

STA 1013: Statistics by Example

Fall 2012, Section 11

Tuesday and Thursday, 8:00 AM to 9:15 AM, Huge Classroom Building (HCB) 205

Prerequisites: none

Instructor:

Name: Ajay Gupta

Office: Oceanography & Statistics Building (OSB) 104F

Walk-In Office Hours: held in computer lab in Carothers (MCH) 315, Monday 2:00 to 3:00 PM, Tuesday 4:00 to 7:00 PM, Thursday 4:00 to 7:00 PM

E-Mail: ajgupta@stat.fsu.edu

E-Mail Policy: Check your my.fsu.edu E-mail every day to stay aware of updates to class meetings and assignments. If you send the instructor E-mail, include your full name and "STA 1013-07" in the E-mail. You should expect a reply (if one is necessary) within 48 hours of the E-mail being delivered.

Materials and Resources:

(Optional) Textbook: Bennett, Briggs and Triola, *Statistical Reasoning for Everyday Life*, 3rd Edition, 2008, ISBN-10: 0321286723, ISBN-13: 978-0321286727

Course Website: <http://stat.fsu.edu/~ajgupta/1013/>

Blackboard: Class notes, assignments, and grades will be available at campus.fsu.edu, where you should log in using your FSUID and find Statistics by Example (STA 1013) under the Courses section. Printing the class notes during the weekend for the coming week and bringing them to class is suggested.

Tutoring: Free tutoring is available at specified hours at a table on the first floor of Strozier Library. These hours are available at <http://stat.fsu.edu/helproom>. Private tutoring is also available from graduate students in the statistics department. Details vary and are determined by these students. A list of private tutors can be found somewhere at <http://stat.fsu.edu/academics>.

Calculator: No calculator is required. All calculators and computer programs are permitted during Blackboard quizzes and homework. None are permitted during quizzes taken during class and exams.

Formula Sheet: No formula sheets (cheat sheets) are allowed during quizzes taken during class or during exams. All notes are allowed during Blackboard quizzes.

Course Content:

This course will provide students a background on common applied statistical techniques for problem-solving in business and research settings. It will focus on making sure that students know what techniques are available, what the point of these techniques is, when to use them, and how to tell what the results mean for a business or research problem. Some calculation will be involved, but less than in other applied statistics classes.

At the end of this course, a student should be able to do the following:

- Explain what a statistic is, what a parameter is, and what these have to do with the problem for various situations on the job
- Explain what a probability distribution is and how it relates to specific situations on the job
- Apply proper techniques for creating samples and research studies
- Use summary statistics and graphs to draw conclusions about data
- Calculate common statistics that describe the center, position, and variation of data
- Produce and interpret regression lines and regression equations
- Calculate and interpret confidence intervals for averages and proportions of unknown quantities
- Set up, calculate, and interpret significance tests for averages, proportions, and two-way tables

Tentative Schedule:

The following schedule is subject to update and refers to sections of the course textbook. For more information, please see the lecture notes on Blackboard.

Date	Tuesday	Date	Thursday
Aug. 28	4.1: medians 4.3: percentiles, quartiles, five-number summaries, ranges, interquartile ranges	Aug. 30	Activity: boxplots 4.3: boxplots quiz in class
Sep. 4	4.1: means, modes	Sep. 6	4.1: outliers 4.3: sample standard deviations quiz on Blackboard
Sep. 11	1.1: parameters, statistics, populations, samples	Sep. 13	8.2: confidence intervals of means quiz in class
Sep. 18	2.3: percentages, proportions 6.2: probability 6.5: intersections, unions	Sep. 20	6.2: random variables, probability distributions quiz on Blackboard
Sep. 25	6.5: independence	Sep. 27	3.1: frequencies quiz in class
Oct. 2	2.1: data 5.1: normal distributions 5.2: cumulative distribution functions, normal distributions	Oct. 4	8.2: confidence intervals of proportions quiz on Blackboard
Oct. 9	review for Exam 1	Oct. 11	Exam 1
Oct. 16	3.2: bar charts, histograms, Pareto charts, stemplots 3.3: 3D graphs 4.2: distribution modes, skewness, symmetry	Oct. 18	5.3: Central Limit Theorem 8.1: sampling distributions quiz on Blackboard

Date	Tuesday	Date	Thursday
Oct. 23	1.3: observational studies vs. experiments 7.1: correlation 7.3: regression	Oct. 25	7.1: scatterplots 7.2: regression problems quiz in class
Oct. 30	9.1: significance tests 9.2: significance tests of means	Nov. 1	9.2: significance tests of means 10.1: <i>t</i> distribution quiz on Blackboard
Nov. 6	9.2: significance tests of means 9.3: significance tests of proportions	Nov. 8	9.3: significance tests of proportions quiz in class
Nov. 13	10.2: significance tests with two-way tables	Nov. 15	10.2: significance tests with two-way tables quiz on Blackboard
Nov. 20	review for Exam 2	Nov. 22	no class: Thanksgiving
Nov. 27	review for Exam 2	Nov. 29	Exam 2
Dec. 4	1.2: sampling design 1.3: research study design	Dec. 6	6.3: Law of Large Numbers, independence and streaks 3.2: line charts, pie charts, time-series diagrams 3.3: combination charts quiz in class

All exams except the final exam will be held from during the class period in the classroom (HCB 205).

