

Attention!

This is a *representative* syllabus.

The syllabus for the course when you enroll may be **different**.

Use the syllabus provided **by your instructor** for the most up-to-date information. Please refer to your instructor for more information for the specific requirements for a given quarter.

INTRODUCTION TO STATISTICAL ANALYSIS (STAT 2450)

Autumn 2012 Syllabus – DRAFT

Instructor: Dr. Jackie Miller
Office: 419 Cockins Hall
Office Hours: TBD
Office Phone: 688-4546
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Required:

Text: *Introductory Statistics: A Problem-Solving Approach* (1st edition), by Steve Kokoska

Course Notes: *Statistics 2450 Course Notes – Autumn 2012*, by Jackie Miller

Website: Please visit carmen.osu.edu. Check Carmen periodically for announcements about the class and other class material.

Course Structure: This course is taught on the lecture-recitation system. There are two lectures and one recitation/computer labs each week. The recitation/computer labs are smaller size classes devoted to learning to use the computer software, answering questions, and going over problems and examples.

Course Goals: This course satisfies the learning goals of the GEC Data Analysis requirement, which are to develop an understanding of the basic ideas of statistical reasoning. This course seeks to encourage students to actively think about statistical issues arising in real problems and to understand the basic statistical techniques used to generate, summarize, and draw conclusions from data.

Course Objectives:

- To introduce you to methods of collecting data
 - By providing examples of methods of random sampling
 - By explaining correct procedures for designing experiments and observational studies
 - By explaining uses and misuses of sample surveys
- To enable you to use statistical tools for presentation of data and to understand presentations of data
 - By discussing when different types of graphical displays are appropriate and explaining proper methods of constructing graphical displays
 - By using appropriate summary statistics to describe the distribution of data
 - By introducing statistical terminology used to describe data and distributions
- To enable you to analyze data
 - By using simple linear regression for bivariate data
 - By constructing and interpreting confidence intervals for both a single sample and two samples
 - By conducting and interpreting hypothesis tests for both a single sample and two samples
- To enable you to understand basic probability and statistical concepts
 - By presenting and using rules of probability
 - By discussing binomial and normal probability distributions
 - By discussing sampling distributions and the use of the Central Limit Theorem as the foundation of inference
- To enable you to evaluate statistical procedures and summaries
 - By discussing assumptions and conditions for analysis procedures
 - By identifying sources of bias in sampling, experiment, and survey methods
 - By discussing appropriate nature and scope of conclusions for analysis procedures

Homework: There are a total of TBD homework assignments due at various times during the semester. Homework exercises and tentative due dates are listed at the end of the syllabus. Your lowest homework score will be dropped. It is highly suggested that you do all of the homework assignments, since practice helps with understanding. If you miss turning in a homework assignment, it will be counted as your dropped assignment, regardless of the reason.

Homework must be turned in by 5:00 PM on the due date. It is preferable to turn in your homework in recitation or lecture, but you may also drop your homework assignment in the drop box outside of 413 Cockins Hall (the box to the left of the door). **Do not drop off homework in the drop box outside of 419 Cockins Hall.** When putting homework in the drop box, make sure that “Stat 2450” and your TA’s name are on your homework. Failure to put your TA’s name on an assignment put in the drop box may result in a lost assignment. **No late assignments will be accepted.** Solutions to homework assignments will be posted on the course website.

For security reasons, when you turn in homework, you should write your name in pen on each page submitted and staple all pages together. For homework assignments submitted close to a quiz or test date, I suggest that you make a copy of your work so that you can compare your work to the posted solutions.

Points will be deducted from homework assignments for any of the following: 1) no TA name; 2) no staple; 3) “fringy things” on the edge of your paper. And, if you forget to put your name on the assignment, that might result in a score of zero, unless our detective skills are impeccable.

Homework: Homework exercises will be assigned in lecture and posted on the course website. It is highly suggested that you do all of the homework assignments, since practice helps with understanding. If you miss turning in a homework assignment, it will be counted as your dropped assignment, regardless of the reason.

Note: We will use online homework by Autumn 2012 so this section will change.

Quizzes: There will be three quizzes during the semester. Quizzes will be given during recitation. The quiz dates are listed at the end of the syllabus. Following a review session in recitation, you will be given approximately 25 minutes to take each quiz during that recitation period. Statistical tables will be provided as needed.

