Syllabus: Course Policies and Procedures

Instructor:
Email:
Phone:
Office Hours:

Course Titles: Introduction to Statistics with Integrated Support and Integrated Support for Non-Algebra Pathway
Course Numbers: MATH158S and MATH061
Semester:
Class Meetings:
Classroom:

Course Descriptions and Prerequisites:

- *MATH158S Introduction to Statistics with Integrated Support:* This course provides a basic introduction to statistics. It is recommended for students in business, social science, human resources, allied health, and criminal justice and provides an excellent preparation for any career. Topics include descriptive statistics, probability, probability distributions, the normal distribution, hypothesis testing, estimates and sample sizes, the chi square distribution, correlation, and regression. Corequisite: MATH061 Integrated Support for Non-Algebra Pathway.
- *MATH061 Integrated Support for Non-Algebra Pathway*: This course is designed to be paired with a college-level non-algebra sequence mathematics course to support underprepared students. Students review the skills necessary for success in the associated college-level course in an ongoing as-needed just-in-time fashion. Topics include: numeracy, basic data analysis, proportional reasoning, an introduction to algebraic expressions and algebraic reasoning, and linear functions. Note: credits earned in this course cannot be applied toward graduation. Corequisite: MATH154S Topics in Mathematics with Integrated Support or MATH158S Introduction to Statistics with Integrated Support.

Required Materials:

- For this course we will use the following textbook: Triola, *Elementary Statistics*, 14th edition, Pearson, 18-week MyMathLab Code: 9780136803102.
- A Texas Instruments TI-83/84 graphing calculator is required for these courses and can be rented from the college for a small fee.

Instructional Objectives:

MATH158S Introduction to Statistics with Integrated Support:

COURSE OUTCOMES	OUTCOMES ACTIVITIES
Upon successful completion of this course students should:	To achieve these outcomes students may engage in the following activities:
Understand and be able to use the basic definitions and rules of descriptive statistics in order to apply them later in this course and in the real world.	1. Draw and interpret histograms, circle graphs, and box and-whisker plots. 2. OPTIONAL: Draw and interpret frequency polygons, dot plots and stem-and-leaf plots. 3. Find the mean, median, mode, range, and standard deviation of ungrouped data. 4. Summarize data using frequency tables. 5. Find the mean from a frequency table. 6. OPTIONAL: Find the standard deviation from a frequency table. 7. Find percentiles and quartiles. 8. OPTIONAL: Find Deciles.
Use the rules of basic probability in order to solve related problems.	1. Apply the basic concepts of probability including the addition and multiplication rules. 2. Find conditional probabilities. 3. Find probabilities from contingency tables.
Identify and use the rules for probability distributions in order to solve related problems.	1. Determine if a given set of circumstances satisfies the requirements of a probability distribution. 2. Find the mean, standard deviation, and expected value for a probability distribution. 3. Know when to use the binomial distribution. 4. Find the probability of an event, the mean, and the standard deviation given a binomial distribution. 5. Solve problems involving the normal distribution. a. Find z-scores. b. Find probabilities. c. Find the data value for a given probability. d. Apply the Central Limit Theorem. e. OPTIONAL: Use a normal approximation to the binomial distribution.
Determine how effective sample data is in estimating the value of a population parameter.	1. Calculate the confidence interval for the mean with large and small samples. 2. Calculate the confidence interval for proportions.

	3. OPTIONAL: Calculate the confidence interval for standard deviation or variance. 4. Calculate sample size for means and proportions.
Use the standard procedures involved in hypothesis testing in order to determine if a claim is supported by the sample data.	1. Apply tests involving the mean with large and small samples. 2. Apply tests involving a proportion. 3. Use p-values to determine if the null hypothesis should be rejected.
Solve problems involving linear correlation and regression in order to determine whether there is a relationship between two sets of data and, if so, to identify what the relationship is.	1. Calculate a linear correlation coefficient. 2. Find the least square regression line and use it to predict values.
Apply the χ^2-distribution in order to solve related problems.	The course must include at least one of the following: 1. Determine Goodness-of-Fit. 2. Determine independence of events from contingency tables. 3. Calculate the confidence intervals for standard deviation or variance. 4. Apply tests involving a standard deviation or variance.
To strengthen Core Competencies** in order to increase success in this and other courses and in the workplace.	Referenced above

MATH061 Integrated Support for Non-Algebra Pathway:

