

STAT 599 / SCHC 489, History of Probability and Statistics – Spring 2023

Instructor:

David Hitchcock, associate professor of statistics
215C LeConte College
Phone: 803-777-5346
Email: hitchcock@stat.sc.edu
Course Web Page: <http://people.stat.sc.edu/hitchcock/stathistory.html>
(Also accessible via Blackboard)

Classes: Meeting Times: MW 2:20 pm – 3:35 pm, Close-Hipp, Room 502

Office Hours: Mon 9:30-10:30 am, Tues 10:30 - 11:30 am, Wed 9:30-10:30 am, Fri 9:30-10:30 am, or **please feel free** to make an appointment to see me at other times.

Textbook: Required readings will be posted in Blackboard.

Prerequisite: At least one previous course in statistical methods.

Course Description: The course will explore the history of probability and statistics, from the early development of the theory of probability (motivated by gambling strategies) by Blaise Pascal, to the acceptance of statistics as a formal science in the 20th century, to the development of modern computing power and its effect on statistical techniques in the late 20th century and early 21st century. Emphasis will be placed on both statistical ideas and theories that have been introduced throughout history and the people who pioneered them, with lots of anecdotes about personalities and biographies of important statisticians and conflicts between statisticians who held different views of the purpose of statistical inference. Much of the assessment of student work will be based on readings, in-class discussions, and quizzes. There will also be group projects about statistical ideas and people and oral presentations that students will make in class.

Learning Outcomes: Upon successful completion of this course, students should be able to:

- Understand the scope of the history of probability and statistics and the development of key ideas in statistics
- Understand important people and broad movements in the history of probability and statistics
- Communicate through discussions, written reports, and oral presentations their insight into selected aspects of the history of probability and statistics

During Class: No cell phones may be on during class. No laptops may be used during class. Tablets (e.g., iPads) may be used only for note-taking, only if flat on the desk like a traditional notebook. Use of technology should be limited and not take students' focus away from the class discussion.

Exams: There will be just one exam, a final exam on Wednesday, April 26 at 12:30 p.m. This will be an in-class exam covering basic facts and important ideas that we have learned throughout the course. The style of the exam is planned to be a combination of multiple-choice and short answer questions.

Readings: Starting with the second class day, you will be required to come to class prepared by having done the readings on that day's topic (sometimes the amount of reading may be plentiful). This is NOT optional! If you do not do the readings, you will not be successful on the daily quiz, and you will not be able to participate effectively in the class discussion.

Quizzes: Starting with the second class day, there will be an in-class multiple-choice quiz at the beginning of the class period related to basic facts and big ideas from that day's required reading. The purpose of these quizzes is to make sure you do the readings ahead of time and come to class prepared. In addition, after class you will be able to do the same quiz on Blackboard. Both quiz scores will count toward your quiz average. The lowest three of the in-class quiz scores (including missed quizzes, if any, as part of these three lowest quiz scores) will be dropped before calculating the quiz average.

Attendance: You are expected to attend class every day. Since this is a discussion-based class, it is not the type of course in which you can learn the material on your own without coming to class. Since a few emergencies or unavoidable absences may come up, a small number of in-class quizzes will be dropped from the quiz average (see above). But if you know that attending all or nearly all of the class sessions in person is not something you will do, then you should look for a more suitable class for your situation. If you have an extended illness that prevents you from attending class, then written documentation from the university is required and we will work out an accommodation for such an exceptional situation. Excused absences, as defined by the university here: https://sc.edu/about/offices_and_divisions/faculty_senate/faculty-toolbox/documents/attendance_policy_approved_for_21_22.pdf should be discussed with the instructor ahead of the class meeting.

Class Participation: Students will be given a grade for every two-week period that will reflect the quantity AND quality of the participation in class (not only attendance, but spoken comments in the discussions), supplemented by the Blackboard Discussion Forum. The participation grades will be determined by the instructor, based on a rubric adapted from “Grading Class Participation”, Prof. Martha L. Mazneveski, Newsletter of the Teaching Resource Center for Faculty and Teaching Assistants, University of Virginia, Spring 1996):

0: Absent (unexcused)

1: Tries to respond when called, but does not offer much. Demonstrates very infrequent involvement in discussion

2: Demonstrates adequate preparation. Offers straightforward information without elaboration. Demonstrates sporadic involvement in discussion

3: Demonstrates good preparation. Offers interpretation and analysis. Responds to other students constructively. Demonstrates consistent ongoing involvement

4: Demonstrates excellent preparation. Offers analysis and synthesis. Puts together pieces of the discussion to develop new approaches.

No Grade: Absent due to a university-approved “excused absence” WITH documentation

This score will be assigned based on participation in class discussions and on the Blackboard Discussion Forum, in which students can discuss the readings before class, address topics we covered in class, etc.

Projects: There will be a required group project that will be worked on outside of class during the semester and will be completed near the end of the semester. Groups should discuss their project topics ahead of time with the instructor; examples of possible topics include an extended biography of a statistician or a report on some topic relevant to the history of probability and statistics. Students will turn in a typed project report as a group, and groups will make an oral presentation to the class near the end of the semester. The last few class periods will be devoted to the groups’ oral presentations.

Honors and Graduate Credit: This course has an honors section (SCHC 489) that meets with the STAT 599 section. Any student in the honors section will be required to complete an additional research paper / extended essay on a topic that relates some aspect of the history of statistics to event(s) in the history of the world/culture outside of statistics. (I will give more information about this separately to these students.) This will be due near the middle of the semester. Any students enrolling in STAT 599 for graduate credit will also do this essay/paper. This will count as 12% of the course grade for honors enrollees and graduate students, with the other course grade components being scaled proportionally.

Honor Code: Every student has a role in maintaining the academic reputation of the university. It is imperative that you refrain from engaging in plagiarism, cheating, falsifying your work and/or assisting other students in violating the Honor Code.

Disabilities: Any student with a documented disability should contact the Student Disability Resource Center at 777-6142 to make arrangements for appropriate accommodations.

Grading: The course grade will be based on in-class quiz average (20%), Blackboard quiz average (20%), final project (15% for report, 10% for in-class presentation), class participation average grade (10%), and the final exam (25%). The overall course average will result in the following grades: 90-100 = A, 87-89 = B+, 80-86 = B, 77-79 = C+, 70-76 = C, 67-69 = D+, 60-66 = D, 59 and below = F.