Stat 5299 (Au 2013): Intermediate Data Analysis I Bridge Course

Lecturer
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Office hours in 205B Cockins Hall: Tues 11-noon, Thu 2-3pm, or by appointment.

Grader
To be announced.

Lectures
Starting around Tues 22 Oct, on Tue, Thu, Wed, and Fri, 8-8.55am in Evans Lab (EL) 2004. You are certainly welcome to come to lectures prior to that point that will be part of the Stat 5301 class. There will be no class on Wed 27 Nov and Fri 29 Nov (Thanksgiving).
Download notes from the Stat 5301 website at http://www.stat.osu.edu/~pfc/teaching/5301/

Class Attendance Policy
You are expected to attend all lectures.

Course Description, Learning Goals and Objectives
Stat 5299 bridges Stat 528 (Data Analysis I) under quarters and Stat 5302 (Intermediate Data Analysis II) under semesters. It covers categorical data, the two sample problem, and one-way ANOVA.

Expected Learning Outcomes: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

Students in Statistics 5299 are expected to be able to identify an appropriate analysis for data collected in a study, carry out such an analysis, examine whether the assumptions behind the analysis are reasonable, and recognize the strengths or weaknesses of the study based on how the data were collected. Doing so requires understanding basic concepts in statistics and probability; the ability to create graphical and numerical summaries of data; understanding how the design of a study affects the conclusions that can be made; and the ability to carry out basic statistical analyses (by hand or using statistical software). Students will conduct analyses of data, including a discussion (in plain English) of what conclusions can be drawn.

Prerequisites: Stat 528 or permission of instructor.
Books


The Statistical Sleuth is also required for Stat 5302. Please read the Statistical Sleuth as the course progresses, as I may not cover everything in class. The goal of statistics is not calculation, but gaining understanding from numbers. Thus course should be regarded as a research methods course and not a mathematics course! This means that the correct numerical answer will only receive partial credit. The remainder of the credit will be available for choosing the best method of solution and explaining why the method is appropriate. You will also need to *interpret* your answers in the light of the practical problem.

### Evaluation

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<tr>
<th>Homework</th>
<th>Final exam</th>
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**Homework** will be due at the *beginning* of class on the day it is due. **No** late homework will be accepted. You are encouraged to work together on the homework, but **do not** copy any part of a homework. Each student must produce his/her own homework to be handed in. Feel free to ask me for help after you have made an attempt of the questions. The grader for the course does not have the time to provide detailed explanations on each question that he/she grades. To make up for this, I will endeavor to make homework solutions detailed enough to allow you to understand how the question could be approached. Homework solutions will be available on the class web site.

**Homework preparation rules:** Put your name and the homework assignment number on the top right-hand corner of every page. All homework must be submitted on 8.5”x11” paper. Staple the pages together. We are not responsible for lost pages. Submit the problems in order, making sure that the computer output and discussion is placed together (do not put the computer output at the end of homework). Raw computer output is not acceptable. Make it clear what parts of the output are relevant and show how they answer the questions posed in the homework.

**Exams:** There will be one **final exam**:

- Final Mon 9 Dec 8:00–9:45

This exam is closed book/closed notes. Calculators are allowed – personal digital assistants and cellphones are not. The final will cover all the material for the course. There will be **no make-up** exams.

### Computing

This class requires you to use the statistical software package called R. More details will be given in class and on the class web site. It is suggested that you read the Stat 5301 lecture notes to see how R is used.
Academic misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct (http://studentaffairs.osu.edu/info_for_students/csc.asp).

Disability Statement

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/.

Disclaimer

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular I reserve the right to change due dates or the methods of assessment. Official announcements will ALWAYS be those made in class.