

# MATHEMATICS (MATH)

## MATH 1A • CALCULUS

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 47 or MATH 48C or equivalent.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in MATH 1AH.

**Degree and Credit** Degree-Applicable Credit Course

**Status:**

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

Introduction to differential calculus, including limits, derivatives and their applications to curve-sketching, families of functions, and optimization.

## MATH 1AH • HONORS CALCULUS I

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 47 or MATH 48C or equivalent.
<b>Corequisite:</b>	MATH 1AHP.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in MATH 1A.

**Degree and Credit** Degree-Applicable Credit Course

**Status:**

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade Only

**Repeatability:** Not Repeatable

Introduction to differential calculus, including limits, derivatives and their applications to curve-sketching, families of functions, and optimization. Honors work emphasizes a deeper study of differential calculus via the study of proofs using analytic techniques, real-world problems, and special applied projects.

## MATH 1AHP • HONORS CALCULUS I SEMINAR

<b>Units:</b>	1
<b>Hours:</b>	1 lecture per week (12 total per quarter)
<b>Corequisite:</b>	MATH 1AH.
<b>Degree and Credit</b>	Degree-Applicable Credit Course
<b>Status:</b>	
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	Not Repeatable

An honors seminar linked to MATH 1AH. In this course, students will explore a multitude of advanced problems from the calculus I honors course, including proofs of limit laws, differentiation rules, and corresponding theorems concerning the behavior of differentiable functions. As the calculus I honors course will require students to submit typed technical solutions to applied problems, this seminar will support students in learning how to use mathematical typesetting software. Best practices for mathematical writing will also be discussed.

## MATH 1B • CALCULUS

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 1A or 1AH.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in MATH 1BH.

**Degree and Credit** Degree-Applicable Credit Course

**Status:**

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

Introduction to integral calculus, including definite and indefinite integrals, the first and second fundamental theorems and their applications to geometry, physics, and the solution of elementary differential equations.

**MATH 1BH • HONORS CALCULUS II**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 1A or 1AH.
<b>Corequisite:</b>	MATH 1BHP.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in MATH 1B.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Area 2: Mathematical Concepts & Quantitative Reasoning
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	Not Repeatable

Introduction to integral calculus, including Riemann sums, definite, indefinite, and improper integrals, the first and second fundamental theorems of calculus and their applications to geometry, physics, and solutions to elementary differential equations. Honors work emphasizes more in-depth analysis of real-world problems and the theory through proofs using analysis techniques.

**MATH 1BHP • HONORS CALCULUS II SEMINAR**

<b>Units:</b>	1
<b>Hours:</b>	1 lecture per week (12 total per quarter)
<b>Corequisite:</b>	MATH 1BH.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	Not Repeatable

An honors seminar for MATH 1BH. In this course, students will explore a multitude of advanced problems from the calculus II honors course, including proofs of the fundamental theorems, properties of integrals, integration techniques, and various other theorems and propositions concerning the behavior of integrable functions. As the calculus II honors course will require students to submit typed technical solutions to applied problems, this seminar will support students in learning how to use mathematical typesetting software. Best practices for mathematical writing will also be discussed.

**MATH 1C • CALCULUS**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 1B or 1BH.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Area 2: Mathematical Concepts & Quantitative Reasoning
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Introduction to functions of more than one variable, including vectors, partial differentiation, the gradient, contour diagrams and optimization. Additional topics include infinite series, convergence and Taylor series.

**MATH 1D • CALCULUS**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 1C.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Introduction to integration of functions of more than one variable, including double, triple, flux, and line integrals. Additional topics include polar, cylindrical and spherical coordinates, parameterization, vector fields, path-independence, divergence and curl.

**MATH 2A • DIFFERENTIAL EQUATIONS**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 1C.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in MATH 12A.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Differential equations and selected topics of mathematical analysis.

**MATH 2B • LINEAR ALGEBRA**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 1C.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

A first course in linear algebra, including systems of linear equations, matrices, linear transformations, determinants, abstract vector spaces and subspaces, eigenvalues and eigenvectors, inner product spaces and orthogonality, and selected applications of these topics.

