

Glendale College  
Course Outline of Record Report  
04/01/2025

## STATC1000E : Introduction to Statistics

### General Information

|   |  |
|---|--|
| Author:                                     | <ul style="list-style-type: none"><li>Nancy Traynor</li><li>Palermo, Suzanne</li></ul>   |
| Attachments:                                | MATH136+_STATC1000E_Part2_Additions.docx<br>MATH136+_STATC1000E_Template.pdf   |
| Course Code (CB01) :                        | STATC1000E   |
| 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) :              | CCC000619135   |
| Curriculum Committee Approval Date:         | 11/27/2024   |
| Board of Trustees Approval Date:            | 01/21/2025   |
| Last Cyclical Review Date:                  | 06/01/2019   |
| 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. This course has embedded support. Note: This course was previously MATH 136+. |
| Justification:                              | Content Change   |
| Academic Career:                            | <ul style="list-style-type: none"><li>Credit</li></ul>   |
| Mode of Delivery:                           | No value   |
| Author:                                     | No value   |
| Course Family:                              | No value   |

### Academic Senate Discipline

|                       |   |
|-----------------------|---|
| Primary Discipline:   | <ul style="list-style-type: none"><li>Mathematics</li></ul> |
| 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

2-Math

### Area

Mathematical Concepts  
and Quantitative  
Reasoning

### Status

Approved

### Approval Date

08/31/2020

### Comparable Course

No Comparable Course defined.

### CSU GE-Breadth Area

B4-Mathematics/Quantitative  
Reasoning

### Area

Mathematics/Quantitative  
Reasoning

### Status

Approved

### Approval Date

08/31/2020

### Comparable Course

No Comparable Course defined.

### C-ID

MATH

### Area

Mathematics

### Status

Approved

### Approval Date

08/31/2020

### Comparable Course

MATH 110 - Introduction to Statistics

## Units and Hours

### Summary

**Minimum Credit Units (CB07)**

5

**Maximum Credit Units (CB06)**

5

**Total Course In-Class (Contact)  
Hours**

126

**Total Course Out-of-Class  
Hours**

144

**Total Student Learning Hours**

270

### 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.

 Variable Credit Course**Funding Agency Category (CB23)**

Not Applicable.

 Cooperative Work Experience Education Status (CB10)
**Weekly Student Hours**

|                  | In Class | Out of Class |
|------------------|----------|--------------|
| Lecture Hours    | 4        | 8            |
| Laboratory Hours | 3        | 0            |
| Studio Hours     | 0        | 0            |

**Course Student Hours**

|  |     |
|--|-----|
| <b>Course Duration (Weeks)</b>         | 18  |
| <b>Hours per unit divisor</b>          | 0   |
| <b>Course In-Class (Contact) Hours</b> |     |
| Lecture                                | 72  |
| Laboratory                             | 54  |
| Studio                                 | 0   |
| <b>Total</b>                           | 126 |
| <b>Course Out-of-Class Hours</b>       |     |
| Lecture                                | 144 |
| Laboratory                             | 0   |
| Studio                                 | 0   |
| <b>Total</b>                           | 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 linear equations and compound inequalities.
- Perform operations with polynomials.
- Find the equation of a line parallel or perpendicular to a given line.
- Solve a system of linear equations using elimination substitution.
- Solve applied problems.
- 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                               | (previous equivalent course) |
| MATH 136B Statistics B                            | (previous equivalent course) |
| MATH 136H Honors Statistics                       | (previous equivalent course) |
| MATH 136+ Statistics with Support                 | (previous course)            |
| STAT C1000 - Introduction to Statistics           | No Value                     |
| STAT C1000H - Introduction to Statistics - 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 | Laboratory |
|------------------------|------------|

|                        |            |
|------------------------|------------|
| Methods of Instruction | Discussion |
|------------------------|------------|

|                        |            |
|------------------------|------------|
| Methods of Instruction | Multimedia |
|------------------------|------------|

|                        |                        |
|------------------------|------------------------|
| Methods of Instruction | Collaborative Learning |
|------------------------|------------------------|

|                        |               |
|------------------------|---------------|
| Methods of Instruction | Presentations |
|------------------------|---------------|

### 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

Exam/Quiz/Test

Exam/Quiz/Test

Other

### Rationale

Three or more examinations

A comprehensive final examination

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               | Integrated Review Materials to accompany Statistics : Informed Decisions using Data | Pearson   | 2018 | 9780134606675     |
| Sullivan, Michael               | 1. Statistics: Informed Decisions using Data  | Pearson   | 2020 | 9780136872740     |
| Illowsky, Barbara Dean, Susan   | 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        | Support Course for Elementary Statistics  |
| Author             | Larry Green   |
| Citation           | <a href="https://stats.libretexts.org/Courses/Montgomery_College/Support_Course_for_Elementary_Statistics">https://stats.libretexts.org/Courses/Montgomery_College/Support_Course_for_Elementary_Statistics</a> |
| Online Resource(s) | No value  |

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

## 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.

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.

## 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.

Communicate clearly, ethically, and creatively; listen actively and engage respectfully with others; consider situational, cultural, and personal contexts within or across multiple modes of communication.

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.

*ILOs*  
General Education apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

Apply confidence intervals and hypothesis testing to form conclusions about realistic data.

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.

*ILOs*  
General Education apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

## 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

##### Part 1: Required Topics

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

##### Part 2: Additional Topics

###### Descriptive Statistics

- Measurement
- Measures of central tendency
- Variation

###### 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

### Laboratory/Studio Content

#### Laboratory/Studio Content

##### Part 2: Additional Laboratory Topics

Data Analysis Using Descriptive Statistics

**Graphs of Two Variables**

- Linear equations and inequalities with one and two variables, including absolute values and compound inequalities
- The rectangular coordinate system
- The slope of a line
- Equations of lines

**Basic Set Theory**

- The real number system
- Subsets
- Complements
- Unions and intersections
- Counting techniques, permutations, and combinations
- Summation notation

**Math Study Skills Content**

- Time management
- Motivation for college success in mathematics
- Critical thinking skills
- Test taking techniques
- Goal setting
- Transferring / career exploration resources
- College support resources
- Math community resources

**Additional Information****Repeatability**

Not Repeatable

**Justification (if repeatable was chosen above)**

No Value

**Is it possible this course will have a material fee?**

No

**I have contacted my library liaison (<https://campusguides.glendale.edu/faculty/liasons>):**

No

**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