

Mathematics & Statistics

Overview

Folsom Lake College's mathematics program provides students with the ability to think logically and abstractly and develop the problem-solving and computational skills necessary for success in any field of study. Mathematics is a multifaceted subject of great beauty and application. The study of mathematics explores some of the deepest puzzles that have ever been encountered and equips the student with a universal language used to study quantities and relationships in all fields.

View the [FLC Mathematics & Statistics Tree Sequence \(/flc/main/doc/support-services/Assessment-Orientation/Math_tree_sequence.pdf\)](/flc/main/doc/support-services/Assessment-Orientation/Math_tree_sequence.pdf) (PDF) and the [Math and Statistics Placement \(/admissions/placement/math-and-statistics-placement\)](/admissions/placement/math-and-statistics-placement) webpage.



Career Options

- Actuary
- Architect
- Assessor
- Auditor
- Biologist
- Budget Analyst
- Chemist
- Computer Programmer
- Controller
- Demographer
- Dentist
- Doctor
- Economist
- Engineering
- Epidemiologist
- Finance
- Mathematician
- Operations Researcher

- Public Opinion Analyst
- Statistician
- Surveyor
- Systems Analyst
- Teacher
- Veterinarian

Most career options may require more than two years of college study.

Highlights

- A professional and innovative faculty committed to providing the best possible mathematics education
- A comprehensive mathematics curriculum addressing the needs of both the transfer student and the non-transfer student

Program Maps

[Science, Technology, Engineering, and Mathematics Undecided Major \(/frc/main/doc/instruction/program-maps/STEM-Uncecided-major.pdf\)](/frc/main/doc/instruction/program-maps/STEM-Uncecided-major.pdf)

[Mathematics & Statistics, Mathematics, A.S.-T Degree \(/frc/main/doc/instruction/program-maps/Mathematics-AST.pdf\)](/frc/main/doc/instruction/program-maps/Mathematics-AST.pdf)

[Interdisciplinary Studies: Math and Science, A.A. Degree \(/frc/main/doc/instruction/program-maps/IS-Math-Science.pdf\)](/frc/main/doc/instruction/program-maps/IS-Math-Science.pdf)

[Mathematics & Statistics, Mathematics, A.S. Degree \(/frc/main/doc/instruction/program-maps/Mathematics-AS.pdf\)](/frc/main/doc/instruction/program-maps/Mathematics-AS.pdf)

[Mathematics & Statistics, STEM Math, Certificate of Achievement \(/frc/main/doc/instruction/program-maps/Stem-Math-Certificate.pdf\)](/frc/main/doc/instruction/program-maps/Stem-Math-Certificate.pdf)

Dean [Greg McCormac \(/about-us/contact-us/faculty-and-staff-directory/greg-mccormac\)](/about-us/contact-us/faculty-and-staff-directory/greg-mccormac)

Department Chair [Kevin Pipkin \(/about-us/contact-us/faculty-and-staff-directory/kevin-pipkin\)](/about-us/contact-us/faculty-and-staff-directory/kevin-pipkin)

Meta-Major [Science, Technology, Engineering, and Mathematics \(/academics/meta-majors/science-technology-engineering-and-mathematics\)](/academics/meta-majors/science-technology-engineering-and-mathematics)

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Associate Degrees for Transfer

A.S.-T. in Mathematics

The Associate in Science in Mathematics for Transfer Degree program provides students with a major that fulfills the general requirements for transfer to the California State University. Students with this degree will receive priority admission with junior status to the California State University system. Students should work closely with their Folsom Lake College counselor to ensure that they are taking the appropriate coursework to prepare for majoring in Mathematics at the Institution they wish to transfer to because major and general education requirements may vary for each CSU and the degree may only transfer to specific institutions.

This program has the following completion requirements:

- (1) Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University, including both of the following:
 - (A) The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements.
 - (B) A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.
- (2) Obtainment of a minimum grade point average of 2.0.

ADTs also require that students must earn a C or better in all courses required for the major or area of emphasis.

Catalog Date: June 1, 2020

Degree Requirements

COURSE CODE	COURSE TITLE	UNITS
MATH 400	Calculus I	5
MATH 401	Calculus II	5
MATH 402	Calculus III	5
MATH 410	Introduction to Linear Algebra	3
MATH 420	Differential Equations	4
Total Units:		22

The Associate in Science in Mathematics for Transfer (AS-T) degree may be obtained by completion of 60 transferable, semester units with a minimum 2.0 GPA, including (a) the major or area of emphasis

described in the Required Program, and (b) either the Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education-Breadth Requirements.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- explain and apply basic concepts of single variate calculus including various forms of derivatives and integrals, their interconnections, and their uses in analyzing and solving real-world problems.
- explain and apply basic concepts of multivariate calculus, linear algebra, or differential equation techniques, their interconnections, and their uses in analyzing and solving real-world problems.
- write logical proofs of basic theorems.
- use appropriate applications to demonstrate mathematical problem solving.

Career Information

Mathematicians work as statisticians, analysts, computer programmers, actuaries, researchers, planners, and educators. The requirements of this degree may also fill the needs of students entering into engineering, the sciences, and economics.

Associate Degrees

A.A. in Interdisciplinary Studies: Math and Science

The Interdisciplinary Studies degree is designed for students who wish to obtain a broad knowledge of arts and sciences plus additional coursework in a prescribed "Area of Emphasis". This program is a good choice for students planning on transferring to the California State University or University of California. The student will be able to satisfy general education requirements, plus focus on transferable course work that relates to a specific major and/or individual interest. This degree will have an "Area of Emphasis" in Math and Science. These courses emphasize the natural sciences which examine the physical universe, its life forms and its natural phenomena. Courses in math emphasize the development of mathematical and quantitative reasoning skills beyond the level of intermediate algebra. Students will be able to demonstrate an understanding of the methodologies of science as investigative tools. Students will also examine the influence that the acquisition of scientific knowledge has on the development of the world's civilizations. Possible majors at a four-year institution include, but are not limited to: mathematics, biology, chemistry, and physical science.