**MATH 2BL • APPLIED LINEAR ALGEBRA LABORATORY**

<b>Units:</b>	1
<b>Hours:</b>	3 laboratory per week (36 total per quarter)
<b>Corequisite:</b>	Completion of or concurrent enrollment in MATH 2B.
<b>Advisory:</b>	Experience in using mathematics software such as MATLAB, Octave, Python Excel, Mathematica.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Laboratory course to accompany MATH 2B. Introduces students to live, hands-on laboratory and design experiences as part of common mathematical modeling processes. Students learn how to interact with the material world or from data drawn from the material world, using the tools and data collection techniques. Students learn to use linear algebra to create, develop, and analyze mathematical models of real-world problems related to their academic and career interests.

**MATH 10 • ELEMENTARY STATISTICS**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	Intermediate Algebra or equivalent.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; UC will grant transfer credit for a maximum of one course from the following: PSYC 7, SOC 7, MATH 10 or 17—students are strongly encouraged to meet with a counselor for appropriate course selection.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Area 2: Mathematical Concepts & Quantitative Reasoning
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

An introduction to modern methods of descriptive statistics, including collection and presentation of data; measures of central tendency and dispersion; probability; sampling distributions; hypothesis testing and statistical inference; linear regression and correlation; analysis of variance; use of microcomputers for statistical calculations. Illustrations taken from the fields of business, economics, medicine, engineering, education, psychology, sociology, social sciences, life science, and health science.

## **MATH 12 • CALCULUS FOR BUSINESS & ECONOMICS**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	Intermediate Algebra or equivalent.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.

**Degree and Credit** Degree-Applicable Credit Course

**Status:**

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

A study of the techniques of differential and integral calculus, with an emphasis on the application of these techniques to problems in business and economics.

## **MATH 17 • INTEGRATED STATISTICS II**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	MATH 217.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; UC will grant transfer credit for a maximum of one course from the following: PSYC 7, SOC 7, MATH 10 or 17—students are strongly encouraged to meet with a counselor for appropriate course selection; not open to students with credit in MATH 57.

**Degree and Credit** Degree-Applicable Credit Course

**Status:**

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

The second of two in the Statway sequence. Covers concepts and methods of statistics with an emphasis on data analysis. Topics include methods for collecting data, graphical and numerical descriptive statistics, correlation, simple linear regression, basic concepts of probability, confidence intervals and hypothesis tests for means and proportions, chi-squared tests, and ANOVA. Application problems will be taken from the fields of business, economics, medicine, engineering, education, psychology, and sociology, and from culturally diverse situations. This sequence is recommended for students with majors that require no mathematics beyond freshman-level statistics.

## **MATH 22 • DISCRETE MATHEMATICS**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	C S 1A or C S 2A or C S 3A or equivalent; MATH 47 or MATH 48C or equivalent.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in CIS 18 or C S 18.

**Degree and Credit** Degree-Applicable Credit Course

**Status:**

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

**Cross-Listed:** C S 18

This course is for any student majoring in math or computer science, as well as for students interested in the topics taught in this course. Discrete mathematics: set theory, logic, Boolean algebra, methods of proof, mathematical induction, number theory, discrete probability, combinatorics, functions, relations, recursion, algorithm efficiencies, graphs, trees.

## **MATH 33 • MATH FOR FINANCIAL THRIVING**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Prerequisite:</b>	Intermediate Algebra or equivalent.
<b>Corequisite:</b>	For students who do not meet the prerequisite requirement, concurrent enrollment in MATH 233 or NCBS 433 is required.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.

**Degree and Credit** Degree-Applicable Credit Course

**Status:**

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

This course is designed for any student, in any major, who is interested in exploring the connections between math concepts and aspects of financial thriving. This project-based course focuses on exploration and investigation of both simple and complex financial decisions common in everyday life. Topics include linear and exponential modeling, variables and multivariable relationships, dimensional analysis, descriptive statistics, present and future values, and estimation. Individually and collaboratively, students analyze quantitative information and apply quantitative skills in a variety of contexts related to financial planning and decision making. Students present their findings verbally and in writing.

**MATH 40A • QUANTITATIVE REASONING**

**Units:** 5  
**Hours:** 5 lecture per week (60 total per quarter)  
**Prerequisite:** Intermediate Algebra or equivalent.  
**Corequisite:** For students who do not meet the prerequisite requirement, concurrent enrollment in MATH 240A or NCBS 440A is required.

