UNIVERSITY OF MAINE AUGUSTA
MAT 115
ELEMENTARY STATISTICS
BRIDGE YEAR 12
HERMON HIGH SCHOOL
FALL 2017-2018

SYLLABUS: MAT 115

Prerequisite:	A grade of "C' or higher in MAT 111 or MAT 112, or appropriate score on the UMA Placement Test.(Accuplacer)
Instructor:	Stephen R Vose
School Phone:	848-4000 Ext 1208
Email:	svose@hermon.net(best way to reach me)
Office Hours:	Mr. Vose works only on B-days at Hermon HS. Appointments can be made for either before or after regular school hours.
Room:	Hermon HS Room 208

Course Description

Emphasis is placed on the basic concepts and applications of statistics. Collection, analysis, and presentation of data are extensively discussed. Elementary probability is covered. Decision making with large and small samples and prediction based on correlation and regression are also included. This content represents and introduction to elementary statistics. The course is designed to provide students majoring in a wide variety of disciplines with an understanding of statistics and the ability to communicate its use.

The three main topics covered in this course are probability theory, descriptive and inferential statistics. The following concepts will be included: mean, median, mode, standard deviation, standard score and normal distribution, hypothesis testing, confidence intervals and linear correlation.

OBJECTIVES

In order to successfully complete this course the student will be asked to demonstrate his/her

knowledge of the above concepts and perform skills associated with those concepts. Successful completion denotes a total composite score of 60% or more.

SPECIAL SITUATIONS

If you have a disability which may affect your ability to participate fully in this course, it is your responsibility to request accommodations promptly. Contact the Learning Support Services Office, or Coordinator of Student Services at your campus or center to discuss possible assistance. Accommodations must be requested each semester, and are not provided retroactively. For Bridge Year HS students, bring any concerns to your instructor.

REQUIRED MATERIALS

1. Textbook: Fundamentals of Statistics: Informed Decisions Using Data by Michael Sullivan, III, Fourth Edition, Pearson Education, 2012. Book and software ISBN 9780321891907
2. Student's Solution Manual contained within the MyMathLab program.
3. Blackboard access: http://www.course.maine.edu (more information to follow)
4. MyMathLab course(optional) identification number: **vose81524 MY MATH/STATS Lab web site:** http://www.coursecompass.com *Proper viewing of the videos of the videos contained within this program require high speed internet access.*
5. Formula and Table Pull out contained within the textbook or downloaded from MyMathLab.
6. TI-83, TI-83 PLUS, TI-84 Graphing Calculator. ***Bridge Year HS students: The school has several calculators to use within class but students are encouraged to purchase their own.*** *If you have any questions wait until the first class before you purchase one.*
7. A three ring notebook with filler paper.
8. Internet access-Optional.

ASSIGNMENTS:

Students will receive teacher prepared practice worksheets. All assigned problems should be completed on time and each student should keep a notebook showing complete solutions to these problems. This notebook will serve as an excellent source of study for examinations. When requesting help from either the instructor or a math tutor the student will be expected to have his/her notebook and completed assignments present.

CELL PHONES:

Please **DO NOT** use a cell phone as your calculator. As a courtesy to others, please turn your cell phones off during the class or at least have it on silent mode. **PLEASE, NO USE OF CELL PHONES DURING THE CLASS. If you must use your phone, please step out into the hallway to complete your call.** ***Bridge Year High School students should review the Hermon HS Student Handbook concerning cell phone and other electronic devices.***

ATTENDANCE

Regular attendance is required and students who miss a class are responsible for the assignment, notes, etc. Students who attend class regularly learn much more than an instructor can evaluate on a written exam. Students are expected to be prepared to take examinations at the time they are scheduled, and any student who feels he/she is unable to take an examination at the scheduled time **must contact the instructor, prior to the examination, to request an authorized make-up. Make-up requests should be made through e-mail.** Make-up requests that result in an unfair advantage over the group as a whole will not be honored. A student requesting additional time so that he/she can meet with a tutor or have extra study time is an example of a situation that results in an unfair advantage.

Students who do not follow the make-up procedures will receive a 0 for the exam grade.

GRADING

Four examinations, which will be graded on a scale of 0 to 100, will be given. The four examinations represent 90% of the final grade. The remaining 10% of the final grade is composed of a student project and homework; which will consist of chapter assignments, worksheets, quizzes, and handouts. Re-tests on examinations are rarely given. However, if you feel that you need to re-test, discuss this with your instructor. The maximum re-test score will be a 60. There will be no re-tests on the final 4th examination. Letter grades for the course are as follows:

95 - 100	= A	73 - 76	= C
90 - 94	= A-	70 - 72	= C-
87 - 89	= B+	67 - 69	= D+
83 - 86	= B	63 - 66	= D
80 - 82	= B-	60 - 62	= D-
77 - 79	= C+	Below 60	= F

GRADES OF INCOMPLETE(I) WILL ONLY BE GIVEN IN EXTREME CIRCUMSTANCES.

Students who desire to withdraw either from one course or all courses must do so in writing and forward their requests to the Registrar's Office. Failure to do so may result in failing grades in all courses at the end of the semester. Please read the definitions below for clarification.