It is highly recommended that students consult a counselor to determine the classes within each area that will best prepare them for their intended transfer major.

Catalog Date: June 1, 2020

Degree Requirements

COURSE CODE	COURSE TITLE	UNITS
A minimum of 18 units from the following:		18
You must select courses from at least three different disciplines and complete courses from both math and science. If a course is cross-listed with another on the list, only one may apply to the degree.		
ANTH 300	Biological Anthropology (3)	
ANTH 301	Biological Anthropology Laboratory (1)	
ANTH 303	Introduction to Forensic Anthropology (3)	
ASTR 300	Introduction to Astronomy (3)	
ASTR 400	Astronomy Laboratory (1)	
BIOL 300	The Foundations of Biology (3)	
BIOL 307	Biology of Organisms (4)	
BIOL 310	General Biology (4)	
BIOL 323	Plants and People (4)	
BIOL 350	Environmental Biology (3)	
BIOL 400	Principles of Biology (5)	
BIOL 410	Principles of Botany (5)	
BIOL 420	Principles of Zoology (5)	
BIOL 430	Anatomy and Physiology (5)	
BIOL 431	Anatomy and Physiology (5)	
BIOL 440	General Microbiology (4)	
BIOL 442	General Microbiology and Public Health (5)	
CHEM 305	Introduction to Chemistry (5)	
CHEM 306	Introduction to Organic and Biological Chemistry (5)	
CHEM 400	General Chemistry I (5)	
CHEM 401	General Chemistry II (5)	
CHEM 410	Quantitative Analysis (5)	
CHEM 420	Organic Chemistry I (5)	
CHEM 421	Organic Chemistry II (5)	
GEOG 300	Physical Geography: Exploring Earth's Environmental Systems (3)	
GEOG 301	Physical Geography Laboratory (1)	
GEOG 306	Weather and Climate (3)	
GEOLOGY 300	Physical Geology (3)	
GEOLOGY 301	Physical Geology Laboratory (1)	
GEOLOGY 305	Earth Science (3)	
GEOLOGY 306	Earth Science Laboratory (1)	

COURSE CODE	COURSE TITLE	UNITS
GEOL 310	Historical Geology (3)	
GEOL 311	Historical Geology Laboratory (1)	
GEOL 330	Introduction to Oceanography (3)	
GEOL 345	Geology of California (3)	
MATH 300	Introduction to Mathematical Ideas (3)	
MATH 310	Mathematical Discovery (3)	
MATH 335	Trigonometry with College Algebra (5)	
MATH 341	Calculus for Business and Economics (4)	
MATH 343	Modern Business Mathematics (4)	
MATH 355	Calculus for Biology and Medicine I (4)	
MATH 356	Calculus for Biology and Medicine II (4)	
MATH 370	Pre-Calculus Mathematics (5)	
MATH 400	Calculus I (5)	
MATH 401	Calculus II (5)	
MATH 402	Calculus III (5)	
MATH 410	Introduction to Linear Algebra (3)	
MATH 420	Differential Equations (4)	
NUTRI 300	Nutrition (3)	
NUTRI 340	Nutrition and Metabolism (3)	
PHYS 310	Conceptual Physics (3)	
PHYS 311	Basic Physics (3)	
PHYS 350	General Physics (4)	
PHYS 360	General Physics (4)	
PHYS 411	Mechanics of Solids and Fluids (4)	
PHYS 421	Electricity and Magnetism (4)	
PHYS 431	Heat, Waves, Light and Modern Physics (4)	
PS 302	Introduction to Physical Science (4)	
PSYC 312	Biological Psychology (4)	
PSYC 330	Introductory Statistics for the Behavioral Sciences (3)	
STAT 300	Introduction to Probability and Statistics (4)	
Total Units:		18

The Interdisciplinary Studies: Math and Science Associate in Arts (A.A.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See FLC graduation requirements.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- reason quantitatively and empirically (Math and Science).

A.S. in Mathematics

This degree is designed to allow students to meet common lower division requirements for a major in mathematics at many four-year transfer institutions. Required courses for this degree may also fulfill lower division requirements for four-year degrees in computer science and engineering.

Catalog Date: June 1, 2020

Degree Requirements

COURSE CODE	COURSE TITLE	UNITS
MATH 400	Calculus I	5
MATH 401	Calculus II	5
MATH 402	Calculus III	5
MATH 420	Differential Equations	4
MATH 410	Introduction to Linear Algebra	3
A minimum of 4 units from the following:		4
CISP 360	Introduction to Structured Programming (4)	
CISP 370	Beginning Visual Basic (4)	
STAT 300	Introduction to Probability and Statistics (4)	
Total Units:		26

The Mathematics Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See FLC graduation requirements.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- identify, formulate, and solve applied problems (using calculus and linear algebra) in verbal, numeric, graphical, and symbolic form related to science, economics, or business.
- recognize and construct valid arguments using deductive and inductive reasoning skills.
- define and utilize terminology of mathematics with emphasis in calculus, linear algebra, and either statistics, logic or problem solving.
- calculate derivatives and integrals using a variety of defined rules and strategies of calculus, algebraic properties and trigonometric identities.

Certificate of Achievement

STEM Math Certificate

The STEM Math Certificate provides students with an option to receive college affirmation of math related work done on a pathway related to science, technology, engineering, or mathematics. Students majoring in STEM related fields often transfer without the need for an associates degree even though many lower division preparation courses were taken. A common thread throughout these majors is a high level of proficiency in mathematics.

Catalog Date: June 1, 2020

Certificate Requirements

COURSE CODE	COURSE TITLE	UNITS
A minimum of 16 units from the following:		16
MATH 335	Trigonometry with College Algebra (5)	
MATH 341	Calculus for Business and Economics (4)	
MATH 355	Calculus for Biology and Medicine I (4)	
MATH 356	Calculus for Biology and Medicine II (4)	
MATH 370	Pre-Calculus Mathematics (5)	
MATH 400	Calculus I (5)	
MATH 401	Calculus II (5)	
MATH 402	Calculus III (5)	
MATH 410	Introduction to Linear Algebra (3)	
MATH 420	Differential Equations (4)	
STAT 300	Introduction to Probability and Statistics (4)	
Total Units:		16

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- use appropriate applications to demonstrate mathematical problem solving.
- use trigonometric concepts to solve a variety of triangle related real-world applications.
- explain and apply basic concepts of single variate calculus including various forms of derivatives and integrals, their interconnections, and their uses in analyzing and solving real-world problems.