**Advisory:** Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in MATH 80.

**Degree and Credit Status:** Degree-Applicable Credit Course

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

**Formerly:** MATH 80

This course is designed for any student, in any major, who is interested in exploring the connections between math concepts and the quantitative skills we use in everyday life. The course focuses on problem solving using mathematical methods and modeling and quantitative investigation strategies. Applications include linear and exponential models, multivariable relationships, conversions, estimation, elementary probability, and descriptive statistics. Students will learn individually and collaboratively to analyze quantitative information and apply quantitative skills in a variety of real life contexts and express their findings verbally and in writing.

**MATH 42 • MATH FOR ELEMENTARY SCHOOL TEACHERS**

**Units:** 5  
**Hours:** 5 lecture per week (60 total per quarter)  
**Prerequisite:** Intermediate Algebra or equivalent.  
**Advisory:** Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.

**Degree and Credit Status:** Degree-Applicable Credit Course

**Foothill GE:** Non-GE

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

Focuses on the development of quantitative reasoning skills through in-depth, integrated explorations of topics in mathematics, including real numbers systems and subsystems. Emphasis is on comprehension and analysis of mathematical concepts and applications of logical reasoning.

**MATH 47 • PATH TO CALCULUS**

**Units:** 6  
**Hours:** 6 lecture per week (72 total per quarter)  
**Prerequisite:** Intermediate Algebra or equivalent.  
**Advisory:** Some sections are offered with extra support and require concurrent enrollment in MATH 247 or NCBS 447.

**Degree and Credit Status:** Degree-Applicable Credit Course

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

This course is intended for students who want to prepare for success in calculus. Topics include a study of functions, function families, their properties and transformations, compositions and inverses. Function families include trigonometric, logarithmic, exponential, polynomial, and rational. Multiple representations of functions are emphasized.

**MATH 48A • PRECALCULUS I**

**Units:** 5  
**Hours:** 5 lecture per week (60 total per quarter)  
**Prerequisite:** Intermediate Algebra or equivalent.  
**Corequisite:** For students who do not meet the prerequisite requirement, concurrent enrollment in MATH 248A or NCBS 448A is required.

**Advisory:** Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; UC credit for MATH 48A, 48B and 48C is limited to a maximum of 7.5 units for the combination or any portion of the series completed.

**Degree and Credit Status:** Degree-Applicable Credit Course

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

Introduction to functions and families of functions, including linear functions, quadratics, power and radical functions, absolute value functions, piece-wise defined functions, transformations of these functions, composition of these functions and their use in solving application problems.

**MATH 48B • PRECALCULUS II**

**Units:** 5  
**Hours:** 5 lecture per week (60 total per quarter)  
**Prerequisite:** MATH 48A or equivalent.  
**Advisory:** Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; UC credit for MATH 48A, 48B and 48C is limited to a maximum of 7.5 units for the combination or any portion of the series completed.

**Degree and Credit Status:** Degree-Applicable Credit Course

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

This course is a continuation of topics from MATH 48A. Topics include polynomial, rational, exponential and logarithmic functions, transformations of these functions and their use in solving application problems.

**MATH 48C • PRECALCULUS III**

**Units:** 5  
**Hours:** 5 lecture per week (60 total per quarter)  
**Prerequisite:** MATH 48B.  
**Advisory:** Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; UC credit for MATH 48A, 48B and 48C is limited to a maximum of 7.5 units for the combination or any portion of the series completed.

**Degree and Credit Status:** Degree-Applicable Credit Course

**Foothill GE:** Area 2: Mathematical Concepts & Quantitative Reasoning

**Transferable:** CSU/UC

**Grade Type:** Letter Grade (Request for Pass/No Pass)

**Repeatability:** Not Repeatable

This course is a continuation of topics from MATH 48B. Topics include the six trigonometric functions, trigonometric identities, inverse trigonometric functions, trigonometric equations, right triangles, oblique triangles, vectors, parametric equations, and applications with various functions.

**MATH 70R • INDEPENDENT STUDY IN MATHEMATICS**

**Units:** 1  
**Hours:** 3 laboratory per week (36 total per quarter)  
**Degree and Credit Status:** Degree-Applicable Credit Course  
**Foothill GE:** Non-GE  
**Transferable:** CSU  
**Grade Type:** Letter Grade (Request for Pass/No Pass)  
**Repeatability:** Not Repeatable

Provides an opportunity for the student to expand their studies in Mathematics beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

**MATH 71R • INDEPENDENT STUDY IN MATHEMATICS**

**Units:** 2  
**Hours:** 6 laboratory per week (72 total per quarter)  
**Degree and Credit Status:** Degree-Applicable Credit Course  
**Foothill GE:** Non-GE  
**Transferable:** CSU  
**Grade Type:** Letter Grade (Request for Pass/No Pass)  
**Repeatability:** Not Repeatable

Provides an opportunity for the student to expand their studies in Mathematics beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.



