BIOSTATISTICS 660 (FALL 2017)
Probability and Statistical Inference I

Instructor:  Anastasia Ivanova, Associate Professor of Biostatistics
Office Location:  3103C McGavran-Greenberg Hall
Office Hours: by appointment
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E-mail:  aivanova@bios.unc.edu

Lectures:  
Tuesday and Thursday, 12:30 PM to 1:45 PM, Rosenau 228
Please be aware of the UNC policy that food and drink of any kind are prohibited in all General Purpose Classrooms.

Assessment:  
1)  MIDTERM EXAM 1 help on Sep 17 (worth 20% of final grade);
2)  MIDTERM EXAM 2 held on Oct 27 (worth 20% of final grade);
3)  FINAL EXAM (worth 35% of final grade);
   UNC assigned time for Final Exam is Fri Dec 8 noon-3 pm, location Rosenau 228. You are allowed to bring a 1-page cheat-sheet to Midterm 1, a 2-page cheat-sheet to Midterm 2, and a 3-page cheat-sheet to the Final Exam. You can also bring the table with probability distributions from Casella and Berger (Casella and Berger is the table approved for MS qualifying exams).
4)  HOMEWORK (worth 25% of final grade); the homework assignments are due by 12:30 PM, HW can be submitted by e-mail (e-mail to BOTH course assistants) or bring the paper copy of your HW to class to submit before the beginning of class. You are permitted to work together on homework assignments, but all work submitted must be your own. Copying or simply dividing up assignments among collaborating students is not allowed. Questions concerning the homework assignments can be addressed to the course instructor or the course assistant. Questions concerning grading of homeworks should be addressed to the course assistant.

Help sessions:  
Weekly help session (optional) Mon 2:20 PM - 3:15 PM, location TBD.

Course assistants:  
Phoebe (Xiaotong) Jiang <xiaotong@live.unc.edu>, Chao Huang chaoh@email.unc.edu. The course assistants will be grading the homework assignments

Primary text:  

Lecture notes:  
https://sakai.unc.edu/portal/site/bios660

Other useful texts:  
Statistical Inference by Casella and Berger (Ch 1-5)
http://www.math.dartmouth.edu/~prob/prob/prob.pdf

Course prerequisite:  
A working knowledge of multivariate calculus (e.g., MATH 33 at UNC)

Course evaluations:  
All students are expected to complete course evaluations during the two week time window at the end of the course as listed on the UNC Academic Calendar.
List of Lectures
8/24 L 2.  Combinations and permutations. Set theory.
9/5 L 5.  Independence.
9/19 L 9.  Derivation of the Poisson distribution.
10/31 L 20.  Midterm 2
11/28 L 27.  Sampling from populations. Infinite and finite populations.
12/5 L 29.  Method of statistical differentials (delta method).
12/8 Final exam.

Tentative HW Schedule

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<thead>
<tr>
<th>HW</th>
<th>Date given</th>
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<tr>
<td>HW 1</td>
<td>Aug 24</td>
<td>Aug 31</td>
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<td>HW 2</td>
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<td>Sep 7</td>
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<td>HW 3</td>
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