Career Information

A strong Math foundation is required for nearly every STEM major plus a number of other majors that may not be traditionally listed as STEM. The courses within this certificate provide strong foundations for many majors and open many potential career doors. Visit the Career Center to find out more about jobs related to the following majors and career options. Sciences: Biology, Chemistry, Physics, and other majors require 2 or 3 semesters of calculus and sometimes additional courses. Technology: Computer Science and Computer Programming majors require Calculus and some higher courses in mathematics. Engineering: Mechanical, Civil, Electrical engineers, to name a few, all require our Calculus, Linear Algebra, and Differential Equations. Mathematics: Mathematicians work as statisticians, analysts, computer programmers, actuaries, researchers, planners, and educators. Economics and Industrial Engineering majors require Calculus and some higher level courses and sometimes Statistics as well.

Mathematics (MATH) Courses

MATH 10 Developing Confidence in Math

Units:	1
Hours:	18 hours LEC
Prerequisite:	None.
Corequisite:	MATH 20, 30, 100, 110, or 120
Catalog Date:	June 1, 2020

This course helps students become more effective learners of mathematics. Topics addressed are how to overcome math anxiety and build confidence in math, study and note taking skills, time management, and test preparation.

Students must be enrolled in Math 20, 30, 100, 110 or 120 to take this course or have the permission of the instructor.

This course is graded on a Pass/No Pass basis.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- analyze causes of math anxiety.
- examine myths about learning mathematics and recognize experiences in math which have influenced personal attitudes toward math.
- create a study plan for mathematics tests and courses.
- apply learning and test-taking strategies to increase success in mathematics.

MATH 20 Arithmetic

Units:	5
Hours:	90 hours LEC
Prerequisite:	None.
Catalog Date:	June 1, 2020

This course provides group and individual instruction in the fundamentals of arithmetic with an emphasis on written and mental computational skills. In order to enhance mental computational skills, calculators will not be allowed. Topics include operations with whole numbers, fractions, decimals, signed numbers, percents, ratios, proportions, problem solving, and applications involving measurement and geometry.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- compute with accuracy problems involving the basic operations of arithmetic (addition, subtraction, multiplication, division, exponents, order of operations) on whole numbers, fractions, and decimals.
- convert numeric information into any of the three forms: fraction, percent, decimal.
- solve computation problems involving ratios, proportions, and percents.
- solve applied problems involving whole numbers, fractions, decimals, proportions, measurement, and percents.
- convert measurement units between English and Metric using multiplication, division, and unit fractions.

MATH 30 Pre-Algebra Mathematics

Units:	5
Hours:	90 hours LEC
Prerequisite:	MATH 20 with a grade of "C" or better, or placement through the assessment process.
Catalog Date:	June 1, 2020

This course in prealgebra mathematics emphasizes the fundamental operations on integers and decimals as well as in geometric figures, measurement, and algebra with an emphasis on written and mental computational skills. Topics include: fractions; decimals; signed numbers; properties of exponents; scientific notation; evaluation of expressions and formulas; linear equations; algebraic manipulations on polynomials; and the rectangular coordinate system.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- simplify expressions with rational coefficients.
- solve linear equations in one variable involving rational numbers.
- manually solve applied problems using rational numbers, variable expressions, scientific notation, equations, geometric formulas, measurement conversions, proportions, and percent.
- graph linear equations in two variables.

MATH 100 Elementary Algebra

Units:	5
Hours:	90 hours LEC
Prerequisite:	MATH 30 with a grade of "C" or better, or placement through the assessment process.
Catalog Date:	June 1, 2020

This course includes the fundamental concepts and operations of algebra with problem solving skills emphasized throughout. Topics include: properties of real numbers, linear equations and inequalities, integer exponents, polynomials, factoring polynomials, rational expressions and equations, radical expressions and equations, systems of linear equations and inequalities, the rectangular coordinate system, graphs and equations of lines, and solving quadratic equations.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- solve equations involving linear, quadratic, rational and radical expressions.
- manually evaluate, simplify and expand polynomial, exponential, and rational expressions.
- completely factor polynomial expressions.
- graph solution sets of linear equations and linear inequalities in two variables.
- solve application problems using beginning context-appropriate models.

MATH 110 Elementary Geometry

Units:	5
Hours:	90 hours LEC
Prerequisite:	MATH 100 with a grade of "C" or better, or placement through the assessment process.
General Education:	AA/AS Area II(b)
Catalog Date:	June 1, 2020

This course covers aspects of elementary geometry. Topics include terms and definitions, properties of parallel lines and parallelograms, congruent and similar triangles, properties of triangles, right triangles, and basic trigonometry. Later topics include properties of circles, construction of loci, areas, and volumes. The course also emphasizes problem solving strategies, elementary logic, and reading and writing proofs. Students may be required to purchase a compass, straight edge or ruler, and a protractor.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- compute lengths, areas, and volumes of geometric objects.
- apply algebraic skills to geometric problems.
- solve mathematical and logical problems which require geometric skills.
- prove geometric theorems using both direct and indirect proof structures.
- construct geometric loci using straightedge and compass.
- utilize the appropriate trigonometric ratios to find angles and sides of right triangles.