## **MATH 72R • INDEPENDENT STUDY IN MATHEMATICS**

<b>Units:</b>	3
<b>Hours:</b>	9 laboratory per week (108 total per quarter)
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Provides an opportunity for the student to expand their studies in Mathematics beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

## **MATH 73R • INDEPENDENT STUDY IN MATHEMATICS**

<b>Units:</b>	4
<b>Hours:</b>	12 laboratory per week (144 total per quarter)
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Provides an opportunity for the student to expand their studies in Mathematics beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

## **MATH 83 • LEARNERS ENGAGED IN ADVOCATING FOR DIVERSITY IN STEM**

<b>Units:</b>	4
<b>Hours:</b>	4 lecture per week (48 total per quarter)
<b>Advisory:</b>	BIOL 1A, 40A, 41, or equivalent; ENGL 1A or 1AH or ESLL 26 or equivalent; not open to students with credit in BIOL 81, CHEM 81, or C S 81.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Area 7: Lifelong Learning
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	Not Repeatable
<b>Cross-Listed:</b>	BIOL 81 CHEM 81 C S 81

This course is intended for students interested in equity, diversity, and inclusion in the sciences. Students will explore research on inclusion and diversity in STEM and health science, as well as research on interventions to enhance inclusion and diversity in those fields in higher education contexts. Students will reflect on how their own identities have impacted their experiences in science and develop strategies to promote equity in their future STEM or health science careers. Through service learning, students will co-author culturally relevant curricular materials that will expand faculty capacity to connect students' personal lives to course content. Materials developed by students will be used and assessed in STEM and/or health science courses at Foothill College, local middle schools, and/or local high schools, and will be made available for a nationwide audience of teachers and professors.

## **MATH 105 • INTERMEDIATE ALGEBRA**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Advisory:</b>	Not open to students with credit in MATH 108.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Quadratic, polynomial, rational, radical, exponential, and logarithmic functions and expressions with an emphasis on graphing and applications.

**MATH 180 • QUANTITATIVE REASONING**

<b>Units:</b>	5
<b>Hours:</b>	4 lecture, 3 laboratory per week (84 total per quarter)
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	Not Repeatable

Students will be able to apply mathematical reasoning in their personal, professional, and academic lives, to investigate new contexts, develop and propose possible solutions, discuss and analyze proposed plans, and make decisions. Students will learn to value the collaborative process of explaining, investigating, comparing, and assessing a variety of perspectives and approaches. Through immersion in contextualized lessons, students will practice quantitative thinking as they build skill in communication, critical and creative thinking, and computation. They will grow their knowledge and understanding of themselves, each other, and the world, through the study of culturally-relevant contexts, such as personal finance, health and wellness, membership in society, and the environment.

**MATH 211A • JUST-IN-TIME SUPPORT FOR MATH 1A**

<b>Units:</b>	2.5
<b>Hours:</b>	2.5 lecture per week (30 total per quarter)
<b>Corequisite:</b>	MATH 1A.
<b>Degree and Credit Status:</b>	Non-Degree-Applicable Credit Course Basic Skills
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Pass/No Pass Only
<b>Repeatability:</b>	Not Repeatable

A just-in-time approach to the core prerequisite skills, competencies, and concepts needed in Calculus I. Intended for students who are concurrently enrolled in MATH 1A at Foothill College and who want extra support in calculus. Topics include: a review of skills developed in precalculus, including developing a knowledge of function families with their graphs and behavior, transformations, average rate of change, inverses, and compositions.

