

INQ 240 A2-A4: Here's to Your Health!

Instructor: Michael Weselcouch

Office: Trex #175

Office Hours: MW 1:00 - 2:00 and TR 11:00 - 12:00 or by appointment. All Office Hours are on Zoom.

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Course Description. This course is an introduction to statistical reasoning and basic statistics techniques focusing on the examples and data sets dealing with health related issues. You will learn how to collect, organize and present data and study quantitative measures which will allow you to draw conclusions and make inferences from the data. Some probability will be discussed as a precursor to the “inferential” statistics.

Attendance Policy and Hybrid Structure. Students will be grouped into four groups of roughly equal size. In each class session, two of the four groups will attend in person and the other two will attend via Zoom. There is a schedule posted on Inquire that tells you what days your group attends class in person. On test days, we will not meet in person. Class attendance is expected. If you do have to miss class, you are responsible for learning all material covered that day. If you have to miss class and have not discussed your absence with me beforehand, you will be unable to make up any work missed.

Culture of Care. Masks are absolutely, without a doubt, 100% required while attending class in person. If you have a temperature of 100.4 or higher or other coronavirus symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. Do keep up with all readings, assignments, and deadlines. In order for your absence to be excused, you must give Health Services permission to notify me that you have consulted them about coronavirus symptoms. If Health Services informs you that you should isolate and not attend class for multiple days or weeks, inform me so that we can make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused.

Learning Outcomes. By the end of this course, successful students will be able to:

- 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
- articulate the importance and limitations of using data and statistical methods in decision making

- express themselves clearly and effectively in writing using the concepts and language of statistics
- articulate the importance of the methodologies of statistics for understanding health related issues

Course Materials.

- (1) *Textbook: Essential Statistics* Moore
- (2) *Calculator:* A scientific or graphing calculator is recommended but not required.
- (3) *Minitab:* a statistical software package available at <https://forms.roanoke.edu/minitab-license>.
- (4) *Classroom Stats:* a data collection and analysis application for your smart phone available at <https://www.classroomstats.com>
- (5) *YouTube:* I will be posting supplementary videos to my YouTube channel.

Structure and Grading. A grade scale will be determined after final grades are computed, but will be no worse than the scale given below. Attendance and class participation will be considered when determining marginal grades.

Grading Scale

	93-100 A	90-92.99 A-
87-89.99 B+	83-86.99 B	80-82.99 B-
77-79.99 C+	73-76.99 C	70-72.99 C-
67-69.99 D+	63-66.99 D	60-62.99 D-

The final course grade is determined in the following way:

Quizzes	10%	Final Project	15%
Homework	5%	Tests	40%
Written Assignments	15%	Final Exam	15%

Quizzes. There will be a short quiz almost every Friday after class. The quiz will be posted to the class Inquire page. No make-up quizzes will be given, instead your lowest quiz grade will be dropped at the end of the semester.

Homework. Homework problems will be collected the day they are due and checked for completion. Solutions must be submitted as a PDF to the class Inquire page to receive credit. This work will only be accepted on the day it is due. No late papers will be accepted without arrangements approved prior to absence OR without written documentation from a college official.

MCSP Conversations. The MCSP department offers a series of talks designed to appeal to a broad audience. Members of this class are encouraged to attend many of these meetings, however attending at least one session is mandatory. Within one week of attendance you must submit a response to the talk. This will count as one quiz grade.

Written Assignments. There will be three writing assignments on health-related statistical topics. More specific instructions will be given for each piece when it is assigned. See the course schedule for due dates.

Final Project. In small groups you will perform your own statistical study: ask a health-related question, gather and analyze data to answer it, and form conclusions based on your analysis. More specific instructions will be given when the project is assigned.

Tests. There will be four tests this semester; the tests will focus primarily on the statistics content of this course but will emphasize critical thinking and writing! The class will not meet in person on test days. Your solutions must be submitted as a PDF to the class Inquire page by the end of the class period. 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.