MATH 120 Intermediate Algebra

Units:	5
Hours:	90 hours LEC
Prerequisite:	MATH 100 with a grade of "C" or better, or placement through the assessment process.
General Education:	AA/AS Area II(b)
Catalog Date:	June 1, 2020

This course reviews and extends the concepts of elementary algebra with problem solving skills emphasized throughout. Topics which are reviewed and extended include: linear and quadratic equations, factoring polynomials, rational expressions, exponents, radicals, equations of lines, and systems of equations. New topics include: larger systems of equations, absolute value equations and inequalities, rational exponents, translations and reflections of key function graphs, function notation and function operations, exponential and logarithmic functions, graphs of quadratic and simple polynomial functions, quadratic inequalities, non-linear systems of equations, and an introduction to conic sections.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- solve equations involving polynomial, rational, absolute value, radical, exponential, or logarithmic expressions.
- graph and recognize graphs that have undergone simple transformations (translations, reflections, and some scale factors) for linear, quadratic, exponential, logarithmic, simple rational, and simple polynomial functions.
- demonstrate the ability to appropriately use function notation, terminology, and operations.
- solve application problems using intermediate context-appropriate models.

MATH 125 Intermediate Algebra for Statistics and Liberal Arts

Units:	4
Hours:	72 hours LEC
Prerequisite:	MATH 100 with a grade of "C" or better, or placement through the assessment process.
General Education:	AA/AS Area II(b)
Catalog Date:	June 1, 2020

This course meets the prerequisite to STAT 300, Math 310, Math 300, and PSYC 330 and is intended for Liberal Arts Majors. The course topics include equations and functions that are linear, quadratic, radical, rational, exponential, and logarithmic. This course will feature discovery activities that utilize technology to help deal with applications to real data sets and problems which are current and relevant.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- identify and solve linear, radical, quadratic, rational, exponential, and logarithmic equations.
- identify and create graphs of linear, radical, quadratic, exponential, and logarithmic functions.
- construct and compare functions with their inverses.
- associate equations and information from tables or charts with their corresponding graphs.
- organize information into any/all of its four forms: words, data tables, graphs, and algebraic equations.
- accurately solve absolute value inequalities and systems of linear equations and use systems of equations to solve applied problems.
- design an accurately scaled and labeled scatterplot of data, use a best fit line to examine linear trends, interpret the meaning of slope as a rate of change.

MATH 295 Independent Studies in Mathematics

Units: 1 - 3
Hours: 54 - 162 hours LAB
Prerequisite: None.
Catalog Date: June 1, 2020

MATH 299 Experimental Offering in Mathematics

Units: 0.5 - 4
Prerequisite: None.
Catalog Date: June 1, 2020

MATH 300 Introduction to Mathematical Ideas

Units: 3
Hours: 54 hours LEC
Prerequisite: MATH 120 with a grade of "C" or better, or placement through the assessment process.
Transferable: CSU; UC
General Education: AA/AS Area II(b); CSU Area B4; IGETC Area 2 (effective Fall 2020)
Catalog Date: June 1, 2020

This course is intended for liberal arts students but may be of interest to others as well. Several specific topics will be covered including number theory, algebraic modeling, geometry, combinatorics, probability, statistics, trigonometry, graph theory, and voting and apportionment. This course is not recommended for students entering elementary school teaching or for business administration majors. A graphing calculator may be required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- describe types of applications that would be associated with number theory and counting methods, trigonometry, geometry, statistics and algebraic modeling.
- identify appropriate procedures as well as solve applications number theory and counting methods, trigonometry, geometry, statistics, algebraic modeling, and voting and apportionment.
- apply critical thinking skills to problem solving when new types of problems are put forth.

MATH 310 Mathematical Discovery

Units: 3
Hours: 54 hours LEC
Prerequisite: Math 110 (Geometry) or one year of high school Geometry and Math 120 or Math 125; both with a grade of "C" or better; or placement through the assessment process.
Transferable: CSU; UC
General Education: AA/AS Area II(b); CSU Area B4
Catalog Date: June 1, 2020

This course is designed to enhance students' understanding of mathematics by involving them in the mathematical process of exploration, conjecture, and proof. Students will explore mathematical patterns and relations, formulate conjectures, and prove their conjectures. Areas of mathematics from which content may be derived include number theory, statistics, probability, geometry, and sequences and series. This course is recommended for students interested in a career in education.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- explore new branches of mathematics by recognizing connections and patterns to previously encountered topics.
- solve applied problems by recognizing connections between methods of solution employed in various mathematical fields.
- develop and explain a mathematical solution to a problem not previously encountered by the student.
- explore a mathematical problem independently, extending their solution to questions not necessarily posed by the instructor.

MATH 335 Trigonometry with College Algebra

Units: 5
Hours: 90 hours LEC
Prerequisite: Math 120 (Intermediate Algebra) and Geometry; both with a grade of "C" or better; or placement through the assessment process.
Transferable: CSU
General Education: AA/AS Area II(b); CSU Area B4
Catalog Date: June 1, 2020

This is a full trigonometry course with college algebra concepts reviewed, extended, and integrated when they are relevant to the trigonometric concepts. The trigonometric topics include right triangle trigonometry, unit circle trigonometry, graphs of trigonometric functions, proofs of trigonometric identities, solving trigonometric equations, applications of trigonometric functions (laws of sines and cosines), inverse trigonometric functions, polar coordinates, graphing polar functions, and 2-dimensional vectors. The algebra topics include exponential and logarithmic functions, complex numbers, in addition to solving equations, inequalities, and systems of equations. A graphing calculator may be required for this course.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- interpret trigonometric functions in working with right triangles, general triangles, and arcs of the unit circle.
- efficiently evaluate trigonometric and inverse trigonometric functions from memory involving special right triangles.
- efficiently evaluate trigonometric and inverse trigonometric functions at general angles from a table and by using a calculator.
- evaluate, expand, and simplify trigonometric, algebraic, logarithmic, and exponential expressions and solve equations (and prove identities) involving these expressions.
- graph and analyze trigonometric, rational, absolute value, exponential, and logarithmic functions, as well as conic sections, including algebraic transformations.
- solve application problems involving trigonometric, exponential, and logarithmic functions.

