,13,18,23,25	§2.3: Introduction to Deductive Reasoning (p105)
Oct 12	H2.3(p116):1-23odds	§3.1: Numeration Systems (p125)
Oct 15	H3.1(p138):1,2,7-9,11,13,16,20,25,29	§3.2: Addition and Subtraction (p143-153)
Oct 17	H3.2a(p158):3,5,7,10,12,14,16,19-22	§3.2: Addition and Subtraction, continued (p153-157)
Oct 19	H3.2b(p159):23-27,29-35	§3.3: Multiplication (p164)
Oct 22	H3.3(p180):5,7,9-11,13,15,18-30evens	§3.4: Division and Exponents (p187-194)
Oct 24	H3.4a(p203):2,3,5,7a,9a,11a,18	§3.4: Division and Exponents, continued (p194-202)
Oct 26	H3.4b(p204):23, 26-38evens	Review
Oct 29	Study for the test	Midterm Test Chapters 1-3 [100 points]
Oct 31	Begin reading §4.1 (p215)	§4.1: Factors and Multiples (p215)
Nov 2	H4.1(p229):3,6,7,9,10,14-20evens,25,26,28,30	§4.2: Greatest Common Factor, Least Common Mult (p235)
Nov 5	H4.2(p248):3,6a,8,11,12,15,17,21,28	§5.1: Integers (p257-265)
Nov 7	H5.1a(p276):1,2,5,7,9,12ab,13,14,17,18	§5.1: Integers, continued (p266-275)
Nov 9	H5.1b(p277):19-23,25,28,30,38,50	§5.2: Introduction to Fractions (p282)
Nov 12	H5.2(p303):2,4,6,9,12,14,20-30evens	§5.3: Operations with Fractions (p310-318)
Nov 14	H5.3a(p328):5abe,7,13,18,20,21	§5.3: Operations with Fractions, continued (p318-328)
Nov 16	H5.3b(p329):4,16,24,26,28,31,34,38	Review
	<i>Thanksgiving Break</i>	<i>No Class</i>
Nov 26	Begin reading §6.1 (p341)	§6.1: Decimals and Rational Numbers (p341)
Nov 28	H6.1(p358):3-5,8,9,11,15,22,26,35,45	§6.2: Operations with Decimals (p364)
Nov 30	H6.2(p382):9-21odds,25,29,40	§6.3: Ratio, Percent, & Scientific Notation (p389-399)
Dec 3	H6.3a(p406):1,2,5,10,12,13,30,31	§6.3: Ratio, Percent, & Scientific Notation, cont (p399-405)
Dec 5	H6.3b(p407):14-16,18-23,33,42	§6.4: Irrational and Real Numbers (413)
Dec 7	H6.4(p427):1,3,5,7,13,17,21,33,38	Review
Dec 13	Thursday, 9:45 a.m.	FINAL TEST Chapters [125 points]