Glendale College

Course Outline of Record Report

04/01/2025

STATC1000 : Introduction to Statistics

General Information

Author:	• Nancy Traynor • Palermo, Suzanne
Attachments:	MATH136_STATC1000_Part2_Additions.docx MATH136_STATC1000_Template.pdf
Course Code (CB01) :	STATC1000
Course Title (CB02) :	Introduction to Statistics
Department:	MATH
Proposal Start:	Fall 2025
TOP Code (CB03) :	(1701.00) Mathematics, General
CIP Code:	(27.0101) Mathematics, General.
SAM Code (CB09) :	Non-Occupational
Distance Education Approved:	Yes
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000157746
Curriculum Committee Approval Date:	11/27/2024
Board of Trustees Approval Date:	01/21/2025
Last Cyclical Review Date:	04/01/2020
Course Description and Course Note:	This course is an introduction to statistical thinking and processes, including methods and concepts for discovery and decision-making using data. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi-squared, and t-tests; and application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. Students apply methods and processes to applications using data from a broad range of disciplines. Note: This course was previously MATH 136.
Justification:	Content Change
Academic Career:	• Credit
Mode of Delivery:	No value
Author:	No value
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	• Mathematics
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

☐ Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

- Grade with Pass / No-Pass Option

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

GE Status (CSU) B4, (UC) 2

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

IGETC Area	Area	Status	Approval Date	Comparable Course
2-Math	Mathematical Concepts and Quantitative Reasoning	Approved	08/22/1994	No Comparable Course defined.

CSU GE-Breadth Area	Area	Status	Approval Date	Comparable Course
B4-Mathematics/Quantitative Reasoning	Mathematics/Quantitative Reasoning	Approved	08/24/1993	No Comparable Course defined.

C-ID	Area	Status	Approval Date	Comparable Course
MATH	Mathematics	Approved	08/31/2015	MATH 110 - Introduction to Statistics

Units and Hours

Summary

Minimum Credit Units (CB07)	4
Maximum Credit Units (CB06)	4
Total Course In-Class (Contact) Hours	72
Total Course Out-of-Class Hours	144
Total Student Learning Hours	216

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	4	8
Laboratory Hours	0	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	54
Course In-Class (Contact) Hours	
Lecture	72
Laboratory	0
Studio	0
Total	72
Course Out-of-Class Hours	
Lecture	144
Laboratory	0
Studio	0
Total	144

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Prerequisites, Corequisites, Recommended Corequisites, and Recommended Preparation

Prerequisite

Placement as determined by the college's multiple measures assessment process or completion of a course taught at or above the level of intermediate algebra.

OR

Prerequisite

MATH90 - Intermediate Algebra for BSTEM

Objectives

- Solve absolute value equations and inequalities.
- Solve linear equations and compound inequalities.
- Perform operations with polynomials.
- Simplify complex fractions.
- Perform operations with radical expressions.
- Simplify expressions with rational exponents.
- Solve rational equations.
- Solve equations with radicals.
- Find the equation of a line parallel or perpendicular to a given line.
- Solve a system of linear equations using elimination substitution.
- Solve systems of linear inequalities.
- Find the composition of two functions.
- Solve applied problems.
- Solve quadratic equations with real and complex solutions.
- Find the inverse of a function.
- Use the properties of logarithms to simplify and expand expressions.
- Solve logarithmic and exponential equations.
- Graph parabolas and circles centered at any point.
- Graph functions (linear, quadratic, exponential, logarithmic).

AND

Advisory

ENGLC1000 - Academic Reading and Writing (in-development)

Objectives

- Analyze stylistic choices in their own writing and the writing of others and the context in which readings were produced.
- Integrate the ideas of others through paraphrasing, summarizing, and quoting without plagiarism.
- Find, evaluate, analyze, and interpret primary and secondary sources, incorporating them into written essays using appropriate documentation format.

Entry Standards

Entry Standards	Description
No value	No value

Course Limitations

Cross Listed or Equivalent Course	Description
MATH 136+ Statistics with Support	(previous equivalent course)
MATH 136B Statistics B	(previous equivalent course)
MATH 136H Honors Statistics	(previous equivalent course)

MATH 136	(previous course)
STAT C1000E - Introduction to Statistics	No Value
STAT C1000H - Introduction to Statics - Honors	No Value

Requisite Validation

Upload Statistical Validation and/or other documents (if necessary)

No Value

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Methods of Instruction	Discussion
Methods of Instruction	Demonstrations

Out of Class Assignments

- Homework (e.g. problems sets related to course content)
- Projects involving analysis of real-world data using statistical software (e.g. collect data and create a written report including graphical displays and numeric summaries.)