MATH 341 Calculus for Business and Economics

Units:	4
Hours:	72 hours LEC
Prerequisite:	MATH 120 with a grade of "C" or better, or placement through the assessment process.
Transferable:	CSU; UC (UC credit limitation: MATH 341, MATH 355 and MATH 400 combined: Maximum credit, one course)
General Education:	AA/AS Area II(b); CSU Area B4; IGETC Area 2
C-ID:	C-ID MATH 140
Catalog Date:	June 1, 2020

This course is designed around applications of sets, functions, limits, analytic geometry, and the differential and integral calculus in an economic and business context. This course is intended for business students; it is not recommended for mathematics and physical science majors.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- simplify algebraic expressions and solve algebraic equations related to business problems.
- evaluate limits and derivatives of algebraic, exponential and logarithmic functions, and apply them to business applications.
- formulate solutions to applications in business using definite and indefinite integrals.
- analyze functions of several variables and their relevance to business applications.

MATH 343 Modern Business Mathematics

Units:	4
Hours:	72 hours LEC
Prerequisite:	MATH 120 with a grade of "C" or better, or placement through the assessment process.
Transferable:	CSU
General Education:	AA/AS Area II(b); CSU Area B4
Catalog Date:	June 1, 2020

This course is designed around applications of mathematics in an economic and business context. The major topics included are functions, finance (interest and exponential models), rates of change, optimization, and linear programming. The content of the course is structured to incorporate tables, graphs and data sets collected from real-world situations. This course is not recommended for mathematics or physical science majors. A scientific calculator will be required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- analyze formulas, graphs, tables, and data sets in order to form conclusions and make predictions.
- calculate and interpret compound interest, present and future values, and annuities for various applications.
- graph and apply linear, quadratic, power, polynomial, exponential, and logarithmic functions in a given model.
- calculate and interpret solutions to linear programming problems.
- evaluate rates of change for a variety of functions and apply it to marginal analysis.
- calculate and interpret optimum values related to business applications.

MATH 355 Calculus for Biology and Medicine I

Units:	4
Hours:	72 hours LEC
Prerequisite:	MATH 335 with a grade of "C" or better, or placement through the assessment process.
Transferable:	CSU; UC (UC credit limitation: MATH 341, MATH 355 and MATH 400 combined: maximum credit, one course)
General Education:	AA/AS Area II(b); CSU Area B4; IGETC Area 2
Catalog Date:	June 1, 2020

This course is an introduction to differential calculus and elementary differential equations via applications in biology and medicine. It covers limits, derivatives of polynomials, trigonometric and exponential functions, graphing, and applications of the derivative to biology and medicine. Topics include the Fundamental Theorem of Calculus and techniques of integration, including integral tables and numerical methods. This course does not meet the prerequisite for the Engineering Physics series.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- differentiate polynomial, radical, trigonometric, logarithmic, and exponential functions.
- graph and analyze the curves of elementary functions.
- calculate maxima and minima of elementary functions.
- apply derivatives to applications in biology and medicine.
- integrate basic elementary functions.
- apply the Fundamental Theorem of Calculus to the evaluation of definite integrals.

MATH 356 Calculus for Biology and Medicine II

Units:	4
Hours:	72 hours LEC
Prerequisite:	MATH 355 with a grade of "C" or better
Transferable:	CSU; UC (UC credit limitation: MATH 356 and MATH 401 combined: maximum credit, one course.)
General Education:	AA/AS Area II(b); CSU Area B4; IGETC Area 2
Catalog Date:	June 1, 2020

This course covers matrix algebra with eigenvalues and eigenvectors, systems of linear equations, functions of several variables, partial derivatives, systems of differential equations, probability, and applications to biology and medicine. This course does not meet the prerequisite for the Engineering Physics series.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- solve systems of linear equations with matrix techniques.
- compute eigenvalues and eigenvectors for square matrices.
- solve systems of linear differential equations.
- apply systems of linear differential equations to problems in biology and medicine.
- compute partial derivatives of functions of several variables.
- compute double integrals.
- identify absolute and local extrema of functions of two variables.
- calculate equations of tangent planes to graphs of functions of two variables.

MATH 370 Pre-Calculus Mathematics

Units:	5
Hours:	90 hours LEC
Prerequisite:	MATH 335 with a grade of "C" or better, or placement through the assessment process.
Transferable:	CSU; UC
General Education:	AA/AS Area II(b); CSU Area B4; IGETC Area 2
Catalog Date:	June 1, 2020

This course is designed to prepare students for Calculus for STEM majors. Course content includes a brief review followed by an in-depth extension of the properties of polynomial, rational, exponential, logarithmic and trigonometric functions. Additional topics include systems of linear and non-linear equations and inequalities, conic sections, sequences and series, binomial theorem, analytic geometry, vectors, parametric, and polar equations. A graphing calculator may be required for this course.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- solve equations/inequalities involving polynomial, logarithmic, and exponential expressions.
- solve equations/inequalities involving trigonometric expressions. All students must be able to efficiently evaluate trigonometric functions using memorized special right triangle facts but tables of information and/or calculators may be used on application problems.
- graph and analyze polynomial, rational, absolute value, radical, exponential, logarithmic, and trigonometric functions using algebraic transformations.
- apply the properties of vectors, matrices, sequences, series, the polar coordinate system, and the binomial theorem to calculus or science problems.
- prove mathematical facts using algebraic manipulation, fundamental trigonometric identities, direct proof, indirect proof, and the principle of mathematical induction.
- solve applied problems using functions, vectors, matrices, sequences and series.

