ABSE28 : Algebra 2A

General Information

Author:	• Jesus Carino
Course Code (CB01) :	ABSE28
Course Title (CB02) :	Algebra 2A
Department:	ABSE
Proposal Start:	Fall 2025
TOP Code (CB03) :	(4930.62) Secondary Education (Grades 9-12) and G.E.D.
CIP Code:	(53.0201) High School Equivalence Certificate Program.
SAM Code (CB09) :	Non-Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000604539
Curriculum Committee Approval Date:	11/27/2024
Board of Trustees Approval Date:	01/21/2025
Last Cyclical Review Date:	11/27/2024
Course Description and Course Note:	ABSE 28 focuses on linear, quadratic, and exponential functions, including polynomial, rational, and radical functions. Students work closely with the expressions that define the functions and expand and hone their abilities to model situations and to solve equations, including solving quadratic equations over the set of complex numbers and solving exponential equations using the properties of logarithms. Students explore the effects of transformations on graphs of diverse functions, including functions arising in applications. ABSE 28 is aligned with the California Common Core State Standards and high school grade-specific standards to define college and career readiness expectations. It meets the requirements for a high school diploma. Laboratory 100 hours. Note: This is a self-paced course in an open-entry, open-exit lab environment. Successful completion of this course results in 5 high school credits.
Justification:	Mandatory Revision
Academic Career:	• Noncredit
Mode of Delivery:	No value
Author:	No value
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	• Mathematics-Basic Skills: Non-Credit
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is a basic skills course.

☐ Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

One level below transfer.

Grading Basis

- Grade Only

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

Not Applicable

Transferability

Not transferable

Transferability Status

Not transferable

Units and Hours

Summary

Minimum Credit Units (CB07)	0
Maximum Credit Units (CB06)	0
Total Course In-Class (Contact) Hours	100
Total Course Out-of-Class Hours	0
Total Student Learning Hours	100

Credit / Non-Credit Options

Course Type (CB04)

Non-Credit

Noncredit Course Category (CB22)

Elementary and Secondary Basic Skills.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Non-Enhanced Funding.

☐ Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	0	0
Laboratory Hours	100	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	54
Course In-Class (Contact) Hours	
Lecture	0

Laboratory	100
Studio	0
Total	100

Course Out-of-Class Hours

Lecture	0
Laboratory	0
Studio	0
Total	0

Time Commitment Notes for Students

This is a self-paced course in an open-entry, open-exit lab environment.

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Prerequisites, Corequisites, Recommended Corequisites, and Recommended Preparation

Advisory

ESL30 - ENGLISH AS A SECOND LANGUAGE LEVEL 3

Objectives

- Write paragraphs at the low-intermediate level with sufficient unity.
- Develop coherence and mechanical accuracy.
- Demonstrate mastery of grammatical structures studied at a level sufficient to pass unit tests and the divisional grammar mastery test for this level.
- Converse at a functional level adequate for everyday use on the campus and in the community.
- Respond to questions about recorded and live speeches, dialogues, role plays, and lectures.
- Decode 2,500-word reading passages, respond to inference and recall questions, and utilize a monolingual English dictionary to advantage.

AND

Advisory

ABSE27 - APPLIED MATHEMATICS (in-development)

Objectives

- Perform basic operations using whole numbers, decimals, fractions and percents.
- Perform basic operations on a calculator.
- Estimate answers.
- Compute weekly and annual wages.
- Calculate the cost of purchases.
- Calculate consumer expenses.
- Read and interpret W-2 forms.
- Construct and analyze a household budget.
- Determine yields of investments.

- Compute problems with open-ended and closed-ended credit.
- Translate words into algebraic expressions.

Entry Standards

Entry Standards	Description
Solve absolute value equations and inequalities and graph their solutions.	No Value
Choose and interpret units consistently in formulas.	No Value
Choose and interpret the scale and the origin in graphs.	No Value
Interpret and compare linear, quadratic, and exponential growth; display and analyze data statistically.	No Value
Prove theorems involving similarity.	No Value
Define trigonometric ratios and solve problems involving right triangles.	No Value
Explain and use formulas for determining the volume and surface area of solids.	No Value
Use coordinates to prove simple geometric theorems algebraically.	No Value
Apply theorems about circles.	No Value

Course Limitations

Cross Listed or Equivalent Course	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	
Methods of Instruction	Multimedia
Methods of Instruction	Tutorial
Methods of Instruction	Independent Study
Methods of Instruction	Collaborative Learning

Out of Class Assignments

N/A

Methods of Evaluation	Rationale
Exam/Quiz/Test	Individualized contract
Exam/Quiz/Test	Assessments at the end of each chapter
Exam/Quiz/Test	Unit exams

Textbook Rationale

No updated textbooks are available.