Methods of Evaluation	Rationale
Exam/Quiz/Test	Three or more examinations
Exam/Quiz/Test	A comprehensive final examination
Other	Examples of potential methods of evaluation used to observe or measure students' achievement of course outcomes and objectives could include but are not limited to quizzes, exams, laboratory work, field journals, projects, research demonstrations, etc. Methods of evaluation are at the discretion of local faculty.

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Sullivan, Michael	Statistics: Informed Decision Using Data	Pearson	2020	9780136872740
Illowsky, B., Dean, S.	Introductory Statistics	OpenStax	2023	978-1-711472-58-4
Çetinkaya-Runde, M., Hardin, J.	Introduction to Modern Statistics	OpenIntro	2024	978-1943450275
Peck, R., Case, C.	Statistics: Learning From Data	Cengage	2024	978-0357758410
Gould, R., Wong, R., Ryan, C.	Introductory Statistics: Exploring the World Through Data	Pearson	2025	

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

Description	Introductory Statistics: Analyzing Data with Purpose
Author	The Dana Center Mathematics Pathways, Charles A. Dana Center, University of Texas at Austin
Citation	https://www.utdanacenter.org/products/introductory-statistics
Online Resource(s)	No value

Learning Outcomes

Course Objectives

Part 1: Objectives

Assess how data were collected and recognize how data collection affects what conclusions can be drawn from the data.

Identify appropriate graphs and summary statistics for variables and relationships between them and correctly interpret information from graphs and summary statistics.

Describe and apply probability concepts and distributions.

Demonstrate an understanding of, and ability to use, basic ideas of statistical processes, including hypothesis tests and confidence interval estimation.

Identify appropriate statistical techniques and use technology-based statistical analysis to describe, interpret, and communicate results.

Evaluate ethical issues in statistical practice.

Part 2: Objectives

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.advantages and disadvantages of each

Calculate probabilities using normal and t-distributions.

Distinguish the difference between sample and population distributions and analyze the role played by the Central Limit Theorem.

Construct and interpret confidence intervals.

Determine and interpret levels of statistical significance including p-values.

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.

SLOs

Analyze and describe studies, data sets, and probability models. Expected Outcome Performance: 70.0

ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.
	Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.
SOC Sociology AA-T Degree	Critically analyze and evaluate social phenomena, which involve social institutions and processes, within various contexts from the local to the global
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ECON Economics AA-T Degree	Description critically analyze and evaluate economic decision-making and economic policies
SOC Social Work and Human Services AA-T Degree	Explain the qualities and characteristics of effective human service professionals that view clients as whole persons in the context of their family, culture, and community using a biopsychosocial perspective
ILOs General Education	apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues
ECON Economics - AA-T	critically analyze and evaluate economic decision-making and economic policies.
BIOL Biology AS-T	well-qualified as transfer students to a four-year university biology program.

Apply confidence intervals and hypothesis testing to form conclusions about realistic data. Expected Outcome Performance: 70.0

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Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

Lecture Content

<u>Part 1: Required Topics</u>

Introduction to statistical thinking and processes

Technology-based statistical analysis

Applications using data from four or more of the following disciplines: administration of justice, business, economics, education, health science, information technology, life science, physical science, political science, psychology, and social science

Units (subjects/cases) and variables in a data set, including multivariable data sets

Categorical and quantitative variables

Sampling methods, concerns, and limitations, including bias and random variability

Observational studies and experiments

Data summaries, visualizations, and descriptive statistics

Probability concepts

Probability distributions (e.g., binomial, normal)

Sampling distributions and the Central Limit Theorem

Estimation and confidence intervals

Hypothesis testing, including t-tests for one and two populations, Chi-squared test(s), and ANOVA; and interpretations of results

Regression, including correlation and linear regression equations

<u>Part 2: Additional Topics</u>

Descriptive Statistics

- Measurement
- Measures of central tendency
- Variation

Sample Spaces and Probability

Random Variables and Expected Values

Producing Data
- Design of sampling procedures
- Design of experiments
- Strengths and limitations of experimental designs

Computing Probabilities Using the Addition and Multiplication Rules

Type I and Type II Errors

Additional Information

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Is it possible this course will have a material fee?

No Value

I have contacted my library liaison (https://campusguides.glendale.edu/faculty/liaisons):

No Value

What term(s) will this course be offered?

No Value

Will any additional resources be needed for this course? (Click all that apply)

No Value

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

No Value