

**STA 102 / BME 102: Intro Biostatistics**

<b>Classroom</b>	Social Sciences 136 Mondays and Wednesdays, 3:05 pm - 4:20 pm
<b>Professor Office</b>	Colin Rundel - <a href="mailto:colin.rundel@stat.duke.edu">colin.rundel@stat.duke.edu</a> Old Chemistry 223E
<b>Teaching Assistants</b>	Kyle Burris - <a href="mailto:kyle.burris@duke.edu">kyle.burris@duke.edu</a> Tracy Truong - <a href="mailto:tracy.truong@dm.duke.edu">tracy.truong@dm.duke.edu</a> Sophie Guo - <a href="mailto:yaqi.guo@duke.edu">yaqi.guo@duke.edu</a>
<b>Optional Textbooks</b>	Statistics for the Life Sciences - Samuels, Witmer, Schaffner Pearson, 4 <sup>th</sup> Edition, 2012 (ISBN: 9780321652805)  <a href="#">OpenIntro Statistics</a> - Diez, Barr, Çetinkaya-Rundel CreateSpace, 2 <sup>nd</sup> Edition, 2012 (ISBN: 1478217200)
<b>Course Website</b>	<a href="http://stat.duke.edu/~cr173/Sta102_Fa15/">http://stat.duke.edu/~cr173/Sta102_Fa15/</a>
<b>Office hours</b>	
<i>Professor</i>	Old Chem 223E Tuesdays 10:00 am - 12:00 pm or by appointment
<i>TAs</i>	Old Chem 211A Tracy Truong - Sundays 3:00 - 5:00 pm Sophie Guo - Mondays 1:00 - 2:00 pm and 6:00 - 7:00 pm Kyle Burris - Tuesdays 12:30 - 2:30 pm
<b>Lab Sections</b>	Old Chem 101 01L - Tuesday 1:25 - 2:40 pm 02L - Tuesday 3:05 - 4:20 pm 03L - Tuesday 4:40 - 5:55 pm
<b>Exams</b>	Midterm 1 - Wednesday, September 30 <sup>th</sup> in class Midterm 2 - Wednesday, November 4 <sup>th</sup> in class Final - Friday, December 11 <sup>th</sup> 2:00 - 5:00 pm
<b>Holidays</b>	Fall Break - Monday, October 12 <sup>th</sup> Thanksgiving - Wednesday, November 25 <sup>th</sup>

## Grading:

Your final grade will be comprised of the following.

Homework	10%
Labs	10%
Project(s)	20%
Midterm 1	15%
Midterm 2	15%
Final	30%

The exact ranges for letter grades will be curved and cutoffs will be determined after the final exam. The more evidence there is that the class has mastered the material, the more generous the curve will be.

## Lectures:

Lectures will include a combination of theory / derivations and interesting and illustrative examples. Lecture slides will be posted the day of the lecture, printing these out and bringing them with you to class will be useful. Note that these slides are not intended to be exhaustive and will be a poor substitute for taking your own notes during the course of the lectures. My expectation is that students should attempt the assigned readings before class so that they are not seeing the material for the first time in lecture. You are responsible for all the material covered in lecture as well as in the text and homeworks. Please ask questions in class, office-hours or by e-mail if you are struggling (or just curious), do not wait until just before an exam when it may be too late.

## Homework:

Homework will be assigned weekly on the course webpage and will be comprised of problems from a number of different (bio)statistics textbooks. The objective of the homework assignments is to help you develop a more in-depth understanding of the material covered in the lectures and help you prepare for exams.

Homework assignments will be graded out of 100 points and grading will be based on completeness as well as accuracy. In order to receive credit you must show all your work. You are welcomed, and encouraged, to work with each other on the homework problems, but you must turn in your own work. If you copy someone else's work, both parties will receive a 0 for the assignment and will be reported to the *Undergraduate Conduct Board*. If you have any questions about what constitutes plagiarism do not hesitate to ask. Note that consulting outside sources such as answer keys or solutions manuals constitutes academic dishonesty and will result in equivalent penalties to plagiarism.

