

MATH 419/519: Probability & Statistics
Course Syllabus for Fall 2009

Course Instructor: Dr. Marty Spears Office: Admin 102
Phone: 279-4335
E-mail: mspears@harding.edu
Web: <http://www.harding.edu/mspears>

Class Time: Tuesday / Thursday from 7:30 am until 8:45 am in Science 108. Office hours are by appointment between 2:00 pm and 4:00 pm.

Prerequisites: MATH 318 or equivalent

Required Materials: *Probability and Statistics for Engineering and the Science* (7th Edition) by Jay Devore, WebAssign access (www.webassign.com), and a graphing calculator. (TI 83 or 84 recommended)

Course Scripture: Proverbs 16:33
"The lot is cast into the lap, but its every decision is from the LORD". (NIV)

Course Objectives: This course will provide the students with a basic knowledge and understanding of statistical estimation, inference and modeling methodology. The students will learn basic principles of data collection and will gain experience in applying proper statistical methods to sample data in order to make valid statistical inference. The students will learn to use conduct a statistical analysis using a graphing calculator and/or a statistical software package.

Course Methodology: This course will utilize daily lectures and problem solving sessions by the instructor, which will be reinforced with WebAssign online course and homework system, a project and examinations.

Academic Integrity: Academic dishonesty (cheating) in all its forms is inconsistent with Christian faith and practice and will result in sanctions up to and including dismissal from the class with a failing grade, and will be reported to the Academic Affairs Office. All instances of dishonesty will be handled according to the procedures delineated in the Harding University catalog.

Students with Disabilities: It is the policy for Harding University to accommodate students with disabilities, pursuant to federal and state law. Therefore, any student with a *documented disability* condition (e.g. physical, learning, psychological, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the instructor and the Disabilities Office at the *beginning* of each semester. (If the diagnosis of the disability occurs during the academic year, the student must self-identify with the Disabilities Director *as soon as possible* in order to get academic accommodations in place for the remainder of the semester.) The Disabilities Office is located in Room 102 of the Lee Academic Center, telephone, (501) 279-4019.

Attendance Policy: Regular attendance is required. Excessive absences (more than 2 unexcused or 6 total absences) can result in a student being assigned a “WF” in the course.

Assessment: Assessment of the knowledge, skills, and dispositions of each student for the purpose of assigning a letter grade at the completion of this course will be based on performance on examinations, homework and a group project. Examinations will be worth 100 points each. The cumulative homework average will be worth 100 points on the final grade, and the project will be worth 100 points.

Final course grades will be assigned according to the following scale:

A = 90 – 100	C = 70 – 79	F < 60
B ≥ 80 – 89	D = 60 - 69	

Examinations: There will be three examinations at scheduled times during the semester, and a final exam at the scheduled time during finals week. Exams must be taken as scheduled except in extreme circumstances, if approved by the instructor. Otherwise, the student will receive a zero for that examination.

Projects: Students can work in groups on a project, which will require the design of an experiment, data collection and an appropriate statistical analysis and report. The planning, data collection and analysis will be detailed in a project report that is less than 2 pages in length (not including tables and graphs).

Homework: All students must use WebAssign to complete their homework assignments. Homework must be completed by the due date in order to receive credit. Other assignments can be administered if deemed necessary by the instructor.

Technology: A graphing calculator and/or approved statistical software can be used to complete all projects and assignments. A graphing calculator can be used on examinations.

Course Outline:

Week	Date	Topic
1	8/25	Introduction
	8/27	Ch 1: Gathering Data and Descriptive Statistics
2	9/1	Ch 2-5: Probability Review, Normal Distribution, Central Limit Theorem
	9/3	Ch 6: Point Estimation
3	9/8	Ch 6: Point Estimation
	9/10	Ch 7: One-Sample Estimation
4	9/15	Ch 7: One Sample Estimation
	9/17	Exam 1
5	9/22	Ch 8: One-Sample Inference
	9/24	Ch 8: One-Sample Inference
6	9/29	Ch 8: One-Sample Inference
	10/1	Ch 9: Two-Sample Estimation
7	10/6	Ch 9: Two-Sample Inference
	10/8	Ch 15: Distribution Free Procedures for One & Two Samples
8	10/13	Ch 15: Distribution Free Procedures for One & Two Samples
	10/15	Exam 2
9	10/20	Ch 10: Analysis of Variance (ANOVA)
	10/22	Ch 10: Analysis of Variance (ANOVA)
10	10/27	Ch 15: Distribution Free ANOVA
	10/29	Ch 14: Goodness-of-Fit Tests
11	11/3	Ch 14: Goodness-of-Fit Tests
	11/5	Ch 12: Linear Regression & Correlation
12	11/10	Ch 12: Linear Regression & Correlation
	11/12	Exam 3
13	11/17	Ch 11: Multifactor Analysis of Variance
	11/19	Ch 11: Multifactor Analysis of Variance
---	11/23-11/27	Thanksgiving Break
14	12/1	Ch 12: Multiple Regression
	12/3	Ch 12: Multiple Regression
15	12/8	Selected Topics
	12/10	Project Presentations
--	12/17	Final Exam

Note: This outline is tentative and subject to change.