

Statistics 5301
Intermediate Data Analysis I
Autumn Semester 2016

Class Meetings: Cockins Hall (CH), Room 240, MW 8:00am – 9:50am

Instructor: Nicole Kelbick, PhD

Contact: (614)-292-0293, kelbick.1@osu.edu

Office Hours: 435 Cockins Hall (CH), Tu Th 8:30am – 10:30am, 2:00pm-3:00pm

Grader:

Name	Shugi Zhou
Email	Zhou.2239@osu.edu
Office	TBA
Hours	TBA

Prerequisites: Prerequisites: Math 1075 (104) or equivalent, or Math Placement Level of R, or permission of instructor.

Enrollment: ADD and SECTION CHANGES will be processed, contingent upon availability, starting at 7am on Monday August, 29th through Tuesday, August 30th. This will be on a first-come first-served basis in 405A Cockins Hall. **The instructor does not sign any Add or Section Change forms.** Check out www.stat.osu.edu/node/1643 for more detailed information regarding Add and Section Changes.

Closed Section Strategy: If the section you wish to take is closed, consider enrolling into another section that is still open. It is much easier to do a section change (and there are no late add fees either) if a space opens up. It is more complicated to do a late enrollment and the chance of succeeding is not great.

Textbook:

- (1) *Introduction to the Practice of Statistics* (8th edition)
by David S. Moore, George P. McCabe, and Bruce A. Craig.

This text is NOT required and should only be used as a reference for the first half of the course. We will only cover Chapters 1 – 9 of the book for this course.

- (2) *The Statistical Sleuth: A Course in Methods of Data Analysis* (3rd edition)
by F. L. Ramsey and D. W. Shafer.

This text is required for the second half of the course and also used in STAT 5302, the second course in the Intermediate Data Analysis sequence.

Chapters 1 – 6 will be covered for this course; they encompass topics in Drawing Statistical Conclusions, Inference Using t-Distributions, A Closer Look at Assumptions, Alternatives to t-Tools, Comparisons Among Several Samples, and Linear Combinations and Multiple Comparisons of Means.

The textbooks are on reserve in the Science and Engineering Library (SEL)

Website: The course has a web page on Carmen (<http://www.carmen.osu.edu>). Homework assignments, solutions, class schedule, and other relevant material and announcements will be posted on the web page. Please check it on regular basis.

Course Description: Stat 5301 is the first course in a two-semester non-calculus sequence in data analysis covering descriptive statistics, design of experiments, probability, statistical inference (one-sample and two-sample problems, goodness of fit, and one-way ANOVA). This course is a GE Data Analysis Course.

Goals: Develop the skills to draw sound statistical conclusions by critically evaluating data-based results.

Expected Learning Outcome: 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 5301 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.

Important Dates:

Date	Reason
September 5	Labor Day (no classes)
September 16	Last day to drop without receiving a "W" on student record.
October 13-14	Autumn break (no classes)
November 11	Veteran's Day (no classes)
November 23, 24, 25	Thanksgiving break (no classes)
December 7	Last day of classes

Grading: Your grade will be based on homework assignments, two midterms, and a comprehensive final exam. The relative point-worth of these components are as follows:

Homework	25%	Approximately weekly
Midterm I	20%	Tentatively Wednesday, Sept. 28 th , in class
Midterm II	25%	Tentatively Wednesday, Nov. 2 nd , in class
Final	30%	Monday, Dec. 12, 8:00am - 9:45am, in class
	<u>100%</u>	

Homework: There will be approximately weekly assignments. Homework problems and solutions will be posted on Carmen. **No late homework will be accepted.** All homework are due at the beginning of class.

Computing: You will be required to do some basic statistical analyses on the computer using the statistical software package R for your assignments. Download for free from <https://www.r-project.org/>. A more user-friendly interface can be downloaded for free from <https://www.rstudio.com>. **INSTALL R FIRST, then RStudio.** More details will be given on the course website

Exams: All exams will be closed book and closed notes. The final exam will be cumulative, but will emphasize the more recent material. For the two midterms you may be allowed to bring one standard size (8.5 × 11 inch) sheet containing formulae and for the final exam you may be allowed to bring two standard sized (8.5 × 11 inch) sheets.

NOTE: For all the exams you are allowed the use of a BASIC CALCULATOR. Exam rules will be announced in class. **No make-up exams will be administered.**

Exam	Date	Chapters Covered
Midterm I	Tentatively Wednesday, Sept. 28 th	TBA
Midterm II	Tentatively Wednesday, Nov. 2 nd	TBA
Final	Monday, Dec. 12, 8:00am-9:45am	Comprehensive

Office Hours: While questions are welcome and expected during class sessions, all students should feel free to visit during office hours for individual assistance with the course material. Questions regarding grades or scores will only be answered during office hours. Students unable to attend office hours may easily make an appointment to see the instructor at another time.

Communication Devices: Cell phones, PDAs and other communication devices must be either turned off or put on vibrate during class. Please refrain from texting during class as a courtesy to those sitting around you. All electronic devices other than a calculator must be shut off and put away during examinations.

Academic Misconduct: Although you are encouraged to work together, you are expected to produce independent work for homework and exams. Academic misconduct for any sort will not be tolerated. If students are caught indulging in dishonest activities during exams, they will be reported immediately, without any exception. Please review OSU's policies at <http://studentaffairs.osu.edu/csc/>.

Special Accommodation: Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Office of Disability Services (ODS) in Room 150 of Pomerene Hall, (614) 292-3307. Please contact the ODS as early in the semester as possible. You can also contact the instructor privately to discuss your specific needs.

Disclaimer: The schedule and procedures contained in this syllabus should be taken as a fairly reliable guide for the course content and policies. They are, however, subject to change at the instructor's discretion. Any changes will be announced in class as well as posted on Carmen.