ABSE29 : Algebra 2B

General Information

Author:	• Jesus Carino
Course Code (CB01) :	ABSE29
Course Title (CB02) :	Algebra 2B
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) :	CCC000604832
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 29 focuses on rational functions, sequences and series, and quadratic relations and conic sections. Students continue solving complex systems of equations, including matrices. They use the coordinate plane to extend trigonometry to model periodic phenomena and expand basic functions to the entire unit circle. Students identify different ways of collecting and analyzing data and the role of randomness and careful design in the conclusions that can be drawn. 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)

Other Non-Credit 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

ABSE28 - Algebra 2A (in-development)

Objectives

- 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.

AND

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.

Entry Standards

Entry Standards	Description
No value	No value

Course Limitations

Cross Listed or Equivalent Course	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	
Methods of Instruction	Laboratory
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
Randall Charles	Algebra 2 Common Core	Pearson	2015	978-0133281163

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

No Value

Learning Outcomes

Course Objectives

Build a function that models a relationship between two quantities.

Construct and compare linear and exponential models and solve problems.

Rewrite rational expressions.

Translate between the geometric description and the equation for a conic section.

Represent and model with vector quantities.

Perform operations on matrices and use matrices in applications.

Evaluate random processes underlying statistical experiments.

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

Prove and apply trigonometric identities.

Define trigonometric ratios and apply trigonometry to general triangles.

Illustrate the periodicity of the trigonometric functions using the unit circle.

SLOs

Analyze functions using different representations. 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.

Summarize, represent and interpret data. Expected Outcome Performance: 70.0

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	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.
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ABSE NCR Adult Basic Education	Compute and solve real world problems using basic operations with whole numbers, fractions, decimals, and percents.

Model periodic phenomena with trigonometric functions. 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.
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ABSE NCR Adult Basic Education	Compute and solve real world problems using basic operations with whole numbers, fractions, decimals, and percents.

Course Content

Lecture Content

No value

Laboratory/Studio Content

Rational Functions (11 hours)
- Inverse variation
- The reciprocal function family
- Rational functions and their graphs
- Rational expressions
- Solving rational equations

Sequences and Series (7 hours)
- Mathematical patterns
- Arithmetic sequences and series
- Geographic sequences and series

Quadratic Relations and Conic Sections (13 hours)
- Exploring conic sections
- Parabolas
- Circles
- Ellipses
- Hyperbolas
- Translating conic sections

Probability and Statistics (22 hours)
- Permutations and combinations
- Probability
- Probability of multiple events
- Conditional probability
- Probability models
- Analyzing data
- Standard deviation
- Samples and surveys
- Binomial distributions
- Normal distributions

Matrices (13 hours)
- Adding and subtracting matrices
- Matrix multiplication
- Determinants and Inverses
- Inverse matrices and systems
- Geometric transformations
- Vectors

Periodic Functions and Trigonometry (18 hours)
- Periodic functions
- Angles and unit circle
- Radian measure
- Sine function
- Cosine function
- Tangent function
- Translating sine and cosine functions
- Reciprocal trigonometric functions

Trigonometric Identities and Equations (16 hours)
- Trigonometric identities
- Solving trigonometric equations using inverses

- Right triangles and trigonometric ratios
- Area and the law of sines
- The law of cosines
- Angle identities
- Double-angle and half-angle identities

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 Value

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

No Value