

Mathematics 67-217

Data Exploration and Analysis (3 credits)

Pre-requisite: 67-110 (Number Systems) with a grade of C or better.

Course Objectives:

This course is designed to provide you with 1) experience collecting, analyzing and displaying data, and 2) an understanding of statistical techniques, probability, and simulation. It will give you the skills to interpret statistical claims, and provide you with knowledge you will need to teach probability and statistics to elementary school children.

Instructor: Dr. Jennifer Szydlik

Office: 218 Swart

Phone/email: 424-7350, szydlik@uwosh.edu

Office Hours:

Monday: 3:00; Wednesday: 11:30; R: 12:40, and other times by appointment. I will also plan to be in the Math Lab on Tuesdays at 12:40. Please don't let yourself fall behind. I am happy to meet with you. Let me know if you would like an appointment.

Textbooks:

Big Ideas in Mathematics for Future Elementary Teachers: Big Ideas in Data Analysis and Probability by J. Szydlik and C. Seaman. (This is a set of notes available at the University Bookstore).

Course Outline:

Proportions and Sampling – 2 weeks (representative samples, proportional reasoning, and survey data)

Dealing with Data – 2.5 weeks (data displays, descriptive statistics, and distributions)

Correlation versus Causation – 3 weeks (relationships among data sets, the idea of linear regression, the idea of correlation, causation cautions, and clinical studies)

Counting – 2.5 weeks (the multiplication rule, permutations and combinations)

Probability – 4 weeks (the language and tools for dealing with chance, misconceptions held by children, expected value, binomial situations)

Instructional Format:

The concepts of this course often will be explored through hands-on activities and

problems. Class time will be spent working on those problems in cooperative small groups and discussing strategies and solutions. You are expected to participate fully in the class activities and to share your ideas with the class. You will be responsible for completing readings, working problems sets, and working on projects outside of class.

Assessment:

We will have three in-class exams. Each is worth 25 percent of your course grade. The dates of those exams are Friday, October 8th; Friday, November 12th; and Friday, December 17th.

Written work will comprise 20 percent of your grade. This work will include group projects, problem sets, and quizzes.

Your contribution to the class discussions is very important and therefore your attendance and participation comprises 5 percent of your grade in this course. You can miss two days without penalty (for any reason: e.g., illness, prior commitments, family matters, religious observance) and after that you will lose one percent of your course grade for each day missed (up to 5%) Arriving late or leaving early will count as half a percentage point.

Summary:

Exam I:	25%
Exam II:	25%
Exam III:	25%
Written Work:	20%
Attendance:	5%
<u>Total</u>	<u>100%</u>

Grades will be kept on D2L. If you ever find an error, let me know. The grading scale will be as follows (after rounding to the nearest percent):

A	93 - 100% of the course points
A-	90 - 92%
B+	87 - 89%
B	83 - 86%
B-	80 - 82%
C+	77 - 79%
C	73 - 76%
C-	70 - 72%
D	60 - 69%
F	0 - 59%