COURSE OUTCOMES	OUTCOMES ACTIVITIE
At the end of this course, students will be able to	
Successfully complete MATH154S Topics in Mathematics with Integrated Support or MATH158S Introduction to Statistics with Integrated Support.	1. Review prerequisite knowledge in an a fashion.
Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)	4. Interpret the graph of a linear function. 5. Solve appropriate real-world application p
Convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)	6. Translate English statements into algebrai equations. 7. Connect the table-of-values, graph, and e of linear equations. 8. Model real-world problems using equatio
Perform arithmetic and algebraic calculations (e.g., adding fractions, factoring quadratic expressions, solving quadratic equations).	5. Review arithmetic and prealgebra calculat fractions. 6. Review introductory algebra concepts suc linear equations. 7. Review intermediate algebra concepts suc expressions and solving quadratic equatio
Make judgements and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis.	4. Solve real world applications problems.
Make and evaluate important assumptions in estimation, modeling, and data analysis	3. Solve real world applications problems.
Express quantitative evidence in support of the argument or purpose of work (in terms of what evidence is used and how it is formatted, presented, and contextualized)	5. Solve real world applications problems.

Teaching Procedures: This course will be taught in a lecture/discussion format with ample opportunity for student questions. Generally, class will begin with a question and answer session on the most recent homework assignment. New material will then be presented in a lecture format and homework be assigned to reinforce the topics covered in class.

Course Topics, Assignments, and Readings:

Topics
1.1 Statistical and Critical Thinking
1.2 Types of Data
1.3 Collecting Sample Data
1.4 Ethics in Statistics
2.1 Frequency Distributions for Organizing and Summarizing Data
2.2 Histograms
2.3 Graphs that Enlighten and Graphs That Deceive
2.4 Scatterplots, Correlation, and Regression
Exam 1
3.1 Measures of Center
3.2 Measures of Variation
3.3 Measures of Relative Standing and Boxplots
4.1 Basic Concepts of Probability
4.2 Addition Rule and Multiplication Rule
4.3 Complements, Conditional Probability, and Bayes' Theorem
4.4 Counting
Exam 2
5.1 Probability Distributions
5.2 Binomial Probability Distributions
6.1 The Standard Normal Distribution
6.2 Real Applications of Normal Distributions
6.3 Sampling Distributions and Estimators
6.4 The Central Limit Theorem
6.5 Assessing Normality
Exam 3
7.1 Estimating a Population Proportion
7.2 Estimating a Population Mean
7.3 Estimating a Population Standard Deviation or Variance
8.1 Basics of Hypothesis Testing
8.2 Testing a Claim About a Proportion
8.3 Testing a Claim About a Mean
8.4 Testing a Claim About a Standard Deviation or Variance
10.1 Correlation
10.2 Regression
Final Exam

Tentative Test Schedule:

- Exam 1:
- Exam 2:
- Exam 3:
- Final Exam:

Basis for Student Grading: Grades for these courses will be assigned as follows based on the percentages. You will be assigned the same grade for both courses.

A	93% - 100%
A-	90% - 92%
B+	87% - 89%
B	83% - 86%
B-	80% - 82%
C+	77% - 79%
C	73% - 76%
C-	70% - 72%

D+	67% - 69%
D	63% - 66%
D-	60% - 62%
F	0% - 59%

Basis for Evaluating Student Performance: The grade for this course will be determined by the percentage of points earned to total points available, based on the following categories:

- Exams (75%): There will be three in-class exams given during the semester. Each exam will account for 25% of your final grade.
- Final Exam (25%): There will be a cumulative final exam given at the end of the course worth 25% of your final grade.

Attendance Policy: Attendance for this course is mandatory and students are expected to attend all class meetings.

Academic Dishonesty:

Academic Dishonesty is defined in the Massasoit Student Code of Conduct to include cheating, falsification of information, working on assignments with classmates without permission, plagiarism, purchasing or submitting assignments from others, or theft of materials. If there is information that academic dishonesty occurred, a faculty member may choose to act as outlined in the course syllabus, including issuing a failing grade for the assignment or the course.

Students may also be referred to the Dean of Students Office for disciplinary action under the Massasoit Student Code of Conduct. If the student believes that there is substantial evidence of error or injustice associated with a failing grade issued because of academic dishonesty, the student may file a grievance under the Grade Appeal Process.

Where the issuance of a failing grade by a faculty member for academic dishonesty will result in a student's dismissal from a program (for example in nursing and other health care programs), the charge of academic dishonesty shall be directly referred to the Dean of Students Office for administration under the Student Code of Conduct.

