

General Education Course Objectives and Learning Outcomes

Course

Name: College Algebra

Course Number: MATH 1113

Submitted by: Leslie Bain

Department: Mathematics

Course Facilitator (Along with the department head, this faculty member helps facilitate discussions of assessment results and course commonalities among all instructors who teach the course): Leslie Bain

COMMON COURSE OBJECTIVES AND STUDENT LEARNING OUTCOMES THAT ARE OR WILL BE LISTED ON THE SYLLABUS OF EVERY SECTION OF THIS COURSE.

These must include the appropriate general education goal(s) and their associated learning outcomes (see below), as per the faculty handbook section on syllabi.

<i>Course objectives:</i>	MATH 1113 is designed to prepare students for higher level mathematics courses and to serve as the general education mathematic requirement. This course should also encourage students to apply quantitative reasoning.
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<i>Student learning outcomes:</i>	Upon satisfactory completion of the course, students will be able to: 1. Demonstrate understanding and knowledge of properties of functions, which include domain and range, operations, compositions and inverses. 2. Recognize and differentiate characteristics of linear, absolute values, quadratic, higher-order polynomial, rational, radical, exponential, and logarithmic functions. 3. Solve equations and inequalities related to linear, absolute values, quadratic, higher-order polynomial, rational, radical, exponential, and logarithmic functions. 4. Use mathematical models to problem solve. 5. Apply graphing techniques of transformations to common algebraic functions. 6. Recognize, solve and apply systems of linear equations and matrices.
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ADHE ACTS INFORMATION FOR THIS COURSE (IF APPROPRIATE)

<i>ACTS Course number:</i>	MATH1103
<i>Copy the ACTS course objectives and learning outcomes:</i>	General Description: Study of functions including, but not limited to, absolute value, quadratic, polynomial, rational, logarithmic, and exponential; systems of equations; and matrices. Expected Student Learning Outcomes: The student will demonstrate 1)The ability to perform and solve basic function operations and algebraic problems using appropriate vocabulary, 2)Critical thinking to formulate decisions and problem solving based on reasoning and analysis, 3)The appropriate use of technology to supplement and enhance conceptual understanding, visualization, and inquiry, 4)The ability to synthesize information from a variety of sources to solve problems and interpret results.

WHICH ATU GENERAL EDUCATION GOALS DOES THIS COURSE FULFILL?

(Note: Courses will be assessed via the GE goal rubrics listed on the GE assessment webpage. Every goal has a separate assessment based on the learning objectives listed below.)

- Communicate effectively**
 - Written communication**
Learning Outcomes:
 1. Present written thoughts in a cohesive manner
 2. Synthesize information into a collective argument
 3. Use formal grammar and mechanics
 - Oral communication**
Learning Outcomes:
 1. Verbally present thoughts in an organized manner
 2. Speak with confidence on a variety of subjects
 3. Adapt to multiple audiences including a professional audience

Apply scientific and quantitative reasoning

- Scientific reasoning** --- recognize the power of the scientific process through its ability to provide ways to experimentally verify and predict natural phenomena

Learning Outcomes:

1. Identify hypothesis,
2. Classify relevant variables
3. Evaluate experimental design
4. Formulate reasonable explanations of natural phenomena based on observations of both quantitative and qualitative data

- Quantitative reasoning** --- use mathematical formulae or processes in real world situations

Learning Outcomes:

1. Perform a quantitative analysis of a situation
2. Make a decision based upon the outcome of a quantitative analysis of a situation
3. Analyze information presented in a graphical format
4. Create a mathematical model of a real world situation

Apply the value of the arts and humanities

Learning Outcomes:

1. Identify ideas represented in art, music, theatre, film, literature, or philosophy
2. Relate ideas in art, music, theatre, film, literature, or philosophy to the global context in which they were created
3. Interpret the global significance of works of art, music, theatre, film, literature, or philosophy to the human experience

Think critically

Learning Outcomes:

1. Identify an underlying argument
2. Make reasonable inferences from an argument
3. Assess the quality of evidence
4. Identify the thesis and conclusions in an argument

Develop ethical perspectives

Diversity

Learning Outcomes:

1. Identify examples of power and privilege
2. Explain the impact of power and privilege in everyday life
3. Describe personal beliefs, attitudes, and biases about people whose experiences, histories, cultures, and appearances are different than one's own

Empathy

Learning Outcomes:

1. Model empathy
2. Apply empathy to change behavior and build better relationships

Leadership

Learning Outcomes:

1. Exhibit integrity and reliability in individual action and institutional activities
2. Practice principle-centered leadership

3. Demonstrate responsibility when interacting with new technologies and information

Practice civic engagement

Learning Outcomes:

1. Recognize the potential for individual civic action to affect change
2. Construct a personal vision of a civic pathway
3. Lead organizations/projects in planning and implementing public participation that address local community needs, issues, and problems

WHICH ASSIGNMENT WILL BE SUBMITTED FOR THE GENERAL EDUCATION ASSESSMENT OF THE GOAL(S) STATED ABOVE?

Note: Each goal requires an assessment submission of student artifacts. For more information, see the GE Assessment webpage.

MATH 1113 addresses a General Education goal which is to apply quantitative reasoning. The course requires students to demonstrate this goal through homework, quizzes, exams, and projects.

Email completed form to the Director of General Education Dr. Erin Clair at eclair@atu.edu

Updated 01/2022