**MATH 211B • JUST-IN-TIME SUPPORT FOR MATH 1B**

<b>Units:</b>	2.5
<b>Hours:</b>	2.5 lecture per week (30 total per quarter)
<b>Corequisite:</b>	MATH 1B.
<b>Degree and Credit Status:</b>	Non-Degree-Applicable Credit Course Basic Skills
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Pass/No Pass Only
<b>Repeatability:</b>	Not Repeatable

A just-in-time approach to the core prerequisite skills, competencies, and concepts needed in Calculus II. Intended for students who are concurrently enrolled in MATH 1B at Foothill College and who want extra support in calculus. Topics include: a review of skills developed in precalculus, including advanced algebra manipulations, polar curves and parametric equations, and advanced graphing skills.

**MATH 217 • INTEGRATED STATISTICS I**

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.
<b>Degree and Credit Status:</b>	Non-Degree-Applicable Credit Course Basic Skills, 2 Levels Below Transfer
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

The first of two courses in the Statway sequence. Covers concepts and methods of statistics with an emphasis on data analysis. Topics include methods for collecting data, graphical and numerical descriptive statistics, correlation, simple linear regression, basic concepts of probability, confidence intervals and hypothesis tests for means and proportions, chi-square tests, and ANOVA. Application problems will be taken from the fields of business, economics, medicine, engineering, education, psychology, and sociology, and from culturally-diverse situations. This sequence is recommended for students with majors that require no mathematics beyond freshman-level statistics.



## **MATH 233 • JUST-IN-TIME SUPPORT FOR MATH 33**

<b>Units:</b>	2.5
<b>Hours:</b>	2.5 lecture per week (30 total per quarter)
<b>Corequisite:</b>	MATH 33.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.
<b>Degree and Credit Status:</b>	Non-Degree-Applicable Credit Course Basic Skills
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Pass/No Pass Only
<b>Repeatability:</b>	Not Repeatable

A just-in-time approach to the core prerequisite skills, competencies, and concepts needed in Math for Financial Thriving. Intended for students who are concurrently enrolled in MATH 33 at Foothill College. Topics include: a review of computational skills developed in beginning and intermediate algebra, including proportional reasoning, order of operations, simplifying expressions, solving equations, use of variables, creating and using graphical displays.

## **MATH 240A • JUST-IN-TIME SUPPORT FOR MATH 40A**

<b>Units:</b>	2.5
<b>Hours:</b>	2.5 lecture per week (30 total per quarter)
<b>Corequisite:</b>	MATH 40A.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249; not open to students with credit in MATH 280.
<b>Degree and Credit Status:</b>	Non-Degree-Applicable Credit Course Basic Skills
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable
<b>Formerly:</b>	MATH 280

A just-in-time approach to the core prerequisite skills, competencies, and concepts needed in Quantitative Reasoning. Intended for students who are concurrently enrolled in MATH 40A at Foothill College. Topics include: a review of computational skills developed in beginning and intermediate algebra, including proportional reasoning, order of operations, simplifying expressions, solving equations, use of variables, creating and using graphical displays.

## **MATH 247 • SUPPORT FOR MATH 47**

<b>Units:</b>	3
<b>Hours:</b>	3 lecture per week (36 total per quarter)
<b>Corequisite:</b>	MATH 47.
<b>Degree and Credit Status:</b>	Non-Degree-Applicable Credit Course Basic Skills
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Pass/No Pass Only
<b>Repeatability:</b>	Not Repeatable

Core prerequisite skills, competencies, and concepts needed in Path to Calculus. Intended for students who are concurrently enrolled in MATH 47 at Foothill College and who want extra support. Topics include a review of skills, including developing a knowledge of function families with their graphs and behavior, transformations, average rate of change, inverses, and compositions. Family functions include linear, quadratic, and power.

## **MATH 248A • JUST-IN-TIME SUPPORT FOR MATH 48A**

<b>Units:</b>	2.5
<b>Hours:</b>	2.5 lecture per week (30 total per quarter)
<b>Corequisite:</b>	MATH 48A.
<b>Advisory:</b>	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.
<b>Degree and Credit Status:</b>	Non-Degree-Applicable Credit Course Basic Skills
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	None
<b>Grade Type:</b>	Pass/No Pass Only
<b>Repeatability:</b>	Not Repeatable

A just-in-time approach to the core prerequisite skills, competencies, and concepts needed in Precalculus I. Intended for students majoring in science, technology, engineering, and mathematics who are concurrently enrolled in MATH 48A at Foothill College. Topics include: a review of computational skills developed in beginning and intermediate algebra, including factoring, graphing linear equations, solving absolute value equations and inequalities, and analyzing functions, including quadratic functions.