

**Math in the Modern World – Math 101
Fall 2007**

PROFESSOR: Richard Hilliard
TEXT: Using and Understanding Mathematics
AUTHOR(S): Bennett and Briggs
OFFICE: Bouillon 115
PHONE: 963-1720 EMAIL: hiliarr@cwu.edu
OFFICE HOURS: T. B. A.

The course is project oriented. After the material is introduced by me, you will work on projects in groups of 4, for 2 of the mail topics. Topic 1 (Reasoning, Fallacies and Argument Analysis), and Topic 3 (Voting). Other topics covered will be, "Borrowing, Credit, and Interest," and "Gaming Theory and Decision Making." From time to time, we will discuss other interesting concepts, i.e. Exponential Growth and Story Problems. The projects that are to be handed in are to be double spaced, typed and 2 pages in length. You will be graded on style of presentation, as well as spelling, grammar and content. A calculator is mandatory for each student. Sharp has an excellent \$10.00 calculator, which is sufficient for the class. Daily attendance is expected and considered necessary for success. **N.B.:** NO EARLY OR LATE FINALS! NO MAKE-UP QUIZZES!!

<u>Your Grade</u>		<u>Grade Scale</u>	
Projects (2)	30%	A	90-100
		B	80-89
Quiz (4)	40%	C	65-79
		D	55-64
Final	30%	F	Below 55

Final: Tues., Dec. 5, 2006
12:00 – 2:00 p.m.

Course Outline

Chapter 1	<u>Thinking Critically</u>
1A:	Recognizing Fallacies
Chapter 2	<u>Approaches to Problem Solving</u>
2B:	Problem Solving Guidelines (Polya)
Chapter 3	<u>Numbers in the Real World</u>
3A:	Uses and Abuses of Percentages
Chapter 4	<u>Financial Management</u>
4A:	The Power of Compounding
4B:	Savings Plans and Investments
4C:	Loan Payments, Mortgages
Chapter 7	<u>Probability</u>
Chapter 8	<u>Exponential Astonishment</u>
8A:	Growth: Linear vs. Exponential
8B:	Doubling Time and Half-life
Chapter 9	<u>Modeling our World</u>
9A:	Functions: The Building Blocks of Mathematical Models
9B:	Linear Modeling
9C:	Exponential Modeling

Learner Outcomes

The student will have the ability to:

- Recognize a fallacious argument
- Utilize the 4-step problem-solving process (variation of Polya's)
- Recognize the uses and abuses of percentages: how percents can be used to justify or distort
- Learn basic financial management – e.g., savings plans and investments
- Model real life situations utilizing linear and exponential concepts