

MARSHALL UNIVERSITY
DEPARTMENT OF MATHEMATICS AND STATISTICS
STUDENT INFORMATION SHEET AND SYLLABUS
SPRING 2014

COURSE:

Title : MTH 326 – Applied Statistical Methods
Section : 201
CRN : 4586
Credit hours : 3 hours
Class time : MWF 10:00-10:50 AM
Classroom : SH 513 (Smith Hall)

SEMESTER: Spring 2014

INSTRUCTOR: Dr. Avishek Mallick

Office : SH 741A
Email : mallicka@marshall.edu
Phone ext. : 3443
Office Hours : MWF 11:00 AM -12:00 noon
TR 1:30 - 3:00 PM and by appointment.

COURSE DESCRIPTION AND OBJECTIVES:

Description : The applications of statistical methods include the use of statistical packages such as R and SAS. Topics include introduction to descriptive statistics, probability and sampling distributions; inferences concerning one and two samples; simple and multiple regression, analysis of variance and covariance, and logistic regression.

Objective : 1. To prepare students for a course in applied statistics
2. To prepare students for further courses in statistics
3. To give students a solid foundation and understanding of statistical methodologies and how to use them
4. To teach students how to use the R statistical packages
5. To teach students how to manipulate data and analyze statistical problems with R

STUDENT LEARNING OUTCOMES: At the end of the course, the student will be able to

- manipulate data
- carry out statistical analyses with the use of statistical packages especially R
- carry out tests of hypotheses
- identify various estimation procedures and explain their properties
- interpret results obtained from statistical procedures
- choose appropriate regression analysis for specific statistical experiments
- perform analyses and variance and covariance

TEXT INFORMATION:

Title : *Statistics and Data with R: An Applied Approach Through Examples*
Authors : Yosef Cohen and Jeremiah Y. Cohen
ISBN : 978-0-470-75805-2
Publisher : John Wiley
Year : 2008

NOTE ON THE TEXTBOOK:

A course in statistical methods requires the use of statistics software. There are lots of statistics software in the market. Recently, the R package has become a lingua franca for statistical analyses. Because this book is on statistics and data (the two main focuses in applied statistics), and uses R, we will need to be familiar with its use. However this course is not about knowing how to write scripts/codes in R. It is much about learning the methodologies and applications of statistics using R. Most scripts are provided by the book. And understanding of these scripts would enable one to tweak them in similar problems.

ATTENDANCE:

Students are expected to attend all scheduled classes. It is the student's responsibility to find out what was discussed in a missed class. Although, attendance records will not be used to compute grades (except possibly in borderline cases), however, missing class can be expected to significantly reduce your chances of success. Note also that it is the student's responsibility to present approved notice of any absence that would be excused under the terms and regulations stipulated by the university.

PLAGIARISM:

Note that plagiarism (the submission as one's own work of any oral, graphic, or written material wholly or in part created by another), is a form of academic dishonesty. Sanctions for academic dishonesty shall be imposed in accordance with university's guidelines on such matter.

HOMEWORK:

Homework shall be assigned, but may not be graded. It is the responsibility of students to endeavor to work through homework problems and ask questions if necessary. Students are encouraged to work together on homework assignments.

STUDENT BEHAVIORS:

Students are advised to turn their cell phones and other noise generating devices off prior to entering the class. In the case where a student awaits any emergency call, the noise should be restricted and made personal. And in this case, I should be notified as soon as the student enters the class. Food items, apart from water or soft drink, are not allowed in the class. The reading of newspapers and other unrelated materials while the class is in session is prohibited. Please ensure that other students are respected.

CHEATING:

Note that in a case where a student is suspected to have cheated, the student may be asked to re-take the test. And where the student is found or confirmed to have cheated, a zero grade will be awarded to the student.

You may wish to refer to other university policies concerning academic dishonesty at, <http://www.marshall.edu/wpmu/academic-affairs/policies/#AcademicDishonesty>

OTHER POLICIES:

- Information regarding the university policy for students with disability can be found in <http://www.marshall.edu/wpmu/disabled>
- Statement regarding University Computing Services Acceptable Use Policy can be located at <http://www.marshall.edu/ucs/policies.asp>
- Statement regarding Marshall's policy about inclement weather can found in the link <http://www.marshall.edu/ucomm/weather.html>
- Statement regarding Marshall's policy on Affirmative Action can found in the link <http://www.marshall.edu/eoaa/Forms/EEO-Policy.pdf>

STATISTICAL RESOURCES:

Books other than the one recommended for this course will be used. It is important that every student should visit <http://www.r-project.org/> or <http://en.wikipedia.org/wiki/R> and download the R programming language/software from your preferred CRAN mirror. It will be needed in the course of our discussion. Note that your knowledge of the programming language is not the focus in this course. A basic R source manual needed for statistical computing is provided on the WebCT. Howbeit, students are allowed to use any other statistical software other than the R program. These include SAS, JMP, Minitab, MATLAB, SPSS, and any appropriate other software.

ASSESSMENT:

The final grade will be based on the following components:

Homework	25%
Examination I	25% [Friday, Feb 21]
Examination II	25% [Friday, Apr 04]
Final Examination	25% (Covering all areas of the course)

The semester grade will be based on the percentage of total possible points, using the following scale.

90 -100% -- A
80 - 89% -- B
70 - 79% -- C
60 - 69% -- D
00 - 59% -- F

FINAL EXAMINATION: Monday May 05 [10:15 AM – 12:15 PM]