Test #1: Wednesday, September 9, covering Chapters 1-5

Test #2: Wednesday, September 30, covering Chapters 7 - 12

Test #3: Friday, October 23, covering Chapters 13, 14, 16 - 19

Test #4: Monday, November 9, covering Chapters 21 - 23

Final Exam (8:30 class): Tuesday, November 24 8:00 AM

Final Exam (10:50 class): Friday, November 20 8:00 AM

Final Exam (12:00 class): Thursday, November 19 8:00 AM

Test Make-up Policy. Test make-ups are administered in accordance with College policy. Anticipated, excused absences must be reported to the instructor with appropriate certification *well before* the scheduled test date. Legitimate emergency absences must be reported with appropriate documentation within one week of returning to class. No other make-ups will be given.

Corrections to Grading. If you think an error may have been made in the grading of your test, carefully review the answer key posted on Inquire and then contact the instructor **within 1 week of the test's return** with your question. **Do NOT alter the original work.** The entire test may be re-graded and the test grade is *subject to remain the same, increase or decrease* at the discretion of the instructor.

Final Exam. The final exam will be comprehensive. It will be taken in person. As with the tests, it will emphasize critical thinking and writing. The best way to review for the final is to review your performance on the four tests; focus on material that you did not master the first time around and review the topics that you did master.

Expected Work Policy. This course expects you to spend at least 12 hours of work each week inside and outside of class.

Electronic Devices. You can use only your calculator during class unless we are using Classroom Stats. (This means no cell phones - please set them on silent and leave them in your bag.)

Inquire Policy. Students are required to be knowledgeable of all postings on Inquire. It is each student's responsibility to consistently monitor Inquire for course information. This

means every day! Any assignment that requires an Inquire upload will not be accepted in any other form. Also, to receive credit for uploads, the file must be a PDF and readable on the instructor's college computer. It is the student's responsibility to make successful submissions. It is the student's responsibility to resolve technology problems through the college's IT department.

Academic Integrity. I expect all of you to follow the Academic Integrity policies of Roanoke College. All graded work should be your own work! If you ever have questions about how these policies apply to our class please contact me. Any violations of our AI policies will automatically be turned over to the Academic Integrity Council.

Accommodations. If you may require an accommodation in this course, please provide me with your documentation within the first 2 weeks of the semester. I must have your documentation at least 48 hours prior to any accommodation made. (Check with the Center for Learning and Teaching for their scheduling guidelines.)

Tentative Course Schedule. The following schedule is approximate and subject to change except for the test dates. It should give you an idea of the timing of the topics covered and assignments.

Week	Dates	Lecture Material	Assignments
1	8/19 - 8/21	Chapter 1	
2	8/24 - 8/28	Chapter 2, 3	Writing 1 Assigned
3	8/31 - 9/4	Chapter 4, 5	Writing 1 Due (9/2)
4	9/7 - 9/11	Chapter 7	Test #1 (9/9)
5	9/14 - 9/18	Chapter 8, 9	Writing 2 Assigned
6	9/21 - 9/25	Chapter 10, 11	Writing 2 Due (9/21)
7	9/28 - 10/2	Chapter 12, 13	Test #2 (9/30)
8	10/5 - 10/9	Chapter 14, 16	Writing 3 Assigned
9	10/12 - 10/16	Chapter 17, 18	Writing 3 Due (10/16)
10	10/19 - 10/23	Chapter 19	Test #3 (10/23)
11	10/26 - 10/30	Chapter 21	Final Project Assigned (10/26) Final Project Group/Topic Due (10/28)
12	11/2 - 11/6	Chapter 22, 23	Final Project Data Due (11/2)

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13	11/9 - 11/13	Review	Test #4 (11/9)
14	11/16	Review	Final Project Due (11/16)
A4	11/19	8:00 - 12:00	Final Exam
A3	11/20	8:00 - 12:00	
A2	11/24	8:00 - 12:00	