

Class Meeting: T/Th 12:45 - 2:20 pm Memorial 302

Instructor: Nathan Shank

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Office Phone: 610-861-1373

Office Location: PPHAC 219

Office Hours: Monday and Friday 9:00 - 10:00, Wednesday 11:30 - 1:00.

Text: *Mathematical Statistics with applications*, Wackerly, Mendenhall III, Scheaffer, 2008, Seventh Edition, Duxbury Thomson Learning.

Course Goals: After completing the course, successful students will

- understand probability distributions involving more than one variable;
- solve a variety of statistical inference problems and understand real world situations that give rise to them;
- learn to make transitions between verbal descriptions, symbolic representations, and numerical descriptions related to statistical analysis;
- be able to apply the appropriate techniques to analyze data and formulate a conclusion from the statistical analysis;
- understand the role of statistics in scientific and medical investigations as well as public policy and personal decision making; and
- be able to explain clearly, both orally and in writing, how the results of their statistical analysis relate to the context from which they were obtained.

Course Topics: Throughout the course, the student will learn to collect, analyze, interpret and present numerical and descriptive data. This is something that is vital in preparing student to make sound professional and personal decisions. Data analysis, inferences, and decision making are situations which probability and statistics address. The course will start with chapter 5, and then part of chapter 11. The course will then cover chapters 6-10 and the rest of chapter 11 and parts of chapters 12 through 14. Additional topics outside the text will also be discussed. The topics to be covered include but are not limited to the following: multivariate distributions, central limit theorem, confidence intervals, point estimators, hypothesis testing, linear models, least squares, analysis of variance, and χ^2 tests.

Assignments/Assessment:

- Homework: As you know math is not a spectator sport. You need to practice what you learn. Homework will be assigned weekly and it will be collected at the beginning of class on Thursday morning. 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 is to be written up individually. Any collaboration must be properly documented. If two or more homework sets look similar, no points will be awarded for the entire homework set (with no warning). Please see the section on academic honesty policy for more information. You are always welcome to come to office hours to see the instructor. Late homework will not be accepted for a grade. Homework should be neatly written on stapled, lined notebook paper. If you need paper, please see me.

- **Project:** There will be several group projects throughout the year. More information will be available at a later date. You will be graded individually on content AND participation.
- **Tests:** You will have **two** tests and a cumulative final exam. The tests are tentatively scheduled for Thursday February 25 and Thursday April 14. The final exam is scheduled for Friday, May 6 from 11:30 - 1:30.

Grading: You are responsible to keep track of your own grade. Grades will be computed as follows:

Homework	30%
Test	20% Total
Project	25%
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 the start time, and class will not end early. 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 every one's participation. I understand that there are circumstances that you must miss class so the lowest homework grade will be dropped when computing the final grade. Remember that no late homework is accepted.

Academic Honesty: 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 the Academic Support Center, located in the lower level of Monocacy Hall, or by calling 610-861-1401. Accommodations cannot be provided until authorization is received from the Academic Support Center.