

College Algebra

Course Description:

College Algebra is at least a 3-credit course that consists of the algebraic, graphic, numeric, and modeling approach to the study of polynomials, equations, inequalities, and functions, with or without technology, and with appropriate symbolic manipulation skills. It includes the use of appropriate mathematical language, including symbolism, to define, evaluate, and analyze the characteristics of functions. **At least 70% of the course time must be spent on the essential topics.** All essential topics must be addressed. The course must be at least a 3-credit course. If the course is more than 3-credit, then the essential topics comprise 70% of the three-hour portion of the class. The remaining 1-2 credit hours may be used for optional topics as part of the co-requisite portion of the course.

Essential topics:

- Number systems including complex numbers
- Definition of function
- Function vs Relation
- Function notation and evaluation
- Interval notation and set builder notation
- Characteristics of functions and their behaviors such as increasing, decreasing, extrema, zeros, domain, and range
- Table representations of functions and relations
- Graphing functions with and without technology
- Function operations including composition
- Transformations
- Inverses
- Solving Equations and inequalities
- Applications of functions and modeling
- Coordinate geometry including distance and circles
- Systems of Linear Equations

Types of Functions to be investigated:

Linear; Absolute Value; Quadratic; Polynomial; Exponential; Rational; Logarithmic; Piecewise defined; Radical

Additional topics may include:

- Conic Sections
- Linear Programming
- Matrices
- Nonlinear Systems of Equations
- Sequences and Series
- Theory of Polynomials

Template for Course Inventory

Please fill out the following table and submit attachment(s). Approved courses must be resubmitted every 5 years.

Please attach the following materials:

- Current working syllabus and lab syllabus that contains instructional goals and/or objectives
- Comprehensive final; in the absence of a comprehensive final no more than 5 sample assessments

Course #			
Course Title			
Beginning Term (when is/was it first offered?)	If more than five years, check box <input type="checkbox"/>		
	If less than five years, enter date:		
Credit Hours (including the entire course, lecture/lab)	Course:	Lab:	
Co-/Pre-requisite (test scores for placement)		Test	Score
	Co-Requisite		
	Pre-Requisite		
Successor Course:			
Catalog Description			
All Textbook(s)/Lab Manual	ISBN:	ISBN:	
	Title:	Title:	
	Publisher:	Publisher:	
	Author:	Author:	
	Edition:	Edition:	
	Copyright Year:	Copyright Year:	

Indicate the percent time spent on each learning topic (should add up to 100%). To indicate where evidence of each learning topic is located in this submission, please check all boxes that apply.

S – Syllabus

T – Topics list

C – Catalog Description

A – Assessment

O – other attachment

Essential Topics:	% Time	S	T	C	A	O
1. Number systems including complex numbers						
2. Definition of function						
3. Function vs Relation						
4. Function notation and evaluation						
5. Interval notation and set builder notation						
6. Characteristics of functions and their behaviors such as increasing, decreasing, extrema, zeros, domain, and range						
7. Table representations of functions and relations						
8. Graphing functions with and without technology						
9. Function operations including composition						
10. Transformations						
11. Inverses						
12. Solving Equations and inequalities						
13. Applications of functions and modeling						
14. Coordinate geometry including distance and circles						
15. Systems of Linear Equations						
Percentages Sub-Total:						

Non-Essential Topics (may not be addressed at all):	% Time	S	T	C	A	O
1. Conic Sections						
2. Linear Programming						
3. Matrices						
4. Sequences and Series						
5. Nonlinear Systems of Equations						
6. Theory of Polynomials (such as: Descartes Rule of Signs; Factor Theorem; Remainder Theorem; Fundamental Theorem of Algebra ...)						
7. Other:						
Percentages Sub-Total:						

Percentages Grand Total:

Functions Required: must be addressed	Check if addressed	S	T	C	A	O
1. Linear						
2. Absolute Value						
3. Quadratic						
4. Polynomial						
5. Exponential						
6. Rational						
7. Logarithmic						
8. Piecewise defined						
9. Radical						

Additional Comments:

Check if addressed:

<input type="checkbox"/>	Current working syllabus and lab syllabus that contains instructional goals and/or objectives
<input type="checkbox"/>	Comprehensive final; in the absence of a comprehensive final no more than 5 sample assessments
<input type="checkbox"/>	Every essential topic has been addressed
<input type="checkbox"/>	At least 70% of the course time must be spent on all the essential topics
<input type="checkbox"/>	Percentages of topics must total 100%
<input type="checkbox"/>	Course is at least 3-credit

Name of individual submitting: _____ Date: _____

Email address: _____ Phone: _____

Please contact Jodi Oliveto, Senior Policy and Program Officer, jodi.oliveto@wvhepc.edu with questions