

INQ 240, Fall 2017: Statistics and the Music Industry

Instructor	Joseph Slagel Email: slagel@roanoke.edu Office: Trexler 161C
Class Meetings	INQ240-F2 TR 6:15-7:45PM Trexler 374
Office Hours	By Appointment
Course Information	This is a course in learning how to obtain and interpret results obtained from sets of data by using techniques of statistics. This class will introduce to you the methods of collecting, organizing, and presenting data. You will also study various quantitative measures for data and will study how to draw conclusions and make inferences from that data. Some probability will also be discussed as a precursor to the “inferential” statistics.
Intended Learning Outcomes	By the end of this course, successful students will be able to: <ul style="list-style-type: none">• use the methodologies of statistics to investigate a topic of interest and make decisions based on the results,• use the methodologies of statistics to design and carry out a simple statistical experiment,• use the methodologies of statistics to critique news stories and journal articles that include statistical information. In the critique students will recognize variability and its consequences, identify potential sources of bias and both proper and improper cause and effect inference,• articulate the importance and limitations of using data and statistical methods in decision making,• write about course topics clearly and effectively, and• interpret quantitative information related to the course topic.
Required Materials	Textbook: <i>Introductory Statistics</i> , by Barbara Illowsky, Susan Dean, etc; free, online text from OpenStax: https://cnx.org/contents/30189442-6998-4686-ac05-ed152b91b9de Technology: Minitab Express (\$15, download 6-month rental from www.onthehub.com/minitab) Calculators: Any scientific calculator to perform calculations Other: Other readings will be provided as needed

Course Grades The following table lists the weights for the various forms of assessment for this class.

Activities & Homework Quizzes	15%	Tests	30%
Projects	35%	Final Exam	20%

A grade scale will be determined after final grades are computed, but will be no worse than the scale given below:

		B+	87-89	C+	77-79	D+	67-69		
A	93-100	B	83-86	C	73-76	D	63-66	F	0-59
A-	90-92	B-	80-82	C-	70-72	D-	60-62		

Homework Homework will be assigned on a daily basis. There will be a weekly homework quiz that asks a selection of the problems assigned. The homework quizzes are closed note quizzes. At the end of the semester, each student's lowest 3 quiz scores will be dropped.

Reading Daily reading of assigned sections from our textbook is expected. You should come to class prepared to discuss the material that you have read. You can find an approximate schedule for the sections we will cover on the last page of this syllabus, but reading will also be announced in class and posted on Inquire. Readings from other sources will be assigned as appropriate.

Tests There will be three tests; the tests will focus primarily on the statistics content of this course, but will emphasize critical thinking and writing! Homework and class notes are absolutely the best sources of review! The tests will not be designed to be cumulative, but as with any course involving mathematics, material from previous tests can be thought of as a prerequisite for future tests.

Other Assignments There will be three major projects in this class that are designed to allow some freedom for you to explore the connection between statistics and the music industry.

The first of these assignments will be early in the semester. The form will be a paper (roughly 2-3 pages) focusing on critiquing the use of descriptive statistics in an assigned article and discussing potential bias and other issues in the described study.

The second of these assignments will be discussion based on the course's inquire page. You will have to find articles about the music industry that use statistics and reflect on the purpose and validity of the article. You will have to reflect and respond to your peers reflections. (3 posts, roughly 200 words each)

The third assignment will a reflective written assignment at the end of the semester. This assignment will be similar to the first in that you will reflect on how statistics from a study are used in 2-3 articles; however, you will be in charge of finding articles relating to the music industry and statistics that you find interesting.

Final Exam **The final exam will be comprehensive, and will be given during the scheduled time for 6:30-9:30 PM on Tuesday, December 12.** As with the tests, it will also emphasize critical thinking and writing. The best way to review for the final is to review your performance on the three tests; focus on material that you did not master the first time around, and review the topics that you did master.

Attendance &
Make-Up Work

Attendance is critical to the understanding of the material in the course; it is both required and expected. Any absence that is not discussed with the instructor prior to the missed class is considered unexcused. When absent, excused or unexcused, you are responsible for all material covered in class. **You will not be allowed to make up any work missed due to an unexcused absence.** This course expects you to spend **at least 12 hours** on work each week inside and outside of class.

