STAT 250: Introduction to Biostatistics
Department of Statistics, Penn State University
Spring 2015

Professor Dr. Kari Lock Morgan, klm47@psu.edu
Assistant Professor of Statistics
Office hours: 2:30 – 4:00pm Wednesday and Thursday in 323B