STA 102 / BME 102: Intro Biostatistics

Classroom:	Old Chem 116 Mondays and Wednesdays, 11:45 am - 1:00 pm
Professor: **Office:** **Email:**	Colin Rundel Old Chemistry 223C *colin.rundel@stat.duke.edu*
Teaching Assistants:	Bocheng Jing - *bocheng.jing@duke.edu* Gaoang Wang - *gaoang.wang@duke.edu* Siyi Zhang - *siyi.zhang@duke.edu* Siyun Yang - *siyun.yang@duke.edu*
Required Materials:	i>clicker 2 - MPS (ISBN: 978-1-429-28047-1)
Optional Textbooks:	Statistics for the Life Sciences - Samuels, Witmer, Schaffner Pearson, 4^{th} Edition, 2012 (ISBN: 978-0-321-65280-5) Intuitive Biostatistics - Motulsky Oxford University Press, 2^{nd} Edition, 2010 (ISBN: 978-0-199-73006-3)
Course Website:	*http://stat.duke.edu/~cr173/Sta102_Sp14/*
Office hours:	
Professor	Tuesday 12:30 - 2:30 pm or by appointment, Old Chemistry 223C
SECC	Sunday - Thursday 4 - 9 pm, Old Chemistry 211A For more information and a schedule see: *http://stat.duke.edu/courses/resources-students*
Lab Sections:	Old Chemistry 101 01L - Tuesdays 1:25 - 2:40 pm 02L - Tuesdays 3:05 - 4:20 pm 02L - Tuesdays 4:40 - 5:55 pm
Exams:	Midterm 1 - Wednesday, Febuary 19^{th} Midterm 2 - Wednesday, March 26^{th} Final - Monday, April 28^{th}, 9:00 am - 12:00 pm
Holidays:	Martin Luther King, Jr. Day - Monday, January 20^{th} Spring Recess - Monday, March 10^{th} and Wednesday, March 12^{th}

Grading:

Your final grade will be comprised of the following.

Homework	15%
Labs	10%
Quizzes	5%
Project 1	5%
Project 2	10%
Midterm 1	15%
Midterm 2	15%
Final	25%

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:

Will be assigned weekly on the course webpage and will be comprised of problems from the text and additional problems. 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 name and student ID number 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 are a total of 11 homework assignments planned for this course, your final homework graded will be based on your highest 10 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 use a statistical analysis package called RStudio, which is a front end for the R statistical language. You can use RStudio on any computer with a web browser. To get an RStudio account you will need a gmail account, if you don't have a gmail account, you can create one at *https://www.google.com/accounts/NewAccount*. You will receive instructions on how to submit your gmail account before the first lab.

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 are a total of 11 lab write ups planned for this course, your final lab grade will be based on your highest 10 scores (lowest lab score will be dropped).

Quizzes:

At the beginning of some lectures (announced ahead of time) you will complete a brief (10-15 min, ~ 5 multiple choice question) quiz using your clicker. These quizzes will serve as performance assessments for the recently covered material. The purpose of these quizzes is for me to assess the class' overall understanding of material and to serve as a self assessment for you to determine areas of weakness. All quizzes must be completed by you with your own clicker in the lecture hall and no additional time will be given if you are late.

Research Project:

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, February 19 and second midterm is on Wednesday, March 26. The Final Exam will be a comprehensive 3 hour exam that will be administered on Monday, April 28^{th} from 9:00 am - 12:00 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 tests 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, it is your responsibility to make alternative arrangements to turn in the assignment 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 points
  - after class on due date: -20 points
  - next day or later: no credit
- Late projects will be assessed a 10 point penalty per day late.
- There will not be make-ups for any of the homeworks, labs, quizzes, 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 final exam in order to pass this class.
- You must turn in both research projects and receive at least 30/100 points on both in order to pass this class.