Class Meets : Tuesday and Thursday from 1:30 to 3:00 PM in 218 Coates Hall		
Professor: JAMES P. GEAGHAN		
Office	149 Woodin Hall (aka Agriculture Administration Building)	
Office hours	Thursdays, 10:40–11:30 (or call for appointment anytime)	
Telephone	(225) 578 - 8303	
Internet materials	Email address: **jgeaghan@lsu.edu** http://www.stat.lsu.edu (department home page) http://www.stat.lsu.edu/faculty/geaghan/jpghome.html	
Labs are held in Room 11, Woodin Hall (aka Ag Admin Bldg.)		
Lab Instructor	Purnima Praturi	
Office	Room 25 Woodin Hall (aka Agriculture Administration Building)	
Office hours	Scheduled by Lab Instructor	
Lab Times	Tuesday (1*H*) 3:00-4:50, Wednesdays (2) 11:00-12:50 and (3) 1:30-3:20	
Grading Points:	2 exams @ 100 points each	200
	1 final @ 150 points	150
	Group Poster	50
	Quizzes: Daily quizzes on random dates @ 50 points total	50
	Weekly lab assignments @ 100 points total	100
	TOTAL	550
Exam Schedule: See course webpage for confirmation of all dates		
Poster Description	Thursday, September 18, 2014 – Poster description due	
First Exam	**Thursday, October 16, 2014 – Exam1 (note change from packet)**	
Second Exam	Thursday, November 20, 2014 – Exam2 (before Thanksgiving)	
Poster due	Tuesday, December 02, 2014	
Final Exam	Thursday, December 11, 2014 7:30 AM - 8:30 AM **(keep this date open)**	
Course Grading:	$\textbf{Score} = \dfrac{(\textbf{Exam1}+\textbf{Exam2}+0.5\textbf{Poster}\%+\textbf{Lab}\%+0.5\textbf{Quiz}\%+\textbf{Final})}{5.50}$	
Letter grade	Guaranteed minimum letter grade assignment	
	90 – 100 points, minimum grade of	A
	80 – 89.9 points	B
	70 – 79.9 points	C
	60 – 69.9 points	D

TEXT (recommended, not required): Rudolf J. Freund, Donna Mohr & William J. Wilson . 2010. Statistical Methods (3rd Edition) Academic Press, N.Y., 824 pages. (ISBN: 978-0-12-374970-3). Also acceptable are some older editions, edition 2 (2003) and the revised edition (1997) area acceptable, the 1993 edition is unadvisable. Textbook is recommended, not required. It is used for lab assignments and as a reference.

Catalog Course Description : *7015 Statistical Techniques II (4) F,S Prereq.: EXST 7005 or equivalent. 3 hrs. lecture; 2 hrs. lab. Credit will be given for only one of the following: EXST 7013, 7014, 7015, 7019. Multiple classification analyses of variance and covariance, sampling designs, parameter estimation, multiple regression and correlation,tests of specific hypothesis, and factorial experiments; emphasis on field-oriented life sciences research problems..*

Note the prerequsite: "EXST7005 or equivalent". EXST7003 and EXST7004 are equivalent.
If you have not had one of these you need permission of the instructor.

Course content

- Introduction
- Exp Design Identification
- Simple Linear Regression (SLR) – review
  - Calculations and Equations
  - Example
- Intrinsically Linear Regression (Curvilinear)
  - Example
- Matrix Algebra Introduction
  - Matrix Sweepout Example
- **Multiple Regression** – extra sum of squares example
  - Regression Diagnostic Criteria
  - Multicolinearity
  - Variable Diagnostics
  - SENIC example
  - Observation Diagnostics
  - Variable Selection
- Polynomial Regression (Curvilinear) with example
- **Logistic Regression** with example
- **Analysis of Covariance** with example
- **Analysis of Variance** – Introduction
  - ANOVA Example
- **Experimental Design**
  - Design layouts
  - Creating Expected Mean Squares
  - Examples
- **Post ANOVA Tests and Calculations**
  - Post ANOVA Contrasts
  - Orthogonal Polynomial Tables with examples
- Randomized Block Design with example
- **Treatment arrangements** with examples
- SplitPlot with examples
  - Covariance Structures
- LSMeans
- Analysis of Covariance (Revisted, time permitting) with example

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First day handouts are not all included in notes, save them.

Poster Project

A poster project is required for EXST7015. This project will consist of a poster on some statistical analysis. The analysis will employ one or more of the techniques covered in the course. Students should work together in groups of 3 or 4 on the report, and each group will turn in a single poster with the names in alphabetical order. Groups of 2 or 5 students will be allowed by permission only. **Only one student from the Department of Experimental Statistics is allowed per group**.

A preliminary proposal for the project is due about a month into the semester (see course calendar online). The proposal should include the names of the persons in the group, a description of the data set and its source, and the type of analysis that is to be done. The data set should be an original data set. Please give enough information about what you intend to do that I can provide suggestions for analytical procedures not yet covered in the course. I will need to know what variables are available in the dataset, particularly whether they are quantitative or qualitative.

If you are not a member of a group by the preliminary proposal due date turn in a paper with your name and let me know if you have a dataset. I will either join individuals not in a group into a single group (if someone has data) or I may modify an existing group by adding individuals who have not joined a group.

The poster should be turned in the form of a single PowerPoint slide. The size should be of 4 feet by 3 feet. In addition to the poster, please provide an appendix with the computer program and output for the statistical analysis. These may also be turned in as WORD.DOC files, as TEXT.TXT files (the SAS .LST and .LOG files are TXT files), as HTML files or as PDF files.

The poster is due on Tuesday of the last week of class. It should be submitted in electronic form, either on a CD or via email (jgeagha**n**@lsu.edu). No extensions can be granted as this is the last week of classes. Only one member of each group need turn in a poster. I will email all members of any group whose poster is not received by class time on Tuesday of the last week of classes.

There are some examples of posters from previous classes in the back of the lab in room 44.

Posters typically include the information below as text sections, though some may be combined.

a) A header with poster Title and Authors (alphabetical order please)
b) Abstract and Introduction (together not to exceed 1/3 of the poster)
c) Description of the data set and Methods for the scientific and statistical analysis
d) Supporting tables and graphics
e) Results and Conclusions
f) References (including source of data)

I am obviously most interested in the methods, tables, graphics and results. My evaluation will be based on the following considerations; (most important) appropriateness, correctness and completeness of the statistical analysis, (secondary consideration) organization of the material, conciseness and clarity of the presentation.

Tips of posters

1) I would like the poster in "PowerPoint", either the 2003 format (ppt) or 2007 (pptx).
2) The size of the poster should be a custom size of 48 inches by 36 inches. Landscape is preferred, but portrait is acceptable.
3) Background for the poster can be a solid color, color of varying shades (gradients) or an image. Please **do not use drawn "patterns"** (e.g. striping or cross hatching) in either the background of the poster or the text boxes.
4) Make sure the poster is easily readable. Keep transparency to a minimum, make sure text is clearly visible against the background.