

# MATH M915: BRIDGE TO STATISTICS (MATH M15)

**Originator**

pabramoff

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**College**

Moorpark College

**Attach Support Documentation (as needed)**

MATH M915\_state approval letter\_CCC000612677.pdf

**Discipline (CB01A)**

MATH - Mathematics

**Course Number (CB01B)**

M915

**Course Title (CB02)**

Bridge to Statistics (MATH M15)

**Banner/Short Title**

Bridge to Stat (Math M15)

**Credit Type**

Noncredit

**Start Term**

Fall 2023

**Catalog Course Description**

Reviews prerequisite material for successful completion of MATH M15. Reviews numbers and the number line, operations on numbers, sets and set notations, and equations and inequalities. Provides practice on graphing points and lines in two dimensions, reading tables and graphs, and approximating areas.

**Taxonomy of Programs (TOP) Code (CB03)**

1702.00 - Mathematics Skills

**Course Credit Status (CB04)**

N (Noncredit)

**Course Transfer Status (CB05) (select one only)**

C (Not transferable)

**Course Basic Skills Status (CB08)**

B - The Course is a Basic Skills Course

**SAM Priority Code (CB09)**

E - Non-Occupational

**Course Cooperative Work Experience Education Status (CB10)**

N - Is Not Part of a Cooperative Work Experience Education Program

**Course Classification Status (CB11)**

K - Other Noncredit Enhanced Funding

**Educational Assistance Class Instruction (Approved Special Class) (CB13)**

N - The Course is Not an Approved Special Class

**Course Prior to Transfer Level (CB21)**

Y - Not Applicable

**Course Noncredit Category (CB22)**

C - Elementary and Secondary Basic Skills

**Funding Agency Category (CB23)**

Y - Not Applicable (Funding Not Used)

**Course Program Status (CB24)**

2 - Not Program Applicable

**General Education Status (CB25)**

Y - Not Applicable

**Support Course Status (CB26)**

N - Course is not a support course

**Special Characteristics Code Descriptor**

LA - Learning Assistance (a form of supplemental instruction)

**Field trips**

Will not be required

**Grading method**

(P) Pass/No Pass Grading

**Does this course require an instructional materials fee?**

No

**Repeatable for Credit**

Yes

**Number of times a student may enroll in this course**

Unlimited

**Units and Hours**

**Carnegie Unit Override**

Yes

**Total in-Class (full semester or term)**

**Total Minimum Contact/In-Class Hours (for full semester or term; not weekly)**

8

**Total Maximum Contact/In-Class Hours (for full semester or term; not weekly)**

8

**Total Student Learning**

**Total Student Learning**

**Total Minimum Student Learning Hours**

8

**Total Maximum Student Learning Hours**

8

**Student Learning Outcomes (CSLOs)**

Upon satisfactory completion of the course, students will be able to:

- |   |   |
|---|---|
| 1 | gain an understanding of mathematical topics in preparation for a college level statistics course by studying specially selected intermediate algebra topics through participating in the review session with the provided materials. |
|---|---|

**Course Objectives**

Upon satisfactory completion of the course, students will be able to:

- |    |  |
|----|--|
| 1  | plot points and inequalities on a number line.               |
| 2  | convert between fractions, decimals and percents.            |
| 3  | perform signed number arithmetic and use summation notation. |
| 4  | perform order of operations, including powers and roots.     |
| 5  | comprehend Venn Diagrams and set notation.                   |
| 6  | evaluate algebraic expressions and solve linear equations.   |
| 7  | plot ordered pairs on the rectangular coordinate plane.      |
| 8  | find the slope of a line and graph the line in the plane.    |
| 9  | find the vertical distance between a point and a line.       |
| 10 | approximate the area under a curve or histogram.             |

**Course Content****Lecture/Course Content****20% A. Numbers and the Number Line**

1. Plot points, intervals and inequalities on the number line
2. Determine the distance between two points on the number line
3. Convert between fractions, decimals and percents
4. Round decimals to specified number of places

**20% B. Operations on Numbers**

1. Perform signed number arithmetic
2. Calculate powers and roots using technology
3. Simplify numerical expressions by proper order of operations
4. Evaluate sums using summation notation

**15% C. Sets and Set Notation**

1. Represent sets using Venn Diagrams and proper set notation
2. Determine the complement of a set
3. Determine the union and the intersection of two sets

**10% D. Expressions and Linear Equations**

1. Simplify algebraic expressions
2. Solve linear equations in one variable

**25% E. Graphing Points and Lines in Two Dimensions**

1. Plot an ordered pair  $(x,y)$  in a rectangular coordinate system
2. Understand slope as the change in  $y$  in relation to the change in  $x$
3. Given the equation of a line, draw the graph of a line
4. Use the equation of a line to find the  $y$ -value associated with a given  $x$ -value
5. Find the vertical distance between a point and a line

**10% F. Reading Data, Tables and Graphs, and Approximating Area**

1. Make observations from a table or graphs
2. Approximate the area of a region from a graph or histogram

**Methods of Evaluation**

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

- Written expression
- Problem solving exercises
- Skills demonstrations

**Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):**

Other (specify)

#### **Other**

Since this is a non-graded module, students receive credit for attendance to the full hours of the course.

