



EMORY

ROLLINS
SCHOOL OF
PUBLIC
HEALTH

DEPARTMENT: BIOS

COURSE NUMBER: 780R

SECTION NUMBER:

CREDIT HOURS: 1

SEMESTER: Spring 2019

COURSE TITLE: Research Methods in Biostatistics

CLASS HOURS AND LOCATION:

F 11:00 – 11:50 AM in CNR 1045

INSTRUCTOR NAME: Benjamin (Ben) Risk

INSTRUCTOR CONTACT INFORMATION

EMAIL: benjamin.risk@emory.edu

PHONE: (404) 712-5081

SCHOOL ADDRESS OR MAILBOX LOCATION:

OFFICE HOURS TBD

Teaching Assistant(s): N/A

COURSE DESCRIPTION

The goals of this course are 1) to provide practical skills and knowledge to complete a PhD dissertation in biostatistics and 2) to introduce students to the research of BIOS faculty. Students will become familiar with the process of PhD research in biostatistical methods. Several topics will be covered including reading academic articles, writing tools and techniques, presentation skills, professional ethics, conducting collaborative research, and high performance computing. Lectures will include presentations by faculty giving an overview of their research with the aim of helping students choose a dissertation advisor and research area.

MPH/MSPH FOUNDATIONAL COMPETENCIES:

BMPH6: Communicate the results of statistical analyses to a broad audience.

CONCENTRATION COMPETENCIES:

This course will address the following competencies:

BPhD1: Conduct independent research in the fields of biostatistics and its application.

BPhD2: Develop and assess new statistical theory as needed.

BPhD3: Develop and assess new statistical methods to address a broad range of complex biomedical or public health problems.

EVALUATION

Participation (35%) Students are expected to attend all lectures and arrive on time. Students are encouraged to ask questions and participate in discussions. The use of cellphones and inappropriate use of computers will lead to a lower participation score. It is expected that most students will receive full participation points.

Report (35%) Students are asked to select a paper from the statistical literature and write a report that critiques and summarizes the contributions including at least 4 pages of double-spaced 12 pt font in latex plus additional pages for figures, tables, and references. For a list of possible journals, see the statistical journals from the first lecture. The figures and tables can be included using screen capture or reproduced. Note that understanding a paper involves examining the important papers it cites.

I will provide feedback on the reports, and students will incorporate comments and submit a revised version.

Presentation (30%) Students will give a twenty-minute presentation to the class summarizing the article. The presentations should be prepared using beamer. Student presentations will be treated like a conference session, in which a student will serve as chair, introduce the speaker, facilitate a short question and answer session (2-3 minutes), and keep speakers on time.

Grading: A (93-100), A- (90-92), B+ (87-89), B (83-86), B- (80-82), C (60-79), F (<59).

COURSE STRUCTURE

The first half of the class will include lectures and discussions on professional ethics, conducting collaborative research, high performance computing, writing tools and techniques, and presentation skills. The second half of the course will include presentations by BIOS faculty giving an overview of their research with the aim of helping students choose a dissertation advisor and research area.

MPH/MSPH Concentration Competencies assessed	Representative Assignment
Communicate the results of statistical analyses to a broad audience	1. Article Report 2. Article Presentation

PhD Concentration Competencies assessed	Representative Assignment
BPhD1: Conduct independent research in the fields of biostatistics and its application.	1. Article Report
BPhD2: Develop and assess new statistical theory as needed.	1. Article Report
BPhD3: Develop and assess new statistical methods to address a broad range of complex biomedical or public health problems.	1. Article Report

COURSE POLICIES

Attendance:

Students are expected to attend all lectures and arrive on time.

Course participation:

Students are encouraged to ask the instructor questions during the lectures. Students are encouraged to participate in discussions as prompted during lecture.

Assignment submission and policies:

The article critique should be submitted electronically in pdf form through Canvas and the versions are due prior to the start of class on the due dates. 20% of the grade will be deducted for late homework, and no submissions will be accepted after 3 days.

Plagiarism:

The write-ups *must reflect the student's own work*. The article critique cannot include text from the original article, and students must rephrase important concepts in their own words. Students violating this policy will receive a 0 be faced with possible disciplinary action by the Student Honor and Conduct Code Council. See honor code below. For examples of plagiarism, see <http://sja.ucdavis.edu/files/plagiarism.pdf>.

Assignment submission:

PDF copies of assignments and exams are to be submitted electronically via Canvas.

Technology in the classroom:

Students are not allowed to use cell phones during lectures. Students are not allowed to use computers for anything not directly related to the lecture. Inappropriate use of technology is disrespectful.

Textbooks: there is no required textbook. Readings will be posted on Canvas.

As the instructor of this course I endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me and the Office for Equity and Inclusion, 404-727-9877.

RSPH POLICIES

Accessibility and Accommodations

Accessibility Services works with students who have disabilities to provide reasonable accommodations. In order to receive consideration for reasonable accommodations, you must contact the Office of Accessibility Services (OAS). It is the responsibility of the student to register with OAS. Please note that accommodations are not retroactive and that disability accommodations are not provided until an accommodation letter has been processed.

Students who registered with OAS and have a letter outlining their academic accommodations are strongly encouraged to coordinate a meeting time with me to discuss a protocol to implement the accommodations as needed throughout the semester. This meeting should occur as early in the semester as possible.

Contact Accessibility Services for more information at (404) 727-9877 or accessibility@emory.edu. Additional information is available at the OAS website at <http://equityandinclusion.emory.edu/access/students/index.html>

Honor Code

You are bound by Emory University's Student Honor and Conduct Code. RSPH requires that all material submitted by a student fulfilling his or her academic course of study must be the original work of the student. Violations of academic honor include any action by a student indicating dishonesty or a lack of integrity in academic ethics. *Academic dishonesty refers to cheating, plagiarizing, assisting other students without authorization, lying, tampering, or stealing in performing any academic work, and will not be tolerated under any circumstances.*

The RSPH Honor Code states: "Plagiarism is the act of presenting as one's own work the expression, words, or ideas of another person whether published or unpublished (including the work of another student). A writer's work should be regarded as his/her own property."

(http://www.sph.emory.edu/cms/current_students/enrollment_services/honor_code.html)

COURSE CALENDAR

Date	Topic	Due
1/19/2018	Introduction to PhD Research	
1/26/2018	Panel discussion: keys to a successful PhD	Sign-up for a presentation time for end of semester
2/2/2018	High performance computing	
2/9/2018	Ethics	
2/16/2018	Collaborative Research	Email benjamin.risk@emory.edu two papers for possible presentation.
2/23/2018	Latex and beamer Writing guidelines, reference management	
3/2/2018	Statistics and science	Box, G. "Science and Statistics." JASA 1976

	Data management principles	Breiman, L. "Statistical modeling: the two cultures." Statistical Science 2001.
3/9/2018	Faculty presentations	
3/16/2018	No class -- Spring Break	
3/23/2018	Faculty presentations	
3/30/2018	Faculty presentations	
4/6/2018	Faculty presentations	Written report due.
4/13/2018	Student presentations	
4/20/2018	Student presentations	
4/27/2018	Student presentation, course summary	Revised written report due.

COURSE OUTLINE

See above.