Your homework must be stapled, legible, and contain your full name and is due at the beginning of class on the due date (see late work policy below). If you cannot make it to class the day homework is due, please email me to make arrangements to drop off your homework earlier. There will be approximately 11 homework assignments throughout this course, your final homework graded will be based on your highest  $n - 1$  scores (lowest homework score will be dropped).

**Labs:**

The objective of the lab is to give you hands on experience with data analysis using modern statistical software. The labs will also provide you with tools you will need to complete the research projects successfully. We will be using RStudio as a front end for the R statistical computing environment. You will be able to use RStudio on any computer with a web browser, and your work will persist regardless of which computer you log in from.

Each lab will include exercises that you will need to complete which will be due the following week. Similar to homework, collaboration is encouraged but you are responsible for your own write up and you must turn in your own work. Attendance for all labs is mandatory and while you may still turn in the write up for labs you do not attend there will be a 50% penalty for any non-excused absences. There will be approximately 12 lab write ups throughout this course, your final lab grade will be based on your highest  $n - 1$  scores (lowest lab score will be dropped).

**Project(s):**

This course has a [Research designation](#) and therefore requires a in depth research project. You will be responsible for two different research projects over the course of the semester. The first will consist of several mini data analysis projects where you will select from several data sets and answer specific research questions relevant to those data sets. The second is much more open ended and will require that you develop a research question, obtaining data relevant to that question, and applying what you learn in this class to analyzes that data to come to a meaningful conclusion. Additional details on these projects will be provided as the course progresses. Similar to the final exam you cannot pass this class unless you turn in both research projects and receive at least 30% on both.

**Exams:**

The first midterm will be on Wednesday, September 30<sup>th</sup> and second midterm is on November 4<sup>th</sup>. The Final Exam will be a comprehensive 3 hour exam that will be administered on Friday, December 11<sup>th</sup> 2:00 - 5:00 pm. Exam dates cannot be changed. No make-up exams will be given. If you cannot take the exams on these dates you should drop this class. You cannot pass this class if you do not take the final exam regardless of your scores on the other components of this class.

You will be allowed to bring one sheet of notes (“cheat sheet”) to the midterms and the final. This sheet must be no larger than  $8\frac{1}{2}'' \times 11''$ , and must be prepared by you. You may use both sides of the sheet.

**Email:**

I will regularly send course announcements by email, make sure to check your email daily. Email is the easiest way to reach me outside of class, note that it is much more efficient to answer most questions in person.

## **Academic integrity:**

Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Citizens of this community commit to reflect upon and uphold these principles in all academic and non-academic endeavors, and to protect and promote a culture of integrity. Cheating on exams or plagiarism on homework assignments, lying about an illness or absence and other forms of academic dishonesty are a breach of trust with classmates and faculty, violate the *Duke Community Standard*, and will not be tolerated. Such incidences will result in a 0 grade for all parties involved. Additionally, there may be penalties to your final class grade along with being reported to the *Undergraduate Conduct Board*.

Please review the Academic Dishonesty policies at <http://www.studentaffairs.duke.edu/conduct/resources/academicdishonesty>.

## **Excused Absences:**

Students who miss a midterm due to a scheduled varsity trip, religious holiday or short-term illness should fill out an online *NOVAP*, *RHoliday* or *short-term illness* form respectively and will be given the grade of their Final Exam for those tests. Note that these excused absences do not excuse you from assigned homework, or labs, it is your responsibility to make alternative arrangements to turn in any assignments in a timely fashion.

Those with a personal emergency or bereavement should seek a Dean's Excuse; check with your academic dean for details.

## **Important Policies:**

- Late work policy for homework and lab assignments:
  - late but during class: -10%
  - after class on due date: -20%
  - next day or later: no credit
- Late projects will be assessed a 10% penalty per day late.
- There will not be make-ups for any of the homeworks, labs, or exams.
- All regrade requests on homeworks and exams must be discussed with the professor within one week of receiving your grade. There will be no grade changes after the final exam.
- You must take the final exam in order to pass this class.
- You must receive at least at least a 30% average on all project assignments in order to pass this class.