ABSE24 : ALGEBRA 1B

General Information

Author:	• Jesus Carino
Course Code (CB01) :	ABSE24
Course Title (CB02) :	ALGEBRA 1B
Department:	ABSE
Proposal Start:	Spring 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) :	CCC000281522
Curriculum Committee Approval Date:	05/08/2024
Board of Trustees Approval Date:	07/16/2024
Last Cyclical Review Date:	05/08/2024
Course Description and Course Note:	ABSE 24 provides students with continued instruction on reasoning and modeling algebraically. Areas presented in this class include descriptive statistics, and quadratic functions/modeling. This course is designed to meet the needs of students who wish to continue their study of algebra and to earn high school credit in mathematics. Laboratory 100 hours. Note: This is a self-paced course in an open-entry, open-exit lab environment. Successful completion of the course results in 5 high school credits.
Justification:	Mandatory Revision
Academic Career:	• Noncredit
Author:	

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)

Not applicable.

Grading Basis

- Grade Only

Course Support Course Status (CB26)

Course is not a support course

Transferability & Gen. Ed. Options

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.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

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

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Advisory

ABSE23 - ALGEBRA 1A

Objectives

- Interpret parts of an expression in terms of its context.
- Explain the steps to solve a one-variable equation and construct a viable argument to justify a solution method.
- Solve equations and inequalities in one-variable including using coefficients represented by letters.
- Solve absolute value equations and inequalities and graph their solutions.
- Choose and interpret units consistently in formulas.
- Choose and interpret the scale and the origin in graphs.
- Define appropriate quantities for the purpose of descriptive modeling.
- Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
- Create linear equations to solve problems.
- Represent constraints by equations or inequalities and by systems of equations or inequalities.
- Solve for a specific variable in a formula.
- Write functions that describe a relationship between two quantities.
- Write arithmetic and geometric sequences both recursively and with an explicit formula.
- Identify the effects on a graph by changing part of a function.

AND

Advisory

ESL40 - ENGLISH AS A SECOND LANGUAGE LEVEL 4

Objectives

- Demonstrate mastery of grammatical structures studied at a level sufficient to pass unit tests and the divisional grammar mastery test for this level.
- Write a three-paragraph composition that contains an introductory paragraph, a body, and a conclusion.
- Decode 3,000-word reading passages, identify main ideas and supporting details, make inferences, and summarize short passages.

Entry Standards

Entry Standards

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction	Independent Study
Methods of Instruction	Multimedia

Out of Class Assignments

N/A

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

Textbook Rationale

No newer updated textbook available.

Textbooks

Author	Title	Publisher	Date	ISBN
Burger, Edward B., et al.	Algebra 1 Common Core Edition	Austin: Holt McDouga	2011	0547647034
Ron Larson and Laurie Boswell	Big Ideas Math Algebra 1	Big Ideas Learning	2015	978-160840-838-2

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

Description	Instructor-generated background information on the mathematics being studied; duplicated handouts from resources with copyright permission.
Author	No value
Citation	No value
Online Resource(s)	No value

Materials Fee

No value

Learning Outcomes and Objectives

Course Objectives

Define appropriate quantities for the purpose of descriptive modeling.

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

Create linear and quadratic equations to solve problems.

Create equations in two or more variables to represent relationships between quantities.

Write arithmetic and geometric sequences both recursively and with an explicit formula.

Identify the effects on a graph by changing part of a function.

Distinguish between situations that can be modeled with linear functions and with exponential functions.

Construct linear and exponential functions including arithmetic and geometric sequences from various sources.

Compare linear, quadratic, and exponential growth.

Interpret the parameters in a linear or exponential function in terms of a context.

Display and analyze data statistically.

Solve simple problems involving theoretical and experimental probability.

SLOs

Demonstrate ability to add, subtract and multiply polynomials. Expected Outcome Performance: 70.0

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.

ILOs Core ILOs	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.

Show how to multiply polynomials and special cases. Expected Outcome Performance: 70.0

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.
ILOs Core ILOs	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.

Demonstrate how to factor polynomials. Expected Outcome Performance: 70.0

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.
ILOs Core ILOs	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.

Solve quadratic equations by graphing, by factoring, square roots, and completing the square. 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.

Use linear, quadratic and exponential models to write equations of real-world problems. Expected Outcome Performance: 70.0

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.
ILOs Core ILOs	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.

Demonstrate how to analyze data statistically. Expected Outcome Performance: 70.0

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.
ILOs Core ILOs	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.

Know how to calculate experimental and theoretical probability of an event. Expected Outcome Performance: 70.0

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.
ILOs Core ILOs	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.

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

Exponents and Polynomials (4 hours)

- Exponents
    - Integer exponents
    - Rational exponents

Polynomials (6 hours)

- Polynomials

- Addition and subtraction of polynomials
- Multiplication of polynomials
- Special products of binomials

Factoring Polynomials (8 hours)
- Factoring methods
    - Factors and greatest common factors
    - Factoring by greatest common factors
    - Factoring x2 + bx + c
    - Factoring ax2 + bx + c

Applying factoring methods (7 hours)
- Factoring special products
- Selection of factoring methods

Quadratic Functions and Equations (15 hours)
- Quadratic functions
    - Identification of quadratic functions
    - Characteristics of quadratic functions
    - Graphing quadratic functions
    - Transformation of quadratic functions

Solving quadratic equations (20 hours)
- Quadratic equations by graphing
- Quadratic equations by factoring
- Quadratic equations by using square roots
- Completing the square
- The quadratic formula and the discriminant
- Nonlinear systems
- Cubic functions and equations

Exponential Functions (10 hours)
- Exponential functions
    - Geometric sequences
    - Exponential functions

Functions, models, and patterns (10 hours)
- Exponential growth and decay
- Patterns and recursion
- Linear, quadratic, and exponential models
- Linear and nonlinear rates of change
- Comparison of functions

Data Analysis and Probability (10 hours)
- Data analysis
    - Organization and display of data
    - Frequency and histograms
    - Data distribution
    - Dot plots and distributions
    - Errors in graphs and statistics

Probability (10 hours)
- Experimental probability
- Theoretical probability
- Independent and dependent events

Total hours: 100

Additional Information

Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.

No

GCC Major Requirements

No Value

GCC General Education Graduation Requirements

No Value

Repeatability

Repeatable

Justification (if repeatable was chosen above)

Non-credit courses

Resources

Did you contact your departmental library liaison?

No

If yes, who is your departmental library liason?

No Value

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