



## Official Course Outline MAC 1105 College Algebra

### General Course Information

**Common Course Number:** MAC1105

**Course Title:** College Algebra

**Prerequisite(s):** Minimum grade of C in either MAT 0025C or MAT 1033C or appropriate score on an approved assessment

**Contact Hour Breakdown:** CR 3 CLASS LAB

**Discipline:** Mathematics

**Catalog Description:** Prerequisite: Minimum grade of C in either MAT 0025C or MAT 1033C or appropriate score on an approved assessment. Course based on the study of functions and their role in problem solving. Topics include graphing, the linear, quadratic, and exponential families of functions, and inverse functions. Students will be required to solve applied problems and communicate their findings effectively. Technology tools will be utilized in addition to analytical methods. Gordon Rule course. Minimum grade of C required if MAC 1105 is used to satisfy Gordon Rule

### Major Topics/ Concepts/ Skills/ Issues

- Linear, Quadratic and Rational Functions
- Exponential and Logarithmic Properties, Functions and Equations
- Functions and Function Notation
- Graphs of Functions and Relations
- Systems of Equations and Inequalities
- Domains and Ranges of Functions
- Operations on Functions
- Inverse Functions
- Absolute Value and Radical Functions
- Applications (such as Curve Fitting, Modeling, Optimization, and Exponential Growth and Decay)

### Major Learning Outcomes with Evidence, Core Competencies and Indicators

#### Learning Outcome 1:

## A. Read and comprehend quantitative information describing real world situations at the college algebra level.

### Corresponding Evidence of Learning

- A1. Use mathematical reasoning and common sense to evaluate answers as being possibly correct or definitely wrong. Complete a sequence of steps to a problem, and decide whether or not the answer is reasonable and logically support your conclusion.
- A2. Given a real-world situation described in words, answer comprehension questions based on the quantitative content in the reading.

### Core Competency: Think

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>• analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Behavioral observation</li> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portf</li> </ul>
<ul style="list-style-type: none"> <li>• employ the facts, formulas, procedures of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Behavioral observation</li> <li>• Classroom assessment technique</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solvi</li> </ul>

### Core Competency: Communicate

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>• employ methods of communication appropriate to your audience and purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Focus group</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Proble</li> </ul>

<ul style="list-style-type: none"> <li>• evaluate the effectiveness of your own and others' communication</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Focus group</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Proble</li> </ul>
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## Learning Outcome 2:

<b>B. Use algebra to model real world situations.</b>		
<b>Corresponding Evidence of Learning</b>		
<ul style="list-style-type: none"> <li>• B1. Given a set of data, determine an appropriate function that models the data, and use that function to make predictions.</li> <li>• B2. Given a real-world problem, model it using the appropriate tools, including algebraic equations or inequalities, a table of values, a graph, or a diagram. Use the model to solve the problem and interpret the results.</li> </ul>		
<b>Core Competency: Think</b>		
<b>Indicators</b>	<b>Level of Integration</b>	<b>Method of Assessment</b>
<ul style="list-style-type: none"> <li>• analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving quiz</li> </ul>
<ul style="list-style-type: none"> <li>• employ the facts, formulas, procedures of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving quiz</li> </ul>

<ul style="list-style-type: none"> <li>integrate ideas and values from different disciplines</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>
<ul style="list-style-type: none"> <li>draw well-supported conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>
<ul style="list-style-type: none"> <li>revise conclusions consistent with new observations, interpretations, or reasons</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>

**Core Competency: Act**

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>apply disciplinary knowledge, skills, and values to educational and career goals</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>

<ul style="list-style-type: none"> <li>• implement effective problem-solving, decision-making, and goal-setting strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving qu</li> </ul>
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### Learning Outcome 3:

#### **C. Recognize the mathematical function concept and describe relationships between variables in real world situations. Use functions expressed verbally, numerically, graphically, and symbolically.**

##### **Corresponding Evidence of Learning**

- C1. Given a functional expression, evaluate and interpret the expression in the context of an applied problem.
- C2. Given a function determine the domain and range.
- C3. Recognize the characteristics common to families of functions.
- C4. Demonstrate and explain how the inverse function can be used to reverse the roles of the independent and dependent variables.
- C5. Perform function operations including composition.

##### **Core Competency: Think**

<b>Indicators</b>	<b>Level of Integration</b>	<b>Method of Assessment</b>
<ul style="list-style-type: none"> <li>• analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving quiz</li> </ul>
<ul style="list-style-type: none"> <li>• employ the facts, formulas, procedures of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving qu</li> </ul>

<ul style="list-style-type: none"> <li>draw well-supported conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>
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**Core Competency: Communicate**

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>evaluate the effectiveness of your own and others' communication</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>

**Core Competency: Act**

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>implement effective problem-solving, decision-making, and goal-setting strategies</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>

**Learning Outcome 4:**

**D. Given the graph of a function, write its algebraic equation. Given an algebraic equation of a function, graph the function or a transformation of the function.**

**Corresponding Evidence of Learning**

- D1. Given the graph of a line, write an algebraic expression for the linear function.
- D2. Given the graph of a parabola which shows the vertex and another point, write an algebraic expression for the quadratic function.
- D3. Given the graph of an exponential function which shows the y-intercept and one other point, write an algebraic expression for the function.
- D4. Given the graph of a polynomial function that has only real roots, write a factored algebraic expression for the function.
- D5. Sketch basic graphs, including absolute value, radical, rational, piecewise, and power functions, and demonstrate how to transform them.
- D6. Recognize whether or not a given function increases or decreases, and model the behavior graphically.