Affirmative Action, Equal Opportunity, and Sexual Harassment:

Massasoit Community College prohibits discriminatory harassment and sexual harassment, including sexual violence. Inquiries or complaints concerning discrimination, harassment, retaliation, or sexual violence shall be referred to the Title IX Coordinator and Compliance Officer, Amee Synnott, Office of the President, 508-588- 9100, x1304, Brockton Campus, Administration Building, Room 219, asynnott@massasoit.mass.edu. A complaint can also be filed online at www.massasoit.edu/report. For more information about Title IX, visit www.massasoit.edu/title-ix.

Classroom Behavior:

Students are expected to choose behavior that does not interfere with the learning of others. In order to assure that all students have the opportunity to fulfill their educational goals, students are prohibited from engaging in substantially disruptive behavior whether they are in a face-to-face, hybrid, or an online classroom. Substantially disruptive behavior as defined by the Massasoit Student Code of Conduct includes, but it not limited to: shouting down a speaker; disrupting a faculty member's instruction such that it impedes the learning process; failing to comply with a College Official's appropriate directives or instructions; threatening harm; harassing others; fighting or committing violent acts; or engaging in conduct that places health or safety at risk. Substantial disruption or interference does not include conduct that is protected under the First Amendment. Such behavior in the classroom will result, minimally, in a request to leave class and a referral to the Dean of Students.

Participation Policy:

Federal regulations require that Massasoit verify that students are participating in classes for which they receiving aid. To fulfill this requirement, your faculty member is monitoring your participation in this course and will be required to report your participation prior to aid being disbursed. Please visit https://massasoit.edu/enrollment/paying-for-college/financial-aid/attendance-withdrawal-information/

to review the participation deadlines. Students identified as "never participated" or "stopped participating" will be notified by the Registrar that they are being withdrawn from the class.

Academic Advising:

Students should meet with their academic advisor to talk about their academic and career goals and progress in achieving them as early as possible prior to the start of each semester. Please check your Degree Works page (accessed through the Massasoit Student portal) to identify your academic advisor and their contract information.

Access & Disability Resources:

The office of Access & Disability Resources (ADR) is committed to ensuring that students with disabilities have equal, effective, and meaningful access to all academic programs, community events, goods, and services provided by the College in compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Students with disabilities interested in establishing eligibility for services and/or academic accommodations will need to voluntarily disclose their disability to ADR (a confidential process), submit qualifying documentation and complete an ADR intake meeting to determine accommodations. Once accommodations are determined, the student will need to inform their professor of their accommodations by providing the professor with a copy of an Accommodation Letter

(provided by ADR) for the current semester. Students can contact ADR at 508-588-9100 x1807 or by email at adr@massasoit.mass.edu.

Visit www.massasoit.edu/adr for more information.

Basic Needs:

The Center for Basic Needs Security provides resources for students, faculty, and community members.

If a student is experiencing challenges meeting their basic needs, including clothing, food or housing insecurity as well as physical and mental health resources, there are many campus and community resources in place that can provide support. Students may email Ellyn Craig, Coordinator of Basic Needs Security, ecraig3@massasoit.mass.edu or call 508-588-9100 x 1018 for support.

Library:

The Library welcomes all visitors – students, staff, faculty, and community members – for a service- rich virtual and in-person experience. Everyone can engage in both academic research and dynamic programming that focuses on a wide range of topics and current events. Massasoit's library services include: research help, database and book access, printing, technology loans, photocopying, scanning and study spaces. The Library's Website can be accessed through a variety of options: i.e., through the Library tile shown on the MyMassasoit portal, via live chat on the Library's website, over the phone, or in-person at both our Canton and Brockton locations. For more information, visit https://library.massasoit.edu/

Office of Health and Wellness:

The Office of Health and Wellness at Massasoit is designed to support students' holistic health and well-being. We provide health information, outreach campaigns, and programs focused on high-risk areas that impact college-aged populations, such as drugs, alcohol, stress management, mental health problems, mental health prevention strategies, and tobacco cessation.

In addition to maintaining student health and immunization records, the Office of Health and Wellness leads public health crises/emergencies efforts. Additionally, we provide referrals for students experiencing physical or mental health concerns and organize comprehensive campus-wide education and programs related to all the dimensions of health. For more information, contact the Office of Health and Wellness at HealthandWellness@massasoit.mass.edu or 508-588-9100 x1495.

Tutoring Services:

The Academic Resource Center (ARC) offers both virtual and in-person tutoring services for many courses, including mathematics, science, computer science, writing, and reading. Additionally, they offer study skill support and general computer and technology assistance. Appointments are strongly recommended.

For more information and/or make a tutoring appointment:

- Call the ARC at 508-588-9100 x1801 or x2516
- Email the ARC staff atarc@massasoit.edu or cantonarc@massasoit.edu
- Use Navigate (found in the MyMassasoit portal) to schedule an appointment