MATH 400 Calculus I

Units:	5
Hours:	90 hours LEC
Prerequisite:	MATH 370 with a grade of "C" or better, or placement through the assessment process.
Transferable:	CSU; UC (UC credit limitation: MATH 341, MATH 355 and MATH 400 combined: maximum credit, one course)

General Education: AA/AS Area II(b); CSU Area B4; IGETC Area 2
C-ID: C-ID MATH 210
Catalog Date: June 1, 2020

This course explores the basic concepts of analytic geometry, limits of functions, derivatives, and integrals. Topics covered will include finding the limits of functions by graphing and indeterminate forms of algebraic expressions. Derivatives and integrals involving algebraic, trigonometric, exponential, logarithmic, and inverse trigonometric functions will also be covered. Many applications will be covered, including those involving rectilinear motion, differentials, related rates, graphing, optimization, and finding areas of bounded regions. A graphing calculator may be required for this course.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- calculate limits and derivatives of algebraic and transcendental functions using a variety of techniques.
- demonstrate a knowledge of basic facts and formulas with limits, derivatives, and integration.
- graph algebraic and transcendental functions using information from limits, continuity, and derivatives.
- solve problems using derivatives including equations of tangent lines, related rates applications and optimization application problems.
- apply both the limit process and the Fundamental Theorem of Calculus to evaluate area related problems and utilize the appropriate substitution techniques to evaluate integrals.
- prove calculus theorems related to limits and derivatives.

MATH 401 Calculus II

Units: 5
Hours: 90 hours LEC
Prerequisite: MATH 400 with a grade of "C" or better
Transferable: CSU; UC (UC credit limitation: MATH 356 and MATH 401 combined: maximum credit, one course)
General Education: AA/AS Area II(b); CSU Area B4; IGETC Area 2
C-ID: C-ID MATH 220
Catalog Date: June 1, 2020

This course is a continuation of MATH 400. Topics covered include techniques of integration, numerical integration, improper integrals, infinite series, parametric equations, polar coordinates, and conic sections. Many applications will be covered including those involving areas between plane regions, volumes of revolution, work, moments and concepts of mass, average value, arc length, and surface area. A graphing calculator may be required for this course.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- utilize a variety of algebraic and trigonometric techniques to evaluate integral expressions.
- apply integration to problems involving volume, centers of mass, and work.
- analyze and manipulate infinite series, Taylor polynomials, and functions represented by power series.
- apply differentiation and integration techniques to equations in parametric and polar form.
- prove selected calculus theorems related to first year calculus.

MATH 402 Calculus III

Units: 5
Hours: 90 hours LEC
Prerequisite: MATH 401 with a grade of "C" or better
Transferable: CSU; UC
General Education: AA/AS Area II(b); CSU Area B4; IGETC Area 2
C-ID: C-ID MATH 230
Catalog Date: June 1, 2020

This course extends the concepts of limits, derivatives and integrals to vector-valued functions and functions of more than one variable. Topics covered will include three-dimensional analytic geometry and vectors, partial derivatives, multiple integrals, line integrals, surface integrals, and the theorems of Green, Gauss (Divergence), and Stokes. Many applications of the calculus will be included. A graphing calculator may be required for this course.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- compute a number of vector based function values on plane curves and space curves. These include velocity vectors, acceleration vectors, speed, curvature, arc-length, binormal vectors, unit tangent and unit normal vectors.
- optimize both a multivariate function of a surface and multivariate functions involving a constraint curve.
- utilize multiple integrals using rectangular, polar, cylindrical, or spherical coordinates in problems involving volume, moments, and mass.
- set up and evaluate line and surface integrals.
- apply Green's Theorem, Stokes' Theorem, and the Divergence Theorem to physics and engineering applications.

MATH 410 Introduction to Linear Algebra

Units:	3
Hours:	54 hours LEC
Prerequisite:	MATH 401 with a grade of "C" or better
Transferable:	CSU; UC
General Education:	AA/AS Area II(b); CSU Area B4
C-ID:	C-ID MATH 250
Catalog Date:	June 1, 2020

This course introduces linear algebra. Topics include matrices, determinants, systems of equations, vector spaces, linear transformations, eigenvectors, and applications. This course is intended for majors in mathematics, engineering, science, and related fields.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- solve a variety of systems of equations using matrices using methods appropriate to lower division linear algebra.
- use bases and orthonormal bases to solve problems in linear algebra.
- find the dimension of spaces such as those associated with matrices and linear transformations.
- find eigenvalues and eigenvectors and use them in applications.
- prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors, properties of subspaces, linearity, injectivity and surjectivity of functions, and properties of eigenvectors and eigenvalues.

MATH 420 Differential Equations

Units:	4
Hours:	72 hours LEC
Prerequisite:	MATH 401 with a grade of "C" or better
Transferable:	CSU; UC
General Education:	AA/AS Area II(b); CSU Area B4
C-ID:	C-ID MATH 240
Catalog Date:	June 1, 2020

This course is a study of ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, boundary value problems, and applications.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- solve a variety of ordinary differential equations using techniques such as reduction of order, method of undetermined coefficients, variation of parameters, power series, and Laplace transforms.
- analyze, model, and solve elementary applied science problems such as Newton's Law of Cooling, mixing, falling bodies, and Newton's Second Law of Motion with ordinary differential equations.
- identify differential equations such as linear, separable, exact, and Cauchy-Euler.
- solve systems of linear differential equations.
- evaluate ordinary differential equations for existence and uniqueness of solutions using appropriate theorems.

MATH 495 Independent Studies in Mathematics

Units:	1 - 3
Hours:	54 - 162 hours LAB
Prerequisite:	None.
Transferable:	CSU
Catalog Date:	June 1, 2020

MATH 499 Experimental Offering in Mathematics

Units:	0.5 - 4
Prerequisite:	None.
Transferable:	CSU
Catalog Date:	June 1, 2020

Mathematics Support (MATHS) Courses

MATHS 15 Support for Intermediate Algebra

Units:	3
Hours:	54 hours LEC
Prerequisite:	None.
Corequisite:	MATH 120
Catalog Date:	June 1, 2020

This course provides intensive instruction and practice in the core mathematical skills, competencies, and concepts necessary for success in MATH 120, Intermediate Algebra. You must be enrolled in the corresponding section of Math 120 while taking this course. Topics and homework assignments are often connected to the students' assignments in MATH 120. This class is graded on a pass/no pass basis and does not meet math competency.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- use support mathematics skills to simplify expressions and solve equations involving absolute values, polynomials, rational expressions, radicals, exponentials, and logarithms.
- use support mathematics skills to solve systems of equations and solve linear, polynomial, and absolute value inequalities.
- use support mathematics skills to demonstrate an understanding of the definition of a function and use function notation, including the algebra of functions, composite functions, and inverse functions.
- use support mathematics skills to sketch the graphs of basic functions and the transformations of these functions.
- use support mathematics skills to apply algebraic methods when solving word problems.