### **Instructional Methodology**

**Specify the methods of instruction that may be employed in this course**

Class activities  
 Class discussions  
 Demonstrations  
 Distance Education  
 Instructor-guided interpretation and analysis  
 Instructor-guided use of technology  
 Lecture  
 Problem-solving examples  
 Other (specify)

**Specify other method of instruction**

All instructors will use best practices to provide an inclusive learning environment that respects all forms of racial, ethnic, age, and gender diversity, and provides for the individual needs of students of all learning styles.

**Describe specific examples of the methods the instructor will use:**

- Instruct students to draw Venn Diagrams on board and discuss their results.
- Engage students in group discussion in order to make basic observations about a graph or table.
- Show students how to compute the slope and y-intercept of a line in order to graph it in the coordinate plane.

### **Representative Course Assignments**

#### **Writing Assignments**

1. Draw graphs of lines within a scatter plot of data points, in order to visually represent residuals.
2. Write an interpretation of the solution set of an inequality which may have a particular meaning in physical or monetary units.

#### **Critical Thinking Assignments**

1. Interpret a scenario involving data and choose a correct formula for its computation.
2. Read and interpret a Venn Diagram to determine the intersection or union of two sets and the complement of a set.

#### **Reading Assignments**

1. Read the definition of an inequality and its corresponding representation on a number line.
2. Complete reading assignments about types of histograms, including representations of data that are centrally distributed or skewed.

#### **Skills Demonstrations**

1. Represent the proper sigma notation of a sum of numbers and evaluating its exact sum.
2. Graph lines and other relations on a coordinate plane, labeling all aspects of that relation, including intercepts, slope and key points.
3. Simplify a numerical expression, by proper order of operations, giving answer in the form of a reduced fraction.

#### **Problem-Solving and Other Assignments (if applicable)**

1. Problem-solving exercises to practice converting between fractions, decimals and percents.
2. Problem-solving exercises to find the slope of a line and graph the line in the plane.

### **Outside Assignments**

#### **Representative Outside Assignments**

None

## Articulation

### Equivalent Courses at other CCCs

College	Course ID	Course Title	Units
West Valley College	NCMA 010C	Mathematical Support for Elementary Statistics	
West Hills Coalinga	NC 202	Introduction to Statistics Support	
LA Mission College	ACAD PR 027CE	Statistics Skills and Preparation I	

## Textbooks and Lab Manuals

### Resource Type

Textbook

### Classic Textbook

Yes

### Description

Martin-Gay, Elayn. *Intermediate Algebra*. 8th ed., Pearson, 2023.

### Resource Type

Textbook

### Classic Textbook

Yes

### Description

Lial, Margaret, John Hornsby, Terry McGinnis. *Intermediate Algebra*. 13th ed., Pearson, 2020.

### Resource Type

Textbook

### Classic Textbook

Yes

### Description

Lehmann, Jay. *A Pathway to Introductory Statistics*. 2nd ed., Pearson, 2021.

### Resource Type

Textbook

### Description

Maracek, Lynn. *Intermediate Algebra*. E-book, Open Stax, 2022. <https://openstax.org/details/books/intermediate-algebra>. Accessed 19 Oct 2022.

## Library Resources

### Assignments requiring library resources

Textbooks on reserve.

Calculators on reserve.

Researching data for use in applying real life data to statistical analysis.

### Sufficient Library Resources exist

Yes

**Example of Assignments Requiring Library Resources**

Use library resources to research data, such as data about human populations and census data, in order to analyze examples of real life data in class.

**Distance Education Addendum****Definitions****Distance Education Modalities**

Hybrid (1%–50% online)  
Hybrid (51%–99% online)  
100% online

**Faculty Certifications**

**Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.**

Yes

**Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.**

Yes

**Regular Effective/Substantive Contact****Hybrid (1%–50% online) Modality:**

<b>Method of Instruction</b>	<b>Document typical activities or assignments for each method of instruction</b>
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Face to Face (by student request; cannot be required)	Students requesting to speak to instructor in person for personal help on material, grade information, or discussion of policies and procedures.
Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.
Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.

**Hybrid (51%–99% online) Modality:**

<b>Method of Instruction</b>	<b>Document typical activities or assignments for each method of instruction</b>
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Face to Face (by student request; cannot be required)	Students requesting to speak to instructor in person for personal help on material, grade information, or discussion of policies and procedures.

Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.
Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.
<b>100% online Modality:</b>	
<b>Method of Instruction</b>	<b>Document typical activities or assignments for each method of instruction</b>
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.
Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.

## Examinations

### Hybrid (1%–50% online) Modality

On campus  
Online

### Hybrid (51%–99% online) Modality

On campus  
Online

## Primary Minimum Qualification

MATHEMATICS

## Review and Approval Dates

### Department Chair

10/12/2022

### Dean

10/17/2022

### Technical Review

10/20/2022

### Curriculum Committee

11/01/2022

### DTRW-I

MM/DD/YYYY

### Curriculum Committee

MM/DD/YYYY

### Board

MM/DD/YYYY

**CCCCO**

MM/DD/YYYY

**Control Number**

CCC000612677

**DOE/accreditation approval date**

MM/DD/YYYY