Exams: There will be two exams during the semester as well as a two-hour final exam. The final exam will be comprehensive with a slight emphasis on those topics covered *after* the second exam. No make-up exams will be given unless you have made arrangements with me *prior to* the beginning of the exam. One 8.5 x 11 inch sheet of paper (both sides), with whatever facts, formulas, or explanations you find helpful, may be brought to each in-semester exam. Two sheets of paper (as described for the semester exams) may be brought to the final exam. If you have a question about the grading of your exams, you may file an appeal with me. An appeal consists of a neatly written or typed note on 8.5 x 11 paper attached to your exam that explains what I should consider. All appeals must be filed with me within one week of receiving your exam back.

Exam Dates:

Exam 1: date TBD

Exam 2: date TBD

Final Exam: date TBD

Notes for use on the quizzes and exams: You may use one 3 x 5 inch note card (both sides), with whatever facts, formulas, or explanations you find helpful, on each quiz. One 8.5 x 11 inch sheet of paper (both sides), with whatever facts, formulas, or explanations you find helpful, may be brought to Exams 1 and 2. Two sheets of paper (as described for Exams 1 and 2) may be brought to the final exam.

Policy on missing a quiz or an exam: If you know ahead of time that you cannot be there for a quiz or an exam, make arrangements with your TA to take the quiz or exam prior to the date it was scheduled. If you miss a quiz or exam and have not made prior arrangements with your TA, you can request that the percent of your grade from the assessment you missed be added to the percent for your final exam. (For example, if you miss Quiz 1 and follow the instructions below, your final exam will count for $5\% + 30\% = 35\%$ of your grade.)

Note: This only applies to **one** missed quiz or exam—this does not apply to missed homework assignments and will not apply to more than one missed quiz or exam.

All requests must have valid excuses and must be submitted in writing (email is fine) as soon as possible and signed off on by me. If you do not make arrangements with me, you will receive a zero for that assessment. In other words, this will not automatically be done for you. Please recognize that making your final count for more of the course places an extra burden on you to perform well on the final exam.

Re-grade policy for quizzes and exams: If you have a question about the grading of a quiz or exam, you may file an appeal with me. An appeal consists of a neatly written or typed note on 8.5 x 11 paper attached to your quiz or exam that explains what I should consider. All appeals must be filed with me within one week of receiving your quiz or exam back from your TA.

Full credit policy: Full credit for each homework or exam problem can only be earned through showing your justification for or work on each problem. Answers without work will **not** receive full credit.

Final Grade:

Your final course grade will be based on the following weighting of assessment components:

Quiz 1	5%
Quiz 2	5%
Quiz 3	5%
Exam 1	20%
Exam 2	20%
Final exam (cumulative)	30%
Homework	10%
Recitation participation	5%

The participation portion of your grade will be determined by your TA based on both attendance at and participation in recitation.

Final course grades will be assigned based on the following grading scale:

	B+	87 – 89	C+	77 – 79	D	60 – 66	
A	93 – 100	B	83 – 86	C	73 – 76	F	below 60
A-	90 – 92	B-	80 – 82	C-	70 – 72		

Calculators: A calculator (with statistical functions) may be used for homework and exams. No cell phone calculators will be allowed during exams. (Note: This also applies to PDAs and other communication devices with calculator functions.)

StatCrunch: OSU has a site license for the software package StatCrunch. You can access StatCrunch through the course website. Your TAs will help you with StatCrunch during recitation, but you should also expect to put in time outside of recitation doing data analysis with StatCrunch for homework.

Student Responsibility: You are responsible for your own learning. I am here solely to facilitate your learning and understanding of the discipline of statistics. I will help you as much as I can, but learning the material is ultimately up to you. This includes:

- attending class meetings or getting assignments and notes from others if you miss class;
- asking questions when you have them, either in class or out of class;
- doing the assigned homework on time and participating in class; and
- contacting me if you are having difficulties.

Study Rooms and Help Hours: Our TAs hold office hours in 132 Cockins Hall starting the second week of classes. You are welcome to talk with any TA in the tutor room any time the tutor room is open. Specific hours for the tutor room and for the Statistics 2450 TAs will be posted on Carmen.

Academic Misconduct: Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. You are expected to produce original and independent work for exams. Although students are often encouraged to work together on homework assignments, all students must submit their own written work in their own words. Academic misconduct **will not be tolerated** and will be dealt with procedurally in accordance with University Rule 3335-31-02. (This policy can be found at <http://oaa.osu.edu/procedures/1.0.html>.)