Definitions of L, W, WF and Incomplete

L Grade: The grade of "L" is awarded if you stop attending, but do not withdraw from the

course. The “L” grade is computed into the grade point average as a failing grade.

W Grade: The grade of “W”, withdraw, is posted if you drop the course during the first 60% of the semester. A “W” grade is not computed into the grade point average. After the 60% point, the grade of WF may be assigned.

WF Grade: The grade awarded when a course is dropped after 60% of the term is completed depends upon your performance up to that point. If you are passing the course the grade of “W” is awarded. If you are failing the course at the time of withdrawal the grade of “WF”, withdraw failing, may be assigned. A “WF” is computed into the grade point average as a failing grade.

Incomplete grades will be granted only under unusual circumstances which prevent a student from completing the course during the semester in which the student is enrolled. The student must request the grade of incomplete from the instructor prior to the end of the semester. Not all requests will be approved. Incompletes must be approved by the Principal.

SOURCES OF ASSISTANCE

Students usually find mathematics classes more time-consuming and stressful than other courses.

Your instructor can be available most B-day mornings before the beginning of the class day.

Bridge Year Students at Hermon HS can schedule time with the math tutor, Ms. Haskell.

ACADEMIC INTEGRITY

Academic integrity means that a student's work is the product of his/her own effort. Violations of academic integrity include such behaviors as cheating, fabrication, and plagiarism and are described more fully in the UMA Student Academic Integrity Code which is published in the online UMA Student Handbook. Each student is responsible for learning the standards of academic integrety and ensuring that his/her work meets these standards. Failure to do so may result in appropriate sanctions. If you have questions about the academic integrity of your work, discuss these with your instructor before submitting the work.
Bridge Year Students at Hermon HS should review the Hermon HS Student Handbook on Academic Honesty.

Q1	Ch. 1	Data Collection	Ch. 1.1 – 1.6
	Ch. 2	Organizing and Summarizing Data	Ch. 2.1 – 2.4
	Ch. 3	Numerically Summarizing Data	Ch. 3.1 – 3.5
	Ch. 4	Describing the Relation between Two Variables	Ch. 4.1 – 4.5
		EXAM 1 Chs. 1 - 4	
Q2	Ch. 6	Discrete Probability Distribution	Ch. 6.1 – 6.4
	Ch. 7	The Normal Probability Distribution	Ch. 7.1 – 7.4
	Ch. 8	Sample Distributions	Ch. 8.1 – 8.2
		EXAM 2 Chs. 5 - 8	
Q3	Ch. 9	Estimating the Value of a Parameter	Ch. 9.1 – 9.5
	Ch. 10	Hypothesis Tests Regarding a Parameter	Ch. 10.1 – 10.6
	Ch. 11	Interferences on Two Samples	Ch. 11.1 – 11.5
	Ch. 12	**I**nterferences of Categorical Data	Ch. 12.1 – 12.2
		EXAM 3 Chs. 9 - 12	
Q4	Ch. 13	Comparing Three or More Means	Ch. 13.1 – 13.4
	Ch. 14	Inference on the Least-Square Regression Model and Multiple Regression	Ch. 14.1 – 14.3
		EXAM 4 Chs. 13 - 14	

Elementary Statistics
MAT 115
Course Content and Skills

Upon successful completion of this course the student will have demonstrated his or her ability to complete the following assessment skills and will have gained an understanding of the mathematical concepts upon which the specific skills are based. Assessment tools include in class exams, quizzes, and homework. Please note that these outcomes have been stated in very general terms. The expected skill level of each outcome will mirror exercises presented in the textbook, which includes the use of appropriate technology.

Concept	**Associated Skills**
Defining Statistics	Distinguish between a sample and a population. Distinguish between quantitative and qualitative variables. Identify levels of measurement. Recognize various sampling techniques. Use random numbers correctly. Distinguish between observation and experiment. Distinguish between various types of surveys.
Descriptive Statistics	Organizing data Distinguish between raw data and grouped data Using and creating graphs and charts Frequency distributions Histograms Stem and leaf plots Mean, median and mode Range, variance and standard deviations Percentiles Box and whisker plots Normal distributions The bell curve

MAT 115 Approved Student Outcomes

Descriptive Statistics continued

Empirical rule
Control charts
Standard (z) scores vs. raw scores and
Associated conversions
Using the standard normal distribution table
Normal approximation to the binomial
Distribution
Paired data
Scatter Diagrams
Linear Regression (a+bx)
Correlation Coefficient

Inferential Statistics Sampling distributions
Central limit theorem
Estimating μ

MAT 115 Approved Student Outcomes

Inferential Statistics continued

- Confidence intervals
  - z intervals
  - t intervals
  - p intervals (binomial distribution)
  - $\mu_1 - \mu_2$ and $p_1 - p_2$
  - Correlation parameters
- Hypothesis testing
  - z-tests
  - t-tests (including degrees of freedom)
  - Proportions
- Dependent samples
- Inference concerning correlation
- Parameters
- X^2 tests of independence
- X^2 tests of goodness of fit
- Testing a variance or standard deviation
- Confidence intervals for variance or standard deviation

Optional topics if time allows:

- Non-parametric statistics
- Rank sum test

Approved 5/15/03