# GAVILAN ❧ COLLEGE

5055 Santa Teresa Blvd
Gilroy, CA 95023

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## Course Outline

**COURSE:** MATH 215          DIVISION: 10          ALSO LISTED AS:

TERM EFFECTIVE: Spring 2022                    CURRICULUM APPROVAL DATE: 12/8/2020

SHORT TITLE: STATISTICS SUPPORT

LONG TITLE: Statistics Support

| Units | Number of Weeks | Type | Contact Hours/Week | Total Contact Hours |
|-------|-----------------|------|--------------------|--------------------|
| 2 | 18 | Lecture: | 2 | 36 |
| | | Lab: | 0 | 0 |
| | | Other: | 0 | 0 |
| | | Total: | 2 | 36 |

**COURSE DESCRIPTION:**

A review of the core prerequisite skills needed for Math 5: Introduction to Statistics. Intended for students who are concurrently enrolled in Math 5: Introduction to Statistics at Gavilan College. The course will focus on core concepts from Algebra and Statistics that are needed to support success in transfer-level Statistics. Topics include operations on real numbers including order of operations, fractions, decimals, percentages, exponents and logarithms, correct selection and implementation of statistical formulas, review of the Cartesian coordinate system and written interpretation of slope and intercept of linear equations, exploratory analysis of categorical, quantitative, single variable and bivariate data, discrete and normal probability, support for graphing calculator usage and for statistical software. This course is appropriate for students confident in beginning algebra who need support for intermediate algebra skills essential for statistics. This course is Pass/No Pass only. Non-degree applicable. Prerequisite: Appropriate placement. Corequisite: Math 5: Introduction to Statistics.

PREREQUISITES:

COREQUISITES:
        MATH 5

CREDIT STATUS: S - Support course - Credit

GRADING MODES
        P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

        02 - Lecture and/or discussion

        05 - Hybrid

        71 - Dist. Ed Internet Simultaneous

        72 - Dist. Ed Internet Delayed

**STUDENT LEARNING OUTCOMES:**

1. Demonstrate proficiency in formulating questions which can be addressed with data. Organize, display, and analyze relevant data to address these questions and communicate results.

Measure of assessment: Homework, Quiz, Exam.

Year assessed, or planned year of assessment: 2019

Semester: Spring

2. Demonstrate proficiency with calculations using statistical formulas and notation commonly encountered in a Math 5 course.

Measure of assessment: Homework, Quiz, Exam.

Year assessed, or planned year of assessment: 2019

3. Demonstrate proficiency in transfer-level mathematics study skills, including reading and notetaking using a statistics textbook, writing clear statistical interpretations, utilizing time management for completion of labs and assignments, and preparing for written examinations.

Measure of assessment: Homework, Quiz, Exam.

**CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS**

Curriculum Approval Date: 12/8/2020

DE MODIFICATION ONLY

In parallel with topical coverage in the Math 5: Introduction to Statistics course:

Topic: Time management, Reading, Notetaking

Hours: 3

Explicit engagement in learning to use the written explanations and examples in the statistics textbook and publisher?s online support resources to support mastery of study skills necessary for success in transfer-level statistics.

Performance Objectives: Students will assemble notebooks containing reading notes (based upon the Reading Apprenticeship model or similar) and flashcard decks of vocabulary and solved problems suitable for test preparation. Notebooks will include weekly schedules specifically earmarking 6-10 hours per week for study of statistics outside of class.

Out-of-Class Assignments: Students will complete homework assignments which require them to explain, apply and explore concepts taught in class.

Topic: Test preparation and managing test anxiety.

Hours: 2

Students will review material likely to be included on exams. Students will engage in self-assessment of current level of computational and procedural accuracy, and develop a realistic plan to meet the level of mastery required for exam by identifying gaps in homework completion or conceptual understanding. Students will engage in a short exercise designed to illuminate and reduce test anxiety.

Performance Objectives: Students will use self-generated flashcard problem decks to identify areas of strength and weakness and will allocate sufficient time for review and preparation for exam.

Out-of-Class Assignments: Students will complete review problems which require them to apply and explore concepts taught in class.

Topic:  Operations on Real Numbers

Hours:  5

Performance Objective:  Students will simplify algebraic expressions involving exponents, fractions, square roots, and positive and negative integers.

Out-of-Class Assignments: Students will complete homework assignments which require them to  explain, apply and extend concepts taught in class.

Topic:  Decimals and Percentages

Hours:  3

Performance Objective:  Students will solve application problems involving percentages and will convert decimals to percentages and percentages to decimals.

