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| http://net4.valenciacollege.edu/cob/images/valenciaLogo.gif |   | **Course OutlineMAC 1105College Algebra** |

**General Course Information**

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| **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 |
| **Co-requisite(s):** | None |
| **Contact Hour Breakdown:** | **CR** 3     **CLASS** 3     **LAB** 0 |
| **Discipline:** | Mathematics |
| **Catalog Description:** | 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 and general education requirements. Credit not given for both MAC 1105 and MAC 1102 nor for MAC 1105 and MAC 1104 nor for MAC 1105 and MAC 1132. |

**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**

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| **Use processes, procedures, data, or evidence to solve problems and make effective decisions** |
|     **Corresponding Evidence of Learning** |
|  Student will be able to Understand: Student can read and comprehend data and information from a problem.  Student will be able to Create a model: Student can recognize relevant data, translate data/information to a usable form and find algebraic models that describe the situation.  Student will be able to Solve: Student can analyze and apply appropriate strategies to find solutions to the problem.  Student will be able to Interpret: Student can interpret the solutions and draw well supported conclusions.  |
|     **Core Competency: Think** |
| **Indicators** | **Assessments** |
|  analyze data, ideas, patterns, principles, perspectives  employ the facts, formulas, procedures of the discipline  draw well-supported conclusions  |  Think Rubric  Classroom assessment technique  Locally developed exam/objective  Portfolio  Problem-solving quiz  Project  |
|     **Core Competency: Communicate** |
| **Indicators** | **Assessments** |
|  employ methods of communication appropriate to your audience and purpose  |  Classroom assessment technique  Locally developed exam/objective  Portfolio  Problem-solving quiz  Project  |
| **Use functions and function concepts to analyze and model realistic situations.** |
|     **Corresponding Evidence of Learning** |
|  Student will be able to Describe and analyze relationships between variable quantities in numerical, symbolic and graphical forms.  Student will be able to Apply function concepts such as domain and range, intercepts and inverse functions to realistic problems.  Student will be able to Use operations on and transformations of functions to analyze and apply each of the families of functions.  |
|     **Core Competency: Think** |
| **Indicators** | **Assessments** |
|  employ the facts, formulas, procedures of the discipline  |  Classroom assessment technique  Knowledge recall quiz  Locally developed exam/objective  Locally developed multiple choice exam  Portfolio  Problem-solving quiz  |
| **Use appropriate technological tools to analyze and model realistic situations.** |
|     **Corresponding Evidence of Learning** |
|  Student will be able to Use graphing calculators to graph functions.  Student will be able to Use graphing calculators to find functions that best model data sets.  Student will be able to use graphing calculators to solve equations and inequalities.  |
|     **Core Competency: Think** |
| **Indicators** | **Assessments** |
|  employ the facts, formulas, procedures of the discipline  |  Locally developed exam/objective  Locally developed multiple choice exam  Portfolio  Project  |

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