

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Mathematics</u>
COURSE RUBRIC AND NUMBER	<u>MATH 1332</u>
COURSE TITLE	<u>Contemporary Mathematics</u> <u>(Quantitative Reasoning)</u>
COURSE CREDIT HOURS	<u>3 3 : 0</u> Credits Lec Lab

I. Catalog Description

Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Provides an introduction to some of the great ideas of mathematics. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications, geometry, and algebra. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered. **Prerequisite: MATH 0404 with a "C" or better or by placement exam. (3:0).**

II. Course Objectives

Upon completion of this course the student will comprehend some of the great ideas of mathematics, and will be able to demonstrate their understanding of the following:

- A. Unit I. Sets and Critical Thinking
 1. Express in oral and written formats the differences between deductive reasoning, inductive reasoning, and estimating. Evaluate and solve problems using deductive reasoning, inductive reasoning, or estimating.
 2. Present, discuss and evaluate numerically, graphically and symbolically natural numbers, set concepts, subsets, Venn diagrams and set operations, De Morgan's Laws, and application of sets.

- B. Unit II. Logic
 1. Translate logical statements and logical connectives from language to math symbols orally, visually, and written formats.
 2. Utilize truth tables for negation, conjunction, disjunction, conditional, and biconditional situations.
 3. Utilize truth tables for equivalent statements, symbolic arguments, Euler diagrams, and syllogistic arguments.

- C. Unit III. Numeration and Number System
 1. Examine and compare early numeration systems, place-value systems, different base systems of numbers and conduct mathematical operations involving the different systems.
 2. Identify prime numbers and utilize divisibility rules.
 3. Investigate and discuss additional topics from number theory – perfect numbers, Mersenne numbers, etc.

- D. Unit IV. Geometry and Graph Theory
1. Evaluate and apply the concepts of points, lines, planes, and angles.
 2. Compute perimeters, areas, and volumes.
 3. Comprehend basic graph theory – Euler and Hamiltonian circuits
 4. Explain and discuss map coloring and how maps become graphs.
- E. Unit V. Probability and Statistics
1. Explain and discuss basic concepts in probability and statistics.
 2. Use probability to measure uncertainty.
 3. Explain and discuss how the principles of probability can be used to understand coincidences and random behavior.
 4. Describe data in meaningful ways with graphs, pictures, and number measurements.
- F. EPCC Core Learning Outcomes
- Upon successful completion of this course, students will:
1. Demonstrate effective written, oral, and/or visual **communication skills**.
 2. Apply **critical thinking skills** by engaging in creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.
 3. Demonstrate **empirical and quantitative skills** by formulating an inquiry and then identifying and following an investigative process using empirical and/or qualitative/quantitative reasoning to satisfy the inquiry.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Apply the language and notation of sets.
2. Determine the validity of an argument or statement and provide mathematical evidence.
3. Solve problems in mathematics of finance.
4. Demonstrate fundamental probability/counting techniques and apply those techniques to solve problems.
5. Interpret and analyze various representations of data.
6. Demonstrate the ability to choose and analyze mathematical models to solve problems from real-world settings, including, but not limited to, personal finance, health literacy, and civic engagement.

III. Evaluation

There will be at least three in class exams (100 points each) and one required in class comprehensive final exam to evaluate student learning for the course. Homework, quizzes, or other assignments may count toward the final grade at the instructor's discretion. Refer to instructors course requirements for specific details. Grades will be assigned according to the following.

A	90-100
B	80-89
C	70-79
D	60-69
F	below 60 or for cheating

The final grade would then be computed by averaging the 5 tests (4 unit tests and the final), and the grade for homework and quizzes. (Suggestion: Use the final grade to replace the lowest test grade, not to drop the lowest test grade.)

I and W Grades: The student is responsible for completing the necessary forms for I or W (except as noted below). I and W grades may be assigned whenever appropriate deadlines are met. To be eligible for an I, the student must complete 80% of the course with at least a 75% average.. The proper forms must also be signed by both the student and the instructor before being submitted to the registrar.

IV. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

V. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.