MATH 1332 CONTEMPORARY MATHEMATICS I

COURSE DESCRIPTION (3 credits)(3 lecture hours per week)
This course begins with a study of the principles of logical reasoning and statistical reasoning. This is followed by problem solving and a study of number uses in the real world. The course concludes with math of finance, probability and statistics, and math and the arts. Prerequisite: Math 0312 or departmental approval.

INTRODUCTION
This course is designed for liberal arts, humanities, and human sciences majors, who are not intending to pursue teacher certification. This course is not intended for mathematics, science, engineering, or business majors. Topics of this course include sets, logic, number theory, measurement, geometric concepts, and an introduction to probability and statistics.

COURSE OBJECTIVES
The student should gain an understanding of the beauty and uses of mathematics. This course will prepare the student to be aware of the uses and abuses of logic, percentages, and statistics, as well as to gain an understanding of interest, probability, and mathematics and the arts. The student must demonstrate an understanding of the topics covered through testing, presentations, and/or papers.

METHODS FOR ACCOMPLISHING OBJECTIVES
1. Lecture
2. Special Problem Sessions
3. Instructional Media
4. Unit Examinations
5. Peer Tutoring
6. Faculty Tutoring

LEARNING OUTCOMES
Upon successful completion of the course, the student will demonstrate acquisition of the following skills.
1. Find expected value of a specified event.
2. Evaluate the validity of a chain of conditional statements.
3. Solve a conversion of units application.
4. Calculate the monthly payment required and total payment made on an outstanding debt.
5. Use scientific notation to solve a problem involving very large or very small quantities.
6. Carry out a specified unit conversion.
7. Solve a two-step application problem involving both geometric and algebraic formulas.
8. Determine positive or negative correlation and whether the correlation is due to coincidence, a common underlying cause, or a direct cause.
9. Determine whether a study involves selection bias, participation bias, both or neither.
10. Determine whether a given figure displays symmetry.

BIBLIOGRAPHY
Text: Using and Understanding Mathematics, 4th ed., by Bennett and Briggs
A. THINKING CRITICALLY
1. Recognizing Fallacies
2. Propositions and Truth Values
3. Sets and Venn Diagrams
4. Analyzing Arguments

B. APPROACHES TO PROBLEM SOLVING
1. The Problem-Solving Power of Units
2. Standardized Units: More Problem-Solving Power
3. Problem-Solving Guidelines and Hints

C. NUMBERS IN THE REAL WORLD
1. Uses and Abuses of Percentages
2. Putting Numbers in Perspective
3. Dealing with Uncertainty
4. (Optional) How Numbers Deceive

D. FINANCIAL MANAGEMENT
1. The Power of Compounding
2. Savings Plans and Investments
3. Loan Payments, Credit Cards, and Mortgages
4. Income Taxes
5. (Optional) Understanding the Federal Budget

E. STATISTICAL REASONING
1. Fundamentals of Statistics
2. Should You Believe a Statistical Study?
3. Statistical Tables and Graphs
4. Graphics in the Media
5. Correlation and Causality

F. PROBABILITY: LIVING WITH THE ODDS
1. Fundamentals of Probability
2. Combining Probabilities
3. The Law of Large Numbers
4. Assessing Risk
5. Counting and Probability

G. MODELING WITH GEOMETRY
1. Fundamentals of Geometry
2. Problem Solving with Geometry
3. Fractal Geometry

H. MATHEMATICS AND THE ARTS
1. Mathematics and Music
2. Perspective and Symmetry
3. Proportion and the Golden Ratio

EVALUATION PROCEDURES
1. Unit Exams
2. Class Assignments
3. Quizzes
4. Projects
5. Papers
6. Comprehensive Final Exam

Letter grades will be assigned according to the following scale:
90-100⇒A 80-89⇒B 70-79⇒C 60-69⇒D 0-59⇒F

• I Incomplete – An incomplete may be awarded when the instructor determines that minimal work on the part of the student and the instructor will complete the course requirements. An incomplete grade not changed by the instructor to a grade of completion (A, B, C, D, or F) by the end of the following semester will automatically be changed to an F.
• W Withdrawal – Students who file withdrawal requests by the published deadline will receive a grade of W.

Attendance
Regular attendance in class is expected. If an absence is unavoidable, the student is responsible for completing all work missed during the absence. Any work missed and not subsequently completed will affect the grade of the student regardless of the reason for the absence. It should be noted that ceasing to attend class does not terminate enrollment. It is the student's responsibility to initiate the withdrawal procedure. Therefore, a student who ceases to attend class without officially withdrawing from that class may receive a failing grade. Note, however, that withdrawal from class may affect enrollment in other courses, insurance eligibility, financial aid, and/or veteran’s benefits.

Classroom Behavior
It is expected that students will behave in a mature and courteous manner. Disruptive behavior during class will not be tolerated. Students are expected to be attentive, take notes, ask pertinent questions, arrive on time, and not leave until the class is dismissed. Conflicts which arise between the scheduled class time and the student's personal schedule must be resolved by the student.

Camcorders and any other video recording devices are prohibited in the classroom. Audio recording may be allowed ONLY WITH THE PERMISSION OF THE INSTRUCTOR.

CELLPHONES are not to be used and are not to ring during class. Cell phones are not to be out during tests. If there are special circumstances, arrangements must be made with the instructor.

ACADEMIC HONESTY IS ASSUMED. A student found guilty of scholastic dishonesty is subject to disciplinary action. Violations such as plagiarism, cheating on tests, and collusion are described in the ACC Student Handbook. Consequences are at the discretion of the instructor. Any student caught cheating in the course will be given an F for the course and will forfeit any right to a grade of W.

ADA Compliance
This college will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the policy of ACC to provide reasonable accommodations for qualified individuals who are students with disabilities. It is the student’s responsibility to contact the Counseling Center in a timely manner to arrange for appropriate accommodations.