

# MTH 114-01 Spring 2011

## Statistics for Natural Sciences

### Prof. A. Wittenstein

#### Contact Information

Office: Post Hall 103

Email: [Wittenstein@adelphi.edu](mailto:Wittenstein@adelphi.edu)

Course Web Page: <http://www.adelphi.edu/~wi16133/mth114/s11/>

Office Hours: M/W 5:30-6:00pm in Science 227. Other days/times by appt.

#### Class Meetings

M/W 4:15-5:30pm, Science 227 (M 1/24 → M 5/9)

\*M 3/14 & W 3/16: Spring Break – No Classes

\*M 4/11: Research Day – No Classes

\*Tu 5/10: Make-Up Day (if I need to cancel a class, it may be rescheduled for this day)

\*W 5/11: Final Exam – from 3:30-5:30pm (if a class is cancelled due to a university closing, it will be made up on this day, and the final exam will move to W 5/18, 3:30-5:30pm)

#### Prerequisite

High School Mathematics through Intermediate Algebra (i.e. Algebra 2, Math B)

#### Course Description

- Develop tools for making decisions when faced with data.
- Learn techniques for analyzing and displaying data using illustrative examples drawn from the sciences.
- Learn techniques for performing statistical tests using illustrative examples drawn from the sciences.
- Make extensive use of statistical software in integrated labs and lectures as an aid to reason.

#### Learning Goals

- Students will be able to understand and apply the three-step Data Analysis Process: acknowledge variability, describe variability, and draw conclusions to recognize variability.
- Students will be able to analyze and display data using SPSS software.
- As a Second Competency course, this course will meet the following Adelphi University General Education Objectives: Communication, Critical & Integrative Thinking, Quantitative Reasoning, and Information Literacy.

#### Course and Assignment Expectations

As is typical of undergraduate courses, lectures will not cover everything you need in order to complete the homework assignments. While the class meetings will highlight the important parts of the material, there will not be time in class to cover all of the material in each reading assignment in detail. Therefore, having access to, *and reading*, the textbooks is an essential component of this course. I do not expect you to understand everything in the reading assignments. I do, however, expect you to ask me questions about anything that you do not fully understand in a reading assignment, either by email, in office hours, or during the lecture covering that material. To benefit most from the reading assignments, they should be read *before* the class session covering those sections.

In addition to the reading assignments, required homework exercises will be assigned at most class meetings. Required homework exercises are due at the start of class on the Monday of the week after they are assigned, unless announced otherwise, either on paper or through the Moodle Learning System (see below). **Late homework will not be accepted for credit.**

Homework is an essential part of any course in mathematics, including statistics. **You learn math by doing math.** Completing your homework is also the best way to study, as it gives you an indication of the types of problems that will be on the quizzes and examinations. Give your homework the time it deserves! You should do additional exercises from the two textbooks, not just the required ones.

I encourage you to ask me questions about homework exercises, by email or during office hours. However, for required homework exercises, I will only give a hint on how to start or where in the textbooks to refer to. I will not

solve any required homework exercise for you, prior to collecting it for grading. With that said, I will be glad to fully show you the solution to any exercise that is not a required homework exercise.

In general, I cannot allot class time to the review of homework. However, I will post the answers, and in some cases sample solutions, to the required homework exercises on Moodle, within one week after the homework due date. For further review of graded homework, please attend my office hours.

Lastly, for assignments and exams, you are expected to be familiar with, and follow, Adelphi University's Statement on Academic Integrity, which can be viewed on the web at <http://academics.adelphi.edu/regulations/undergrad.honorcode.php>. Violations of these standard, including (but not limited to) plagiarism of any portion of an assignment or misconduct during quizzes and examinations, will be dealt with in accordance with University regulations and procedures.

## **Attendance**

**Attendance is required.** After four absences, your grade will be lowered by one-third of a grade (e.g., A to A-, A- to B+, etc.). Also, arriving to class late or leaving early will count as partial absences. You are responsible for whatever work is covered in class ***whether or not you are there***. Absence from exams will be excused only in exceptional cases. The decision to allow a make-up exam will be made in accordance with the policies of Adelphi University.

## **Grading**

Assignments	30%	Midterm Exam	20%: Wednesday 3/9: in class-date tentative
Quizzes	20%	Final Exam	30%: Wednesday 5/11 (or 5/18, see above): 3:30pm-5:30pm

## **Course Materials**

### **Textbooks**

There are two textbooks for this course. Both are required.

- Peck and Devore, *Statistics: The Exploration and Analysis of Data*, Sixth Edition, 2008
- Carver and Nash, *Doing Data Analysis with SPSS Version 16*, 2009

You can purchase these two books as a package at the bookstore. You can also purchase an electronic version of Peck and Devore from [ichapter.com](http://ichapter.com) for a reduced price.

Please bring both texts (and the CD-ROM that comes with the Carver and Nash text) to class each day.

### **SPSS**

- As requested by other departments, we will be using the software package SPSS in this course. You will be expected to use SPSS to generate some of your homework, but it will not be used on course exams.
- **You do not, and should not, purchase SPSS on your own.** SPSS is very expensive software, and there are open source (free) alternatives to SPSS available for statistical analysis outside of this course.
- Adelphi has a license for SPSS, and the software is available on computers throughout the campus, particularly in Swirbul Library and in Post 102. Please use the university's resources to complete your SPSS-based assignments.
- For course assignments where you are allowed or required to use SPSS, it will be specified in the assignment. When it is not specified, you are required to do the assignment without SPSS.

### **Moodle Learning System**

- All grades (for assignments, quizzes, and exams) will be posted to Moodle.
- Course materials (such as assignments and assignment solutions) will be posted to Moodle.
- Assignments can be submitted through Moodle, either due to an absence or when the assignment requires the submission of electronic files.
- We may also use other Moodle features, such as forums.

## **Disabilities**

If you have a physical, medical or learning disability and require accommodations, please contact the Office of Disability Support Services (DSS) to discuss these accommodations. DSS is located in the University Center Room 310 at 516-877-3145.