MATHS 46 Support for Calculus for Business and Economics

Units:	3
Hours:	54 hours LEC
Prerequisite:	None.
Corequisite:	MATH 341
Catalog Date:	June 1, 2020

This course provides intensive instruction and practice in the core mathematical skills, competencies, and concepts necessary for success in Math 341, Calculus for Business and Economics. You must be enrolled in the corresponding section of Math 341 while taking this course. Topics and homework assignments are often connected to the students' assignments in MATH 341. The course includes applications of the concepts and skills covered. This class is graded on a pass/no pass basis and does not meet math competency. A scientific calculator will be required for this course.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- use support mathematics skills to find the derivatives of polynomial, rational, exponential, and logarithmic functions.
- use support mathematics skills to find the derivatives of functions involving constants, sums, differences, products, quotients, and the chain rule.
- use support mathematics skills to sketch the graphs of functions using horizontal and vertical asymptotes, intercepts, first and second derivatives to determine intervals where the function is increasing and decreasing, maximum and minimum values, intervals of concavity, and points of inflection.
- use support mathematics skills to analyze the marginal cost, profit, and revenue when given the appropriate function.
- use support mathematics skills to determine maxima and minima in optimization problems using the derivative.
- use support mathematics skills to find rates of change and tangent lines.
- use support mathematics skills to analyze revenue, cost, and profit.
- use support mathematics skills to find definite and indefinite integrals when applying the general integral formulas, integration by substitution, and other integration techniques.
- use support mathematics skills in business and economics applications.

MATHS 55 Support for Trigonometry with College Algebra

Units:	3
Hours:	54 hours LEC
Prerequisite:	None.
Corequisite:	MATH 335
Catalog Date:	June 1, 2020

This course provides intensive instruction and practice in the core mathematical skills, competencies, and concepts necessary for success in MATH 335: Trigonometry with College Algebra. You must be enrolled in the corresponding section of Math 335 while taking this course. Topics and homework assignments are often connected to the students' assignments in MATH 335. The course includes applications of the concepts and skills covered. A scientific calculator is required for this course. See notes on the e-schedule for more information. This class is graded on a pass/no pass basis and does not meet math competency.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- use support mathematics skills to apply trigonometric functions to the angles of a right triangle and arcs on the unit circle.
- use support mathematics skills to evaluate trigonometric functions of common angles (using both radian and degree measure) and inverse trigonometric functions.
- use support mathematics skills to recognize, apply, and prove trigonometric identities and solve trigonometric equations.
- use support mathematics skills to create and analyze graphs of polynomial functions, rational functions, trigonometric functions, inverse trigonometric functions, curves in parametric form, and curves in polar form. (Trigonometric function graphing will include changes in period, phase, and amplitude.)
- use support mathematics skills to convert between polar and rectangular coordinates and equations, compute and solve equations involving complex numbers in standard and trigonometric form, and use DeMoivre's Theorem to evaluate powers and roots of complex numbers.
- use support mathematics skills to apply trigonometric and algebraic concepts as problem-solving tools by modeling problems with appropriate equations, including use of the Laws of Sines and Cosines and vector applications with vectors represented in both (a, b) and $ai+bj$ form.

MATHS 80 Calculus I: Problem Solving

Units:	1
Hours:	18 hours LEC
Prerequisite:	None.
Corequisite:	MATH 400
Catalog Date:	June 1, 2020

This course provides additional problem solving practice, theory practice, and study skills support for students concurrently enrolled in MATH 400, Calculus I. Please refer to the class notes in the online schedule of classes for details to the particular sections of MATH 400 that will be associated with this section. This class is graded on a pass/no pass basis and does not meet math competency. A graphing calculator may be required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- calculate limits and derivatives of algebraic and transcendental functions using a variety of techniques.
- graph algebraic and transcendental functions using information from limits, continuity, and derivatives.
- solve problems using derivatives including equations of tangent lines, related rates applications and optimization application problems.
- apply both the limit process and the Fundamental Theorem of Calculus to evaluate area related problems and utilize the appropriate substitution techniques to evaluate integrals.

MATHS 81 Calculus II: Problem Solving

Units:	1
Hours:	18 hours LEC
Prerequisite:	None.
Corequisite:	MATH 401
Catalog Date:	June 1, 2020

This course provides additional problem solving practice, theory practice, and study skills support for students concurrently enrolled in MATH 401, Calculus II. Please refer to the class notes in the online schedule of classes for details to the particular sections of MATH 401 that will be associated with this section. This class is graded on a pass/no pass basis and does not meet math competency. A graphing calculator may be required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- use integrals to define volumes of regions of revolution about horizontal and vertical lines, arc-length, area of surfaces of revolution, calculations of work, moments, and mass.
- apply a number of different integration techniques to evaluate integrals. These include integration by parts, trigonometric substitution, and partial fraction decomposition.
- utilize differentiation and integration, and some of their basic applications within parametric equations and polar equations.
- create Taylor Polynomials to approximate functions and manipulate these using algebraic or calculus techniques to model additional functions.

MATHS 82 Calculus III: Problem Solving

Units:	1
Hours:	18 hours LEC
Prerequisite:	None.
Corequisite:	MATH 402
Catalog Date:	June 1, 2020

This course provides additional problem solving practice, theory practice, and study skills support for students concurrently enrolled in MATH 402, Calculus III. Please refer to the class notes in the online schedule of classes for details to the particular sections of MATH 402 that will be associated with this section. This class is graded on a pass/no pass basis and does not meet math competency. A graphing calculator may be required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- compute a number of vector based function values on plane curves and space curves. These include velocity vectors, acceleration vectors, speed, curvature, arc-length, binormal vectors, unit tangent and unit normal vectors.
- optimize both a multivariate function of a surface and multivariate functions involving a constraint curve.
- utilize multiple integrals using rectangular, polar, cylindrical, or spherical coordinates in problems involving volume, moments, and mass.
- set up and evaluate line and surface integrals.
- apply Green's Theorem, Stokes' Theorem, and the Divergence Theorem to physics and engineering applications.

