

Course Outline

COURSE: MATH 201A **DIVISION:** 20 **ALSO LISTED AS:**

TERM EFFECTIVE: Summer 2024

SHORT TITLE: CALC 1 SUPPORT

LONG TITLE: Calculus 1 Support

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
1	18	Lecture:	0	0
		Lab:	3	54
		Other:	0	0
		Total:	3	54

Out of Class Hrs: 00.00

Total Learning Hrs: 54.00

COURSE DESCRIPTION:

A review of the core prerequisite skills, competencies, and concepts needed in MATH 1A: Single-Variable Calculus and Analytic Geometry. Intended for students who are concurrently enrolled in MATH 1A at Gavilan College. Topics include: functions and their graphs; algebraic skills including factoring and simplification; interpreting application problems; constructing equations for application problems; problem-solving strategies; and student skills. This course is Pass/No Pass only. **PREREQUISITE:** Appropriate placement. **CO-REQUISITE:** MATH 1A: Single-Variable Calculus and Analytic Geometry.

PREREQUISITES:

Completion of MATH 1A, as UG, with a grade of C or better., Concurrent OK

COREQUISITES:

CREDIT STATUS: T - Support - Degree Applicable

GRADING MODES

P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

- 03 - Lecture/Laboratory
- 04 - Laboratory/Studio/Activity
- 047 - Laboratory - LEH 0.7
- 05 - Hybrid
- 71 - Dist. Ed Internet Simultaneous
- 737 - Dist. Ed Internet LAB-LEH 0.7

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Synthesize graphical, algebraic, and problem-solving knowledge and techniques from algebra and precalculus to aid in solving calculus problems.

COURSE OBJECTIVES:

By the end of this course, a student should:

1. Analyze functions and their graphs by utilizing tools of precalculus.
2. Apply rules and techniques of algebra including factoring, simplification, and solving equations and inequalities.
3. Interpret application problems and construct diagrams and equations to model and solve them.
4. Practice study and time management skills to aid in success in Math 1A course.

COURSE CONTENT:

1. Functions and their Graphs (19 hours)
 - a. Graphing functions (3 hours)
 - b. Domain and range (2 hours)
 - c. Inverse functions and one-to-one functions (2 hours)
 - d. Interpreting graphs of functions in context (3 hours)
 - e. Analyzing piecewise functions (2 hours)
 - f. Function and graph types: polynomial, rational, radical, exponential, logarithmic, trigonometric (3 hours)
 - g. Horizontal and vertical asymptotes (2 hours)
 - h. Using graphing technology (2 hours)
2. Algebraic Skills (17 hours)
 - a. Factoring (3 hours)
 - b. Simplification of complex fractions (2 hours)
 - c. Algebraic substitution (1 hour)
 - d. Exponent rules (2 hours)
 - e. Function composition (2 hours)
 - f. Solving equations and inequalities of various types: absolute value, polynomial, rational, radical, exponential, logarithmic, trigonometric (4 hours)
 - g. Applying trigonometric identities (3 hours)
3. Problem Solving for Application Problems (12 hours)
 - a. Interpreting application problems and identifying known and wanted information (4 hours)
 - b. Creating diagrams and graphs to model application problems (4 hours)
 - c. Setting up equations to model application problems (4 hours)
4. Student Skills (4 hours)
 - a. Study skills (2 hour)
 - b. Time management (1 hour)
 - c. Growth mindset (1 hour)
5. Final Exam (2 hours)

METHODS OF INSTRUCTION:

The support course will take an activity-based, group work approach. Whole-class discussion and occasional instruction will accompany the activities as appropriate.

METHODS OF EVALUATION:

Evaluation Percent 50

Evaluation Description

Reading assignments or problems to be completed prior to group assignments

Evaluation Percent 50

Evaluation Description

Problem-solving group assignments to deepen understanding of precalculus concepts

REPRESENTATIVE TEXTBOOKS:

Calculus: Early Transcendentals, 9th Edition, Stewart, Cengage, 2020 or a comparable textbook/material.
ISBN: ISBN-10 ?1337613924; ISBN-13 ?978-1337613927

OTHER MATERIALS:

Other appropriate textbook as chosen by the instructor

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Not Transferable

Not Transferable

UC TRANSFER:

Not Transferable

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education: N

Program Status: 2 Stand-alone

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level:

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: E

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000643713

Sports/Physical Education Course: N

Taxonomy of Program: 170100