Communication devices: Cell phones, PDAs, and other communication devices must be either turned off or put on vibrate during class, as these devices ringing during class disrupt the learning process. Additionally, no cell phones, PDAs, or other communication device will be allowed on any exams in the course.

E-mail Correspondence: In order to protect your privacy, all course e-mail correspondence must be done through a valid OSU name.nn account. If you have not activated your OSU email account, you can activate your account at <https://acctmgt.service.ohio-state.edu/cgi-bin/KRB1EntryAdd>.

Addressing Issues of Differing Abilities: All students who feel they may need accommodations based on the impact of a disability should contact the instructor privately to discuss their specific needs. Students with documented disabilities must also contact the Office of Disability Services (ODS) in 150 Pomerene Hall (phone: 292-3307) to coordinate reasonable accommodations for the course. ODS forms must be given to your instructor as early in the semester as possible to be filled out and returned to you.

Course Admission and Section Changes: ADD and SECTION CHANGES handled by our department staff after the SIS registration system closes. Students should go to 405C Cockins Hall and speak with Patty Shoults beginning date TBD. The instructor and TAs do not sign paperwork associated with course registration.

Course policy on unpaid fees and students not registered: If your fees are unpaid or if you are not officially registered for the course, you should not be attending class. Students with unpaid fees at the time of the first exam need to talk to me as soon as possible in order to continue their attendance. Students who are not registered in the course need to work out their registration issues in order to continue their attendance.

Drop dates: The last day to drop the course without a 'W' appearing on your record is date TBD. The last day to drop the course without petitioning is date TBD.

Receiving an 'I' for the course: You cannot receive an incomplete for the course unless 70% of the work in the course has been completed. Extenuating circumstances will be handled on a case-by-case basis.

Tentative Course Schedule – Autumn 2012 Stat 2450

Note: Lectures will be on Mondays and Wednesdays, and recitations will be on Thursdays or Fridays. Recitations will consist of activities that match the material covered in lecture and will involve a data analysis package as needed.

M	August 20	no class
W	August 22	An Introduction to Statistics and Statistical Inference
R or F	August 23/24	
M	August 27	Tables and Graphs for Summarizing Data
W	August 29	Tables and Graphs for Summarizing Data
R or F	August 30/31	
M	September 3	no classes – Labor Day
W	September 5	Numerical Summary Measures
R or F	September 6/7	
M	September 10	Numerical Summary Measures
W	September 12	Probability
R or F	September 13/14	
M	September 17	Probability
W	September 19	Random Variables and the Binomial Distribution
R or F	September 20/21	
M	September 24	Exam 1
W	September 26	The Normal Distribution
R or F	September 27/28	
M	October 1	The Normal Distribution
W	October 3	Sampling Distributions
R or F	October 4/5	
M	October 8	Sampling Distributions
W	October 10	Confidence Intervals Based on a Single Sample
R or F	October 11/12	
M	October 15	Confidence Intervals Based on a Single Sample
W	October 17	Hypothesis Tests Based on a Single Sample
R or F	October 18/19	
M	October 22	Hypothesis Tests Based on a Single Sample
W	October 24	Confidence Intervals and Hypothesis Tests Based on Two Samples or Treatments
R or F	October 25/26	
M	October 29	Exam 2
W	October 31	Confidence Intervals and Hypothesis Tests Based on Two Samples or Treatments
R or F	November 1/2	
M	November 5	One-Way Analysis of Variance
W	November 7	One-Way Analysis of Variance
R or F	November 8/9	
M	November 12	no classes – Veteran’s Day
W	November 14	Correlation and Linear Regression
R or F	November 15/16	
M	November 19	Correlation and Linear Regression
W	November 21	no classes – Thanksgiving
R or F	November 22/23	no classes – Thanksgiving
M	November 26	Categorical Data and Frequency Tables
W	November 28	Categorical Data and Frequency Tables
R or F	November 29/30	
M	December 3	Final Exam Review

Quiz and Exam Dates

Quiz 1: date TBD (in recitation or online), will cover through numerical summary measures (about September 13)

Exam 1: date TBD, will cover through probability (about September 24)

Quiz 2: date TBD (in recitation or online), will cover through sampling distributions (about October 11)

Exam 2: date TBD, will cover through inference for a single sample (about October 29)

Quiz 3: date TBD (in recitation or online), will cover through one-way analysis of variance (about November 15)

Final Exam: date TBD, cumulative

Homework Assignments and Tentative Due Dates

TBD