MATHS 95 Support for Introduction to Mathematical Ideas

Units:	2
Hours:	36 hours LEC

Prerequisite:	None.
Corequisite:	MATH 300
Catalog Date:	June 1, 2020

This course provides intensive instruction and practice in the core mathematical skills, competencies, and concepts necessary for success in Math 300, Introduction to Mathematical Ideas. You must be enrolled in the corresponding section of Math 300 while taking this course. Topics and homework assignments are often related to the students' assignments in MATH 300. The course includes applications of the concepts and skills covered. This class is graded on a pass/no pass basis and does not meet math competency. A scientific calculator may be required for this course.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- use support mathematics skills to describe types of applications that would be associated with number theory and counting methods, trigonometry, geometry, statistics and algebraic modeling.
- use support mathematics skills to identify appropriate procedures as well as solve applications in number theory and counting methods, trigonometry, geometry, statistics, algebraic modeling, and voting and apportionment.
- use support mathematics skills to apply critical thinking skills to problem solving when new types of problems are put forth.

MATHS 299 Experimental Offering in Mathematics Support

Units:	0.5 - 4
Prerequisite:	None.
Catalog Date:	June 1, 2020

MATHS 499 Experimental Offering in Mathematics Support

Units:	0.5 - 4
Prerequisite:	None.
Catalog Date:	June 1, 2020

Statistics (STAT) Courses

STAT 10 Support for Introduction to Probability and Statistics

Units:	2
Hours:	36 hours LEC
Prerequisite:	None.
Corequisite:	STAT 300
Catalog Date:	June 1, 2020

This course provides intensive instruction and practice in the core mathematical skills, competencies, and concepts necessary for success in STAT 300, Introduction to Probability and Statistics. You must be enrolled in the corresponding section of STAT 300 while taking this course. Topics and homework assignments are often connected to the students' assignments in STAT 300. The course includes applications of the concepts and skills covered. Students will be expected to use technology for data analysis. Appropriate technology includes at least one of the following: TI-Graphing calculator, StatCrunch, Excel, SPSS or Minitab. See class notes in the e-schedule for more information. This class is graded on a pass/no pass basis and does not meet math competency.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- demonstrate relevant arithmetic and algebraic skills and interpret results in the context of the data or scenario in the context of using statistical formulas and methods.
- compute and explain simple probabilities and use geometric reasoning to find probabilities based on area under a normal curve.
- implement study habits that promote success in statistics, such as the use of reading and metacognitive strategies to improve understanding and performance.

STAT 101 Pre-Statistics

Units:	3
Hours:	54 hours LEC
Prerequisite:	MATH 100 with a grade of "C" or better, or placement through the assessment process.
Catalog Date:	June 1, 2020

This course will satisfy the prerequisite to STAT 300. Topics include ratios, rates, and proportional reasoning; arithmetic with fractions, decimals and percents; evaluating expressions, solving equations, and analyzing formulas to understand statistical measures; use of linear and exponential functions to model bivariate data; graphical and numerical descriptive statistics for quantitative and categorical data. Note: This course is not intended for students who plan to take courses in science, computer information science, engineering, mathematics, physics, chemistry, or business related majors. A scientific or graphing calculator with 2-variable statistics capabilities is required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- simplify linear expressions, solve linear equations and inequalities, and evaluate statistical formulas using the order of operations agreement.
- sketch the graphs of linear and exponential functions, and find equations of linear and exponential functions given two points on the line or curve.

- apply and interpret algebraic and statistical models when solving word problems.

STAT 300 Introduction to Probability and Statistics

Units:	4
Hours:	72 hours LEC
Prerequisite:	MATH 120 or 125 with a grade of "C" or better, or placement through the assessment process.
Transferable:	CSU; UC (UC credit limitation: 330 and STAT 300 combined: maximum credit, one course)
General Education:	AA/AS Area II(b); CSU Area B4; IGETC Area 2
C-ID:	C-ID MATH 110
Catalog Date:	June 1, 2020

This course is an introduction to probability and statistics. Topics include: elementary principles and applications of descriptive statistics, elementary probability principles, probability distributions, estimation of parameters, hypothesis testing, linear regression and correlation, and ANOVA. Statistical analysis using a computer statistics package or graphing calculator will be required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- interpret data displayed in tables and graphically.
- apply concepts of sample space and probability.
- calculate measures of central tendency and variation for a given data set.
- identify the standard methods of obtaining data and identify advantages and disadvantages of each.
- calculate the mean and variance of a discrete distribution.
- calculate probabilities using normal and t-distributions.
- distinguish the difference between sample and population distributions and analyse the role played by the Central Limit Theorem.
- construct and interpret confidence intervals.
- determine and interpret levels of statistical significance including p-values.
- interpret the output of a technology-based statistical analysis.
- identify the basic concept of hypothesis testing including Type I and II errors.
- formulate hypothesis tests involving samples from one and two populations.
- select the appropriate technique for testing a hypothesis and interpret the result.
- use regression lines and ANOVA for estimation and inference, and interpret the associated statistics.
- Use appropriate statistical techniques to analyze and interpret applications based on data from at least four of the following disciplines: business, economics, social science, psychology, political science, administration of justice, life science, physical science, health science, information technology, and education.

STAT 495 Independent Studies in Statistics

Units:	1 - 3
Hours:	54 - 162 hours LAB
Prerequisite:	None.
Transferable:	CSU
Catalog Date:	June 1, 2020

STAT 499 Experimental Offering in Statistics

Units:	0.5 - 4
Prerequisite:	None.
Transferable:	CSU
Catalog Date:	June 1, 2020

(See catalog p. 21)

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