

Math 107 A

Elementary Statistics

Fall 2015

Class Meeting: MWF 1:10 - 2:20 PPHAC 232

Instructor: Nathan Shank

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Office Location: PPHAC 219

Office Hours: Monday, Wednesday 11:30 - 1:00, Friday 9:15 - 10:15. Other times by appointment.

Text: *Introduction to Statistics and Data Analysis*, Peck, Olsen, and Devore, 2016, Fifth Edition, Duxbery

Course Goals: After completing the course, successful students will

- have an understanding of how data is collected and gain experience collecting their own data sets
- be able to effectively summarize data using graphical displays, and interpret data and draw conclusions based on graphical displays of data
- understand that the purpose of collecting and analyzing data is to answer questions and make informed decisions
- understand the role of probability and uncertainty in data analysis
- be able to explain clearly, both orally and in writing, how the results of statistical analysis relate to the context from which they were obtained
- learn to think critically about data and the results of data analysis that occur in their everyday lives
- be able to use technology appropriately as a tool for quantitative analysis

Course Topics: Throughout the course, the student will learn to collect, analyze, interpret and present numerical and descriptive data. The topic covered include collecting data sets, graphically methods for describing data, numerical measures for data, normal distributions, regression and correlation, sampling and design of experiments, basic probability theory, parameter estimation, confidence intervals and inference and tests of hypothesis. These topics are chapters 1 through 13 of the text.

Assignments/Assessment: The following will be used to determine the students grade for the course:

- Textbook Homework, Quizzes: As you know math is not a spectator sport. You need to practice what you learn. You are expected to spend **at least 7 hours** outside of class working on statistics. Each section will have a list of carefully chosen homework problems which you should complete on your own. There will be random homework checks throughout the year. There will be at least one weekly quiz which may be from the reading or the homework. First attempt at homework should be done on your own. If you still need assistance you may ask for a hint from a classmate or work on the problem together. However acquiring an entire solution from a classmate is not acceptable. Homework will prepare you for the test. You are always welcome to come to office hours to see the instructor. Late homework will not be accepted for a grade. I understand that there will be days that you can be at class on time, so the lowest quiz/homework grades will be dropped when computing your final grade.
- Class Assignments: There will be several smaller group assignments throughout the semester. These may be collected, individually, or as a group. You must be present on the day a group assignment is assigned in order to receive credit. If you know you will be missing a class, you may complete the group assignment individually, however you must inform the instructor of your absence prior to the class.
- Culture Points: Mathematics is everywhere. Culture points are designed for you to experience the breadth of math. Please see the handout on Culture Points for more details.
- Project: There will be a group bivariate analysis project. More information on the project will be available at a later date.

Grading: Final determination of your course grade is subject to the discretion of the professor of the course. You are responsible to keep track of your own grade. Grades will be computed as follows:

Class Assignments, Homework, Quiz	30%
Exams	10% each
Project	10%
Culture Points	5%
Final Exam	25%

Class Structure: Class will consist of lecture, group work, individual work, and problem sessions. Please come to class prepared with your text, notes, and calculator everyday. Please be prepared to participate in class. Class will start promptly at 1:10, and class will not end prior to 2:20. Please turn off your cell phones prior to the start of class.

Attendance: Attendance will be taken everyday. There is a very strong correlation between attendance and grades. In order to understand the material, you need to be present in class. Group work also requires everyone to participate. Any student missing more than three classes will lose two percentage points off their final grade for each additional absence. **Remember no late work or quizzes are accepted for any reason. Work is considered late if it is not turned by the start of class.**

Technology: A TI83 or 84 will be extensively used throughout the course. If you do not have one of these calculators, please try to borrow one from a friend. Some quizzes you will not be allowed to use your calculator. If you have another type of technology you would like to use (iPad, computer etc), please ask.

Academic Honesty: For graded homework assignments and projects, you may use your class notes and any books or library sources except a solutions manual. Any resources you use must be documented at the top of the homework assignment. As an example if you get help from the Tutor Center for problem 4 only, please write "Help with problem 4 from Tutor Center". No points will be deducted for honestly acknowledging help. However if you do not document any appropriate resource this is considered cheating.

The College academic honesty policy appears in your Student Handbook; you are expected to be familiar with it. The Academic Honesty Policy Guidelines specific to mathematics classes are reiterated at the end of the syllabus. They apply to work done outside of class as well as to in-class quizzes and tests. Please read them carefully.

If you are unsure about the propriety of a particular procedure or approach, please consult with your instructor before continuing with the assignment.

Special Accommodations: Students who wish to request accommodations in this class for a disability should contact Ms. Elaine Mara, Assistant Director of Academic and Disability Support, located on the first floor of Monocacy Hall (extension 1401). Accommodations cannot be provided until authorization is received from the Academic and Disability Support office.

Academic Honesty Policy Guidelines Mathematics Courses

The Department of Mathematics and Computer Science supports and is governed by the Academic Honesty Policy of Moravian College as stated in the Moravian College Students Handbook. The following statements will help clarify the policies of members of the Mathematics faculty.

In all homework assignments which are to be graded, you may use your class notes and any books or library sources. When you use the ideas or thought of others, however, you must acknowledge the source. For graded homework assignments, you may not use a solution manual or the help, orally or in written form, of an individual other than your instructor. If you receive help from anyone other than your instructor or if you fail to reference your sources you will be violating the Academic Honesty Policy of Moravian College. For homework which is not to be graded, if you choose, you may work with your fellow students. You are responsible for understanding and being able to explain the solution of all assigned problems, both graded and ungraded.

All in-class or take home tests and quizzes are to be completed by you alone without the aid of books, study sheets or formula sheets unless specifically allowed by your instructor for a particular test.

Reminders:

- **Office Hours:** If you are having trouble or are just bored, please come to office hours. We can not cover all the material in depth in 70 minutes. Sometimes hearing an explanation another way is all you need. Be a “regular”.
- **Class Time:** We do not have enough time in class to go over problems similar to your homework problems. Class time will be spent on background and theory first, followed by examples to give you a better understanding. You are expected to struggle through some of the homework problems.

- **Homework:** You must do your homework to succeed in class. You should work on statistics EVERY NIGHT. Set a schedule and stick to it and you will succeed.
- **Other Students:** Get to know the other students in class. This will help if you are absent and will help with understanding the material. Set up times during the week outside of class to meet to work through homework and class assignments.
- **Tutors:** Take advantage of the Math Tutors in PPHAC 238 in the evening. A schedule will be announced around the second week of classes. Often a student can explain things more clearly than an instructor.