Utah Valley University

MATH 1090 College Algebra for Business 3.0 credit hours

Instructor: Carolyn Hamilton  Carolyn.Hamilton@uvu.edu
Office location: WB 212

Office hours:

Prerequisite: MAT 1010 or MAT 1000 with a grade of C or better within two years, or appropriate placement

e-Text: College Algebra in Context, Harshbarger/Yocco, 5e (2012), Person publishing

Texts/Fees: A printed text book is not required for this course. This class will use an electronic text and electronic course. Access to the electronic homework will be approximately $100.

Course Description:
Uses linear, quadratic, power, polynomial, rational, exponential, logarithmic, and logistic functions to analyze business applications such as market equilibrium, rates of change, cost-benefit analysis, and inflation. Includes systems of linear and non-linear equations and inequalities, matrices and matrix equations, sequences and series, and financial mathematics.

Course Objectives
• Correctly solve business applications using numerical, algebraic, geometric, and/or statistical methods.
• Fully analyze data by using technology to accurately create scatterplots and determine goodness of fit for linear, quadratic, power, exponential, logarithmic, and logistic models.
• Apply knowledge of rates of change, including average rate of change, constant rate of change, and constant percent change, to determine appropriateness of mathematical model for a given application.
• Efficiently solve complex problems requiring several mathematical strategies and/or techniques.
• Produce precise representations of mathematical models using symbolic, visual, numerical, and verbal conventions
• Accurately perform the algebra of functions, including transformations and compositions of functions.
• Correctly analyze and solve compound interest and annuity problems, including finding present value, future value, number of payments, and interest rate.
**Attendance:** Students are expected to attend class and are responsible for all information presented in class. **Caution:** experience has shown that excessive absences almost always result in a failing grade.

**Homework:** Spending the time necessary to be successful in this class is critical, which means that each student needs to plan on spending **at least 6 hours** doing homework every week. The assigned problems are found in the online homework and come as part of the e-text. Almost all of the assigned problems for the homework are algorithmic problems that help each student master the material. Diligent practice in completing a wide variety of mathematical problems is the only way to master the material sufficiently to pass this class. Using the online software that comes as part of the e-text will improve each student’s probability of passing this class.

**Homework** Late work is allowed but is penalized 5% per day for each day late. Only problems submitted after the due date are subject to penalty.  
**Quizzes:** Weekly quizzes are found in the online software. You are allowed 3 attempts and each is timed. Late quizzes will be deducted 5% per day. 
**Exams:** Exams will be given in the CTC according to the schedule, except for the final exam which is given in class. If you fail to take a test you get a 0% on that test. **There are no retakes or dropped tests.** The final exam will be comprehensive. You will be allowed to use a scientific calculator on the exams.

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**Cheating and Plagiarism Policy Procedures**  
This document was taken from Utah Valley Institution Policy 541, *The Student Rights and Responsibilities Code*  
**Plagiarism** includes, but is not limited to, failure to indicate the source with quotation marks or footnotes where appropriate if any of the following are reproduced in the work submitted by a student:  
1. A phrase, written or musical.  
2. A graphic element.  
3. A proof.  
4. Specific language.  
5. An idea derived from the work, published or unpublished, of another person.  
**Cheating** includes but is not necessarily limited to:  
1. Submission of work that is not the student’s own for papers, assignments or exams.  
2. Submission or use of falsified data.  
3. Theft of or unauthorized access to an exam.  
4. Use of an alternate, stand-in or proxy during an examination.
5. Use of unauthorized material including textbooks, notes or computer programs in the preparation of an assignment or during an examination.

6. Supplying or communicating in any way unauthorized information to another student for the preparation of an assignment or during an examination.

7. Collaboration in the preparation of an assignment. Unless specifically permitted or required by the instructor, collaboration will usually be viewed by the university as cheating. Each student, therefore, is responsible for understanding the policies of the department offering any course as they refer to the amount of help and collaboration permitted in preparation of assignments.

8. Submission of the same work for credit in two courses without obtaining the permission of the instructors beforehand.

**UTAH VALLEY UNIVERSITY DEFINITION**

Cheating is the act of using or attempting to use or providing others with unauthorized information, materials or study aids in academic work. Cheating includes, but is not limited to, passing examination answers to or taking examinations for someone else, or preparing or copying other's academic work.

Plagiarism is the act of appropriating another person's or group's ideas or work (written, computerized, artistic, etc.) or portions thereof and passing them off as the product of one's own work in any academic exercise or activity.

Fabrication is the use of invented information or the falsification of research or other findings. Examples include but are not limited to:

- Citation of information not taken from the source indicated. This may include the incorrect documentation of secondary source materials.
- Listing sources in a bibliography not used in the academic exercise.
- Submission in a paper, thesis, lab report or other academic exercise of falsified, invented, or fictitious data or evidence, or deliberate and knowing concealment or distortion of the true nature, origin, or function of such data or evidence.
- Submitting as your own any academic exercise, (e.g., written work, printing, sculpture, etc.) prepared totally or in part by another.

If a student has cheated or plagiarized on an assignment, the faculty member has the following responsibilities:

- Collect all relevant information about the infraction.
- Document the situation and report it to the department chair.

The department chair and professor need to contact the dean assigned to address student issues with the documentation. The assigned dean then would turn all documentation over to the University Director of Judicial Affairs.

- As a group, a decision should be made for the infraction which should include one of the following:
  - A warning
  - Requiring a student to retake an exam(s)
  - Requiring a student to re-write a paper(s) and/or repeat an assignment(s)
• A grade reduction
• A failing grade
• Probation with specified conditions
• Suspension from the department, school, or institution (must be reviewed and confirmed by Vice President of Academic Affairs and President)
• Expulsion from the department, school, or institution (must be reviewed and confirmed by the Vice President of Academic Affairs and President)

The final documentation must be forwarded to the Director of Judicial Affairs. It is critical to remember that all students must be treated equally according to the infraction.

**Essential Learning Outcomes addressed in the course:**

1. Integrative and Applied Learning
   1.1.3 Discover connections among disciplines
   1.1.4 Create appropriate questions and possible solutions to those questions

2. Intellectual and Practical Skills Foundation
   2.2 Quantitative Reasoning
      2.2.1 Understand, interpret and represent mathematical information using symbolic, visual, numerical and verbal conventions
      2.2.2 Solve problems using numeric, algebraic, geometric and statistical methods
      2.2.3 Use quantitative information in context, and determine reasonableness of results
      2.2.4 Use appropriate mathematical tools in problem solving (e.g. calculators, computers, measurement instruments and manipulatives)
   2.3 Qualitative Reasoning: Critical, Analytical and Creative Thinking
      2.3.1 Evaluate the logic, validity and relevance of arguments
      2.3.2 Gather, interpret and evaluate information in a variety of forms (e.g. written, verbal, oral, visual, and aesthetic)
      2.3.3 Use critical skills of analysis, evaluation, synthesis and application

4. Professional Competency
   4.3 Problem Formation and Solution
      4.3.1 Formulate and recognize a coherent problem and a reasonable solution
      4.3.2 Recognize that the limits of problem solving methods impose limits on the solutions obtained
      4.3.4 Recognize that the same body of data may support more than one solution