Out-of-Class Assignments: Students will complete homework assignments which require them to  explain, apply and extend concepts taught in class.

Topic:  Cartesian Coordinate System, Slope, Intercept

Hours: 3

Review of the Cartesian coordinate system and graphing linear equations.

Performance Objective:  Given a linear equation in slope-intercept form or standard form, students will be able to identify the slope and the intercept and graph the equation using the slope and intercept.  Students will write a clear interpretation of the slope and the intercept, specifying rate of change of y with respect to x.

Out-of-Class Assignments: Students will complete homework assignments which require them to  explain, apply and extend concepts taught in class.

Topic:  Application Problems involving Linear Relationships

Hours: 4

Performance Objective:  Given an application problem with bivariate data, students will determine whether a linear model is appropriate and if so, will use two points or point-slope to write the equation of the line. Students will write one or two sentences interpreting slope and intercept, grounded in the context of the data.

Out-of-Class Assignments: Students will complete homework assignments which require them to  explain, apply and extend concepts taught in class.

Topic:  Support for Technology: Statistical Software

Hours: 3

Guided practice in use of statistical software from parent course:  Statdisk, Minitab, Excel, or similar.

Performance Objective:  Students will engage in correct data management, including entering data in a spreadsheet, sorting without loss of integrity, and saving.  Students will select appropriate statistical menu options for accurate data analysis.

Out-of-Class Assignments: Students will complete homework assignments which require them to  explain, apply and extend concepts taught in class.

Topic:  Support for Technology: Graphing Calculators

Hours: 3

Guided practice in graphing calculator usage.

Performance Objective:  Students will use graphing calculator functions to compute and graph a linear regression, graph a scatterplot and compute permutations, combinations, and standard deviation.

Out-of-Class Assignments: Students will complete homework assignments which require them to  explain, apply and extend concepts taught in class.

Topic:  Selection and Implementation of Statistical Formulas

Hours: 5

Review of statistical notation including symbols for summation, sample statistics vs population parameters, z-scores, and probability.  Direct instruction in correct selection and implementation of formulas for means, standard deviations and variances for raw data, frequency distributions and discrete probability distributions including binomial probability.

Performance Objective:  Given a formula card and a scientific calculator, students will be able to accurately compute values for sample statistics and population parameters including means, standard deviations, and variances, probability values using factorials, permutations and combinations,and z-scores.

Out-of-Class Assignments: Students will complete homework assignments which require them to explain, apply and extend concepts taught in class.

Topic: Normal Probability

Hours: 3

Instruction in use of normal probability tables to determine probability for standard normal and non-standard normal data values after correct computation of appropriate z-scores. Use conceptional understanding of Central Limit Theorem and normal probability tables to determine probabilities. Given a percentile, use normal curves and z-scores to determine the data value associated with the percentile.

Performance Objective: Students will correctly determine probabilities and percentile values using normal probability tables.

Out-of-Class Assignments: Students will complete homework assignments which require them to explain, apply and extend concepts taught in class.

Final Exam

Hours: 2

## METHODS OF INSTRUCTION:

Lecture, Group work, Discussion

## OUT OF CLASS ASSIGNMENTS:

Required Outside Hours: 72

Assignment Description:

1. Analyze and study pertinent text material, solved examples and lecture notes.

2. Apply principles and skills covered in class by solving regularly-assigned homework problems.

3. Regularly synthesize course materials in preparation for exams.

4. Projects to apply concepts learned in class.

## METHODS OF EVALUATION:

Other methods of evaluation

Percent of total grade: 100.00 %

Demonstrated performance in the Math 5 corequisite course. A Pass will be assigned for a grade of 'C' or above in the Math 5 corequisite course. A grade of NP will be assigned for a grade below 'C' in the Math 5 corequisite course.

## REPRESENTATIVE TEXTBOOKS:

Required Representative Textbooks

Triola. Essestials of Statistics. Pearson,2014.

ISBN: ISBN-13: 978-0321924599 ISBN-10: 0321924592

Reading Level of Text, Grade: 12 Verified by: Jennifer Nari

**ARTICULATION and CERTIFICATE INFORMATION**

       Associate Degree:

       CSU GE:

       IGETC:

       CSU TRANSFER:

              Not Transferable

       UC TRANSFER:

              Not Transferable

**SUPPLEMENTAL DATA:**

Basic Skills: B

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 2 Stand-alone

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level: A

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: E

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000595593

Sports/Physical Education Course: N

Taxonomy of Program: 170100