Bios 6631 Master's Statistical Theory I

Fall Semester 2018
CSPH Department of Biostatistics
3 credits

Prerequisites: The course assumes a firm knowledge of differential and integral calculus, and some matrix algebra.

Course Summary: This course presents an introductory coverage of the theory of discrete and continuous random variables and applications to statistical problems. Topics include probability theory, transformations and expectations, common families of distributions, multiple random variables, and properties of a random sample.

Course Instructor:

Sam MaWhinney
Office: Building 500 W3105
Phone: 303 724 4368
Office Hours: Problem solving sessions before class / by request
Email: Sam.MaWhinney@ucdenver.edu
Course TA: Mayla.Boguslav@ucdenver.edu

Problem Solving Sessions (Lab):

Class Room Ed-2 South 1308: Tuesday/Thursday from 12:00pm to 12:55pm.
Casual / attendance not required (but recommended) / bring your lunch

Homework and Quizzes:

Thursday: Weekly Homework Assigned.
Following Thursday: Homework due / Quiz (**Extremely** similar to homework)
Homework solutions passed out after the quiz.

Quizzes: Lowest quiz will be dropped. Missed quizzes cannot be made up -unless arranged prior to quiz.

Homework: Homework will be graded 0,1,2,3. These scores will only be used to **increase a borderline grade** (i.e. if you are on the upper end of an A-, you could get bumped up to an A). Note: You can choose not to turn in any homework and still receive an A.

Exams:

In-class exams will be based largely on homework problems and a set of additional, more challenging, problems given out with the homework. Note: Given that the assignments build on previous material, these problems may cover any aspect of C&B.
The midterm exams are from 1pm to 2:25pm on Tuesdays: 10/2 and 11/6.
The final exam will be on Thursday December 13th 12:30pm to 3:00pm.
Consider moving Final exam to Wednesday 12/12, if no conflicting exams / student preference?

Grades:

20% Quizzes; 20% Midterm Exam-I; 25% Midterm Exam-II; 35% Final Exam

Course Text:

Casella and Berger. *Statistical Inference Second Edition*, 2002. Duxbury. ISBN 0-534-24312-6.

Course Software (Graphical Interpretations / Simulate Data from Known Distributions):
Rstudio https://www.rstudio.com/ or R: http://cran.r-project.org/ (Code provided -thanks Mayla!)

Course TA (1/2 time) Mayla Bosguslav:
Office hours are open format and will be held between 11am and noon on Thursdays (starting 2nd week) in Ed-2 South 1304. Students are welcome to attend office hours with any questions they have about either the homework or the material covered in class. Attendance is non-mandatory, but highly encouraged for those struggling with the material.

Note. Email questions to Mayla should be limited to 'straightforward' clarification questions. It takes a significant amount of time to generate a response/notation via email to a theory question.

Course Competencies:
Carry out and explain calculations, derivations and proofs central to basic statistical theory, and explain their use and implications in applied statistical work.

Description of competency assessment:
Multiple written homework assignments, quizzes and written exams each semester

Academic Integrity:
Honor system: All aspects of this course are conducted under the honor system. All students should have developed the qualities of honesty and integrity, and each student should apply these principles to his or her academic and subsequent professional career. All students are expected to have achieved a level of maturity, which is reflected in appropriate conduct at all times. Related to academic honesty, all work done on exams or other assignments is to be done independently, unless specific instruction to the contrary is provided by the course instructor.

The following statement will appear on each exam: I understand that my participation in this examination and in all academic and professional activities as a UCD student is bound by the provisions of the UCD Honor Code. I understand that work on this exam and other assignments are to be done independently unless specific instruction to the contrary is provided.

Accommodations
Students requesting accommodations for a disability must contact:
Sherry Holden | Coordinator
University of Colorado Anschutz Medical Campus Disability Resources & Services
| Bldg. 500, Room Q20-EG 305A
Phone: (303) 724-5640, Fax (303) 724-5641
Part-time: Monday, Tuesday and Thursday
sherry.holden@ucdenver.edu

Selim Özi | Assistive technology Specialist, Accommodation Coordinator
University of Colorado Anschutz Medical Campus Disability Resources & Services
| Mail Stop A010, Building 500, Room Q20-EG 306
Phone: (303) 724 8428, Fax: (303) 724 5641
selim.ozi@ucdenver.edu

Be aware that the determination of accommodations can take a long period of time. No accommodations will be made for the course until written documentation is provided by the Disability resources and services office to the course directors. It is the student's responsibility to coordinate approved accommodations with the Disability resources and services office in advance. Further general Information regarding disability resources and services can be found at: http://www.ucdenver.edu/student-services/resources/disability-resources-services/Pages/disability-resources-services.aspx .

Master's Theory, Fall 2018

Lecture	Date	Day	C&B Chapter	Quiz Lab	Exams	Room Ed 2 South
1	8/28	T	1	No Lab		1308
2	8/30	H	1	Rstudio Intro*		1308
3	9/4	T	1			1308
4	9/6	H**	1-2	Quiz 1		1308
5	9/11	T	2			1308
6	9/13	H	2	Quiz 2		1308
7	9/18	T	2-3			1308
8	9/20	H	3	Quiz 3		1308
9	9/25	T	3			1308
10	9/27	H	3	Quiz 4		1308
	10/2	T	**1-2:25pm**	No Lab	**Mid-I**	1308
11	10/4	H	3	No Lab		1308
12	10/9	T	3-4			1308
13	10/11	H	4	Quiz 5		1308
14	10/16	T	4			1308
15	10/18	H	4	Quiz 6		1308
16	10/23	T	4			1308
17	10/25	H	4	Quiz 7		1308
18	10/30	T	4-5			1308
19	11/1	H	5	Quiz 8		1308
20	11/6	T	**1-2:25pm**	No Lab	**Mid-II**	1308
21	11/8	H	5	No Lab		1308
22	11/13	T	5			1308
23	11/15	H	5	Quiz 9		1308
24	11/20	T	5			1308
	11/22	H	-	Thanksgiving		
25	11/27	T	5			1308
26	11/29	H	5	Quiz 10		1308
27	12/4	T	Review			1308
28	12/6	H	Review	Quiz 11		1308
Finals	12/11	T	-			
Week	12/13	H#	**12:30-3:00pm**		**Final**	1308

*Mayla / bring laptops; Rstudio goal is to get a graphical perspective on the material.
**Mayla's 1st office hour.
#Tentative –may be moved to Wednesday 12/12, based on student input/exam schedules.