DEPARTMENT: Math   **COURSE NUMBER:** 58

TITLE: Quantitative Reasoning   **UNITS:** 3   **CAN NUMBER:**

TOTAL COURSE HOURS: 54   **LECTURE HOURS:** 54   **LAB HOURS:** 0

COREQUISITE(S): None

PREREQUISITE(S): Math 50 with "C" or better or its equivalent

PREREQUISITE REVISION: Is there a significant change in item II(B)?   Yes [ ]   No [X]
If yes, validate with a new prerequisite content review summary form (Appendix C of Prerequisite Handbook). Attach to course outline.

RECOMMENDATION(S):
　　　　　Language [X]   Mathematics [X]   Other [ ] _____

I.   CATALOG/CLASS SCHEDULE DESCRIPTION
　　Interpretation of and reasoning with quantitative information. Coverage of logic; units analysis; uses and abuses of percentages, ratios, and indices; financial management; and statistics. This course satisfies the AA and AS degree requirement but does not satisfy the prerequisite for a transferable math course.

II.   COURSE CONTENT

　A. **Course Purpose**
　　　To prepare the student to understand many of the quantitative issues they will encounter in
a wide variety of college courses, in a nonphysical science career, and in life.

　B. **Course Objectives**
　　　At the conclusion of this course, the student will be able to, from among the following in covering the topics of the course outline:
　　　Identify an argument's premises and conclusions.
　　　Recognize fallacious arguments.
　　　Use Venn diagrams.
　　　Evaluate arguments that use numbers.
　　　Identify and convert units.
　　　Use units to check answers.
　　　Apply strategies for problem solving.
　　　Solve problems that use percentages, ratios, indices, tables or graphs and identify abuses.
　　　Identify sources of error.
　　　Apply rounding rules.
　　　Identify contingency table errors.
　　　Use different interest formulas.
　　　Use different types of investments.
　　　Explain bond yield.
　　　Calculate loan payments.
　　　Use budget principles.
　　　Recoginize different sampling methods.
　　　Interprete different statistical graphs.
　　　Distinguish between correlation and causality.
　　　Calculate measures of center and variation.
　　　Recognize conditions under which a normal distribution can be expected.
　　　Conduct a basic hypothesis test.

C. **Course Topical Outline**
Logic and analysis of arguments that use numbers
Units analysis and unit conversions
Problem solving strategies
Uses and abuses of percentages, ratios, indices, tables, and graphs
Error analysis
Financial management
Statistical reasoning

D. **Critical Thinking**
Activities that require critical thinking include:
recognizing fallacious arguments; using units to check calculations; indentifying sources of error; distinguishing between correlation and casuality; hypothesis testing

III. GENERAL METHODS OF INSTRUCTION
Please indicate all appropriate methods of instruction
Lecture, discussion, and collaborative learning.

IV. METHODS OF ASSESSMENT
Please indicate all methods of assessment
May include quizzes, problem solving exercises, exams, and projects.

V. MATERIALS OF INSTRUCTION

A. Textbook(s)
Using and Understanding Mathematics: A Quantitative Reasoning Approach, 3rd edition by Bennett and Briggs

B. Other Material (if applicable)

VI. ASSIGNMENTS

Degree Applicable Course:

A. Reading Assignments
Textbook

B. Writing Assignments
Homework

C. Outside Assignments
Problem solving exercises/activities
Skills practice

VII. APPROPRIATENESS TO COLLEGE MISSION *(Check all that apply):*

_X_	*Lower Division Degree Credit*	___	*Community Interest*
___	*Occupational Preparation*	___	*Upgrade of Skills*
___	*Transfer Course*	_X_	*Remedial*

Revised & Classified:

Yuba Community College District
New Course Addendum

Course Dept/Number: ___Math 58_____   **Course Title:** __Quantitative Reasoning____

Site of origin: Marysville [X]   Woodland [ ]   Lake [ ]   District [ ]

1. For what student population is this course intended?
    Students seeking an AA or AS degree

2. What is the justification for adding this course?
    To provide students earning A.A. and A.S. degrees with quantitative skills needed to deal with an increasingly numerically oriented world. This course will satisfy the A.A. and A.S. degree requirements.

3. Are there existing courses with similar content? Yes [ ]   No[X]

    If yes, list the courses considered and answer the questions below:

    _____

    a. Why are they not suitable for the content of this course?

    b. How might they be affected by offering this course?

4. What new or additional facilities, equipment, staffing or other non-budgeted items will be required to teach the course? How will they be provided?
    Additional staff maybe required to cover additional math sections.

5. What new or additional library, media and other district resources will be needed to offer the course?
    None

6. If this course is started from grant funding, how will it be continued thereafter?
    N/A