**Core Competency: Think**

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>• analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving qu</li> </ul>
<ul style="list-style-type: none"> <li>• employ the facts, formulas, procedures of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Focus group</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Proble</li> </ul>

**Core Competency: Communicate**

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>• employ methods of communication appropriate to your audience and purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving qu</li> </ul>

<ul style="list-style-type: none"> <li>evaluate the effectiveness of your own and others' communication</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>
<b>Core Competency: Act</b>		
<b>Indicators</b>	<b>Level of Integration</b>	<b>Method of Assessment</b>
<ul style="list-style-type: none"> <li>implement effective problem-solving, decision-making, and goal-setting strategies</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>

**Learning Outcome 5:****E. Recognize, model, and analyze linear functions in real world situations.****Corresponding Evidence of Learning**

- E1. Given a real-world problem about a quantity that changes at a constant rate and an initial value, write a linear function that models the quantity. Additionally, use the function and its graph to answer questions. The student should be able to write the function without using linear regression.
- E2. Given a real-world problem that gives at least two pairs of corresponding values for two variables that are linearly related, write a linear function that models the problem. Additionally, use the function and its graph to answer questions. The student should be able to write the function without using linear regression.

**Core Competency: Think**

<b>Indicators</b>	<b>Level of Integration</b>	<b>Method of Assessment</b>
<ul style="list-style-type: none"> <li>analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/essay</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> </ul>

<ul style="list-style-type: none"> <li>employ the facts, formulas, procedures of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving quiz</li> </ul>
<ul style="list-style-type: none"> <li>draw well-supported conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving quiz</li> </ul>
<b>Core Competency: Act</b>		
<b>Indicators</b>	<b>Level of Integration</b>	<b>Method of Assessment</b>
<ul style="list-style-type: none"> <li>implement effective problem-solving, decision-making, and goal-setting strategies</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving quiz</li> </ul>

**Learning Outcome 6:****F. Recognize, model, and analyze quadratic functions in real world situations.****Corresponding Evidence of Learning**

- F1. Given a real-world problem that is represented by a quadratic function, use the function and its graph to answer questions about corresponding values, the maximum or minimum value, and ranges of values (inequality).
- F2. Given a real-world problem that can be modeled by a quadratic function, find the equation of the function. The student should be able to write the function without using regression.

**Core Competency: Think**

<b>Indicators</b>	<b>Level of Integration</b>	<b>Method of Assessment</b>

<ul style="list-style-type: none"> <li>analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>
<ul style="list-style-type: none"> <li>employ the facts, formulas, procedures of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>
<ul style="list-style-type: none"> <li>draw well-supported conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>

**Core Competency: Act**

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>implement effective problem-solving, decision-making, and goal-setting strategies</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving quiz</li> </ul>

**Learning Outcome 7:****G. Recognize, model, and analyze exponential and logarithmic functions in real world situations.**

**Corresponding Evidence of Learning**

- G1. Given a real-world problem that can be modeled by an exponential function, find the equation of the function. Additionally, use the function and its graph to answer questions. The student should be able to write the function without using regression
- G2. Demonstrate the use of the definition and properties of logarithms to solve exponential equations.

**Core Competency: Think**

Indicators	Level of Integration	Method of Assessment
<ul style="list-style-type: none"> <li>• analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving quiz</li> </ul>
<ul style="list-style-type: none"> <li>• employ the facts, formulas, procedures of the discipline</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving quiz</li> </ul>
<ul style="list-style-type: none"> <li>• draw well-supported conclusions</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving quiz</li> </ul>

**Core Competency: Act**

Indicators	Level of Integration	Method of Assessment

<ul style="list-style-type: none"> <li>• implement effective problem-solving, decision-making, and goal-setting strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving quiz</li> </ul>
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**Learning Outcome 8:****H. Given several concurrent quantitative conditions, express each condition algebraically, and find all possible solutions of the resulting system.****Corresponding Evidence of Learning**

- H1. Solve and graph a system of two equations in two variables and interpret the results.
- H2. Solve and graph a system of inequalities in two variables and interpret the results.

**Core Competency: Think**

<b>Indicators</b>	<b>Level of Integration</b>	<b>Method of Assessment</b>
<ul style="list-style-type: none"> <li>• analyze data, ideas, patterns, principles, perspectives</li> </ul>	<ul style="list-style-type: none"> <li>• Instruct</li> <li>• Practice</li> <li>• Assess</li> </ul>	<ul style="list-style-type: none"> <li>• Classroom assessment technique</li> <li>• External examiner</li> <li>• Group presentation</li> <li>• Interview</li> <li>• Journal</li> <li>• Knowledge recall quiz</li> <li>• Locally developed exam/objective</li> <li>• Locally developed multiple choice exam</li> <li>• Oral examination</li> <li>• Performance or Demonstration</li> <li>• Portfolio</li> <li>• Problem-solving qu</li> </ul>
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<ul style="list-style-type: none"> <li>draw well-supported conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Instruct</li> <li>Practice</li> <li>Assess</li> </ul>	<ul style="list-style-type: none"> <li>Classroom assessment technique</li> <li>External examiner</li> <li>Group presentation</li> <li>Interview</li> <li>Journal</li> <li>Knowledge recall quiz</li> <li>Locally developed exam/objective</li> <li>Locally developed multiple choice exam</li> <li>Oral examination</li> <li>Performance or Demonstration</li> <li>Portfolio</li> <li>Problem-solving qu</li> </ul>
<b>Core Competency: Act</b>		
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