Textbooks

Author	Title	Publisher	Date	ISBN
R. Charles	Algebra 2 Common Core	Pearson	2015	10: 0133281167

Other Instructional Materials (i.e. OER, handouts)

No Value

Learning Outcomes

Course Objectives

Graph solution sets of compound inequalities.

Write and graph equations for linear equations and inequalities in two variable and absolute value functions.

Solve systems using matrices.

Solve linear systems of two or three variables by graphing.

Write and use linear systems to solve real life problems.

Factor quadratic polynomials.

Use complex number systems.

Solve and graph quadratic equations, inequalities and functions.

Perform operations on polynomials.

Evaluate, graph and find the zeros of polynomial functions.

Evaluate nth roots of real numbers using both radicals and exponential notation.

Graph and use exponential and logarithmic functions.

SLOs

Create equations that describe numbers or relationships. Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
ABSE NCR AHS Diploma	Apply mathematical ways of thinking to real world issues and challenges using mathematical modeling and problem solving techniques.
ABSE Core PLOs	Apply the skills that the Common Core Standards have identified for each course.
ABSE NCR Adult Basic Education	Compute and solve real world problems using basic operations with whole numbers, fractions, decimals, and percents.

Construct and compare linear and exponential models of applied problems. Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
ABSE NCR AHS Diploma	Apply mathematical ways of thinking to real world issues and challenges using mathematical modeling and problem solving techniques.
ABSE Core PLOs	Apply the skills that the Common Core Standards have identified for each course.
ABSE NCR Adult Basic Education	Compute and solve real world problems using basic operations with whole numbers, fractions, decimals, and percents.

Construct graphs of equations and inequalities. Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
ABSE NCR AHS Diploma	Apply mathematical ways of thinking to real world issues and challenges using mathematical modeling and problem solving techniques.
ABSE Core PLOs	Apply the skills that the Common Core Standards have identified for each course.
ABSE NCR Adult Basic Education	Compute and solve real world problems using basic operations with whole numbers, fractions, decimals, and percents.

Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

No value

Laboratory/Studio Content

Expressions, Equations, and Inequalities (12 hours)

- Patterns and expressions
- Properties of real numbers
- Algebraic expressions
- Solving equations
- Solving inequalities
- Absolute value equations and inequalities

Functions, Equations, and Graphs (14 hours)

- Relations and functions
- Direct variation
- Linear functions and slope intercept form
- Using linear models
- Families of functions
- Absolute value functions and graphs
- Two-variable inequalities

Linear Systems (12 hours)

- Solving systems using tables and graphs
- Solving systems algebraically
- Systems of inequalities
- Linear programming
- Systems with three variables
- Solving systems using matrices

Quadratic Functions and Equations (18 hours)

- Quadratic functions and transformations
- Standard form of a quadratic function
- Modeling with quadratic functions
- Factoring quadratic expressions
- Quadratic equations
- Completing the square
- The quadratic formula
- Complex numbers
- Quadratic systems

Polynomials and Polynomial Functions (18 hours)

- Polynomial functions
- Polynomials, linear factors, and zeros
- Solving polynomial equations
- Dividing polynomials
- Theorems about roots and polynomial equations

- The Fundamental Theorem of Algebra
- The Binomial Theorem
- Polynomial models in the real world
- Transforming polynomial functions

Radical Functions and Rational Exponents (14 hours)
- Roots and radical expressions
- Multiplying and dividing radical expressions
- Binomial radical expressions
- Rational exponents
- Solving square root and other radical equations Function operations Inverse relations and functions
- Graphing radical functions

Exponential and Logarithmic Functions (12 hours)
- Exploring exponential models
- Properties of exponential functions
- Logarithmic functions as inverses
- Properties of logarithms
- Exponential and logarithmic equations
- Natural logarithms

Total hours: 100

Additional Information

Repeatability

Repeatable

Justification (if repeatable was chosen above)

Non-credit courses

Is it possible this course will have a material fee?

No Value

I have contacted my library liaison (https://campusguides.glendale.edu/faculty/liaisons):

No Value

What term(s) will this course be offered?

No Value

Will any additional resources be needed for this course? (Click all that apply)

No Value

If additional resources are needed, add a brief description and cost in the box provided.

No Value

Resources

Did you contact your departmental library liaison?

No

If yes, who is your departmental library liason?

Shelley Aronoff (ESL-Noncredit, Noncredit Business & Life Skills)

Did you contact the DEIA liaison?

No

Were there any DEIA changes made to this outline?

No

If yes, in what areas were these changes made:

No Value

Will any additional resources be needed for this course? (Click all that apply)

- No

If additional resources are needed, add a brief description and cost in the box provided.

No Value