Final Exam:

The final exam will be held Tuesday, Dec. 11, from 10:00 AM to 12:00 PM, in the classroom (HCB 205).

Grading:

Percentage points will be converted to letter grades as follows:

A	90-100	B+	85-87	B-	72-75	C	56-70	D+	50-53	D-	38-40
A-	87-90	B	75-85	C+	70-72	C-	53-56	D	40-50	F	0-38

Percentage points are not rounded, but points exactly on a boundary will earn the higher of two grades from the table above. For example, 75% will be a B, and 74.99% will be a B-.

Components of Grade:

Activities: 5%, Attendance: 5%, Exam 1: 10%, Exam 2: 10%, Final Exam: 20%, Homework: 20%, Quiz 1: 2%, Quiz 2: 3%, Quiz 3: 2%, Quiz 4: 3%, Quiz 5: 2%, Quiz 6: 3%, Quiz 7: 3%, Quiz 8: 2%, Quiz 9: 3%, Quiz 10: 2%, Quiz 11: 3%, Quiz 12: 2%

Activities:

Students will be assigned a worksheet to complete in class, either individually or with a group, for each of two class periods. The instructor will assign the student a grade of Present and Participating (100%), Present and Not Participating (50%), or Absent (0%).

Attendance:

The instructor will bring an attendance sheet for students to sign in for all classes except those with exams. All classes are equally weighted, and the student must sign the sheet to receive credit (100%). If the student is not present or does not sign the sheet, he or she will receive 0% for that attendance sheet.

Homework:

Homework will be assigned on Blackboard and due the day after the relevant class at 11:00 PM. The student can resubmit the homework any number of times before the deadline without a penalty.

The student also has the opportunity to do an identical homework assignment on Blackboard, which will earn 50% of the credit that would have been earned. These are due by the time of the final exam.

Students can work with others on homework, but must submit the answers themselves. Students are allowed to use calculators, computer programs, the Internet, notes, and textbooks on homework.

Exams:

Exams will be given in place of lecture twice, and once as the final exam. The source for the material on the exams will be the homework on Blackboard and most recent versions of the lecture notes and activities posted on Blackboard. The final exam is cumulative. Students are to work alone during exams, and will not be allowed to use any notes, formula sheets, or calculators.

All questions on an exam are given equal weight for that exam.

Quizzes:

Quizzes occasionally will be assigned on Blackboard and due the Sunday after the relevant classes at 11:00 PM. A student has one submission allowed. Students are to work alone during these quizzes, and are allowed to use calculators, computer programs, the Internet, notes, and textbooks on these Blackboard quizzes.

Quizzes will occasionally be given in class on Thursdays. Students are to work alone during these quizzes, and will not be allowed to use any notes, formula sheets, or calculators.

All questions on a quiz are given equal weight for that quiz.

Curving of Exams and Quizzes:

All exams and quizzes will be curved using the same procedure, applied to the scores from the original sittings of this section and Section 7 combined.

- Calculate the amount that the third quartile is less than 95%.
Use 0% if the third quartile is greater than 95%.
- Calculate the amount that the median is less than 90%.
Use 0% if the median is greater than 90%.

- Calculate the amount that the first quartile is less than 85%.
Use 0% if the median is greater than 85%.
- Add the three amounts above together after doubling the largest, and divide by 4.
- Add the new amount from the division to all scores. Scores above 100% are acceptable.

Policies:

Attendance: First-day attendance is mandatory, by university rules. Missing the first day will result in a student getting dropped from the class. Afterward, attendance is not required except that students will get 0% for grades such as participation that arise during that missed class.

Lateness: Please attempt to come in quietly if arriving late. No extra time will be allotted to students who arrive late to an exam or quiz. Homework will have a specific due date and time for submission on Blackboard. This due date and time will be on the assignment.

Missing Grades and Grade Appeals: Students are responsible for checking their grades on Blackboard, and providing notice of a missing grade or a written statement appealing the grade within 6 days of the grade posting.

Extra Credit: There is no extra credit.

Academic Honor Code:

Students are expected to uphold the Academic Honor Code published in The Florida State University Bulletin and the Student Handbook. The Academic Honor System of The Florida State University is based on the premise that each student has the responsibility (1) to uphold the highest standards of academic integrity in the student's own work, (2) to refuse to tolerate violations of academic integrity in the university community, and (3) to foster a high sense of integrity and social responsibility on the part of the university community.

Students with Disabilities:

Students with disabilities needing academic accommodation should; (1) register with and provide documentation to the Student Disability Resource Center; (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center, Dean of Students Department
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850)644-9566 (voice)
(850) 644-8504 (TDD)
SDRC@admin.fsu.edu

Syllabus:

This syllabus is subject to change with advance notice. The most recent copy of the syllabus can be found on the class website.