Moberly Area Community College
Common Syllabus

MTH215 Introduction to Probability and Statistics
Current Term

Instructor:
Office number:
Office hours:
Response Time: I typically respond to student emails within 24 hours, Monday through Friday.
Contact information:
Classroom number:
Section number(s):
Class days and time:

Catalog Description: MTH215 Introduction to Probability and Statistics (3-0-3)
This course is designed primarily for students seeking a degree in business. Probability theory, random variables, expectations, continuous and discrete probability distributions, descriptive statistics, sampling distributions, estimation, and hypothesis testing are covered. (IN)

Prerequisite/Corequisite: MTH201 Analytic Geometry & Calculus I

Text(s):
Title: *Statistics for Business and Economics*
Author: McClave, Benson, Sincich
Edition: 7th Edition 1998
Publisher: Prentice Hall

Other Required Materials:
Notebook and Scientific Calculator

Purpose of Course: Introduction to Probability and Statistics is an in depth course which explores both theory and application of statistics and probability.

Course Objectives (CO): Upon successful completion of this course, students will be able to:

1. Recognized and comprehend basic statistical terms.
2. Recognize the role of mathematics as a language for ideas in decision making and scientific research.
3. Recognize the value of statistical literacy for all liberally educated people.
4. Perform and use graphical and numerical summaries of data.
5. Use a calculator to do statistical calculation.
6. Construct a confidence interval for population means and execute various hypothesis tests.
7. Apply standard statistical inference procedures in the areas of linear regression, control charts, binomial distribution, z-statistics, t-statistics, and Chi-square statistics.
8. Recognize when the above procedures are not valid by checking the assumptions before doing

the calculations.

9. Understand the basic principles of a research project using data collection, analysis and interpretation.

Course Content:

1. Organizing Data
2. Averages and Variation
3. Elementary Probability Theory
4. Binomial Probability Distributions
5. Normal Distributions
6. Estimation
7. Hypothesis Testing

Statement to Connect Course with Institutional Student Level Outcomes:
In compliance with MACC's Institutional Student Level Outcomes, the student who successfully completes this course will be able to meet the following institutional learning outcomes:

- **Higher Order Thinking**: Students will demonstrate the ability to distinguish among opinions, facts, and inferences; to identify underlying or implicit assumptions; to make informed judgments; to solve problems by applying evaluative standards; and to reflect upon and refine those problem-solving skills. This outcome involves creative thinking, critical thinking, and quantitative literacy.

Evaluation of Student Learning: Emphasis will be on NCTM math standard for course content, especially estimation, problem-solving, and communication.

Grades will be calculated on a total point system where 60% mastery will be necessary for satisfactory completion of the course. Points may be accumulated through the following: class participation, handouts, quizzes, homework, tests, and a project (if time permits). Total points will range from 800 to 1000 points.

Students will have the option of retaking one test during the semester and the retake grade will replace the original test grade.

Testing Expectations: This is a credit-bearing course. Retakes of tests are not allowed for individual students. Contact the Math Department Coordinator and/or refer to the course pages in the Math Department Canvas Shell for guidelines.

Description of Major Assignment(s)/Project(s): A class project involving designing a statistical experiment may be assigned if time permits.

Schedule of Student Assignments/Activities:
Instructors will identify a Student Assignment/Activities schedule. Instructors have the prerogative to construct the schedule by class periods, weeks, or an overview of topics to be covered.

Collegewide Policies:
All faculty and students need to be aware of collegewide policies and procedures. Statements on Academic Dishonesty, ADA, Attendance, Title IX, and other important collegewide policies can be accessed by clicking on the following: **Collegewide Policies in Student Resources**.