Disability
Support Services

The Office of Disability Support Services, located in the Goode-Pasfield Center for Learning and Teaching in Fintel Library, provides reasonable accommodations to students with identified disabilities. Reasonable accommodations are provided based on the diagnosed disability and the recommendations of the professional evaluator. Please contact JoAnn Stephens-Forrest, MSW, Coordinator of Disability Support Services, at 540-375-2247 or e-mail her (stephens@roanoke.edu) to schedule an appointment. If you have registered with DSS in the past, and would like to receive academic accommodations for this semester, please contact Ms. Stephens-Forrest at your earliest convenience, to schedule an appointment. Also, please note that arrangements for extended time on exams, testing, and quizzes in a distraction-reduced environment must be made at least 48 hours before every exam.

Academic
Integrity

Students are expected to adhere to the Academic Integrity policies of Roanoke College. All work submitted for a grade is to be your own work! Note that any electronic devices used during exams must be first okayed by your instructor (me), and used only in an appropriate manner, which is decided by your instructor (me).

Writing Center

Roanoke College's Writing Center is located on the Lower Level of Fintel Library and offers writing tutorials focused on written and oral communication for students working on writing assignments/projects in any field. Writers at all levels of competence may visit the Writing Center at any point in their process, from brainstorming to drafting to editing, to talk with trained peer tutors in informal, one-on-one sessions. The Writing Center is open Sunday through Thursday from 4 to 9 pm. Simply stop in, or schedule an appointment by going to www.roanoke.edu/writingcenter, where our schedule of writing workshops and creative writing playshops is also posted. Questions? Email writingcenter@roanoke.edu or call 375-4949. Like our Facebook page for updates!

Subject Tutoring

Subject Tutoring is a CRLA Nationally Certified Program located on the lower level of Fintel Library in room 005. Subject Tutoring offers individual appointments in 30-minute intervals for Lab Sciences, Modern Languages, Math and CPSC, Social Sciences, Business and Economics. Hours are Sunday - Thursday 4 p.m. - 9 p.m. For a list of tutorials or to make an appointment, go to www.roanoke.edu/tutoring.

Course Schedule The following schedule is approximate and subject to change.

Tue	Aug 29	Ch 1	Experimental vs Observational Studies
Thu	Aug 31	Ch 1	Experimental Design Project 1 assigned
Tue	Sept 5	Ch 1/2	Data Collection/ Visual Statistics
Thu	Sept 7	Ch 2	Visual & Descriptive Statistics
Tue	Sept 12	Ch 2	Descriptive Statistics Project 1 due
Thu	Sept 14	Ch 3	Intro to Probability
Tue	Sept 19	Ch 3	Probability cont.
Thu	Sept 21	Ch 4/5	Random Variables/ Normal Distribution
Tue	Sep 26	Ch 5/6	Random Variables/ Normal Distribution
Thu	Sep 28	Ch 6	Random Variables/ Normal Distribution Project 2 assigned
Tue	Oct 3		Review
Thu	Oct 5		Test 1 (Ch 1, 2, 3, 4, 5, 6)
Tue	Oct 10	Ch 2/7	Sampling Distributions
Thu	Oct 12	Ch 7	CLT & Law of Large Numbers First Inquire posts due
Fall Break			
Tue	Oct 24	Ch 8	Intro to Inference
Thu	Oct 26	Ch 8 & 9	Intro to Hypothesis Testing
Tue	Oct 31	Ch 9	1-Sample Tests.
Thu	Nov 2	Ch 10	2-Sample Tests
Tue	Nov 7		Review
Thu	Nov 9		Test 2 (Ch 7, 8, 9, 10)
Tue	Nov 14	Ch 11	Chi-Square
Thu	Nov 16	Ch 13	ANOVA Project 2 due Project 3 assigned
Thanksgiving Break			
Tue	Nov 28	Ch 12	Scatterplots
Thu	Nov 30	Ch 12	Regression
Tue	Dec 5		Review
Thu	Dec 7		Test 3 (Ch 11, 12, 13) Review Project 3 due
Tues	Dec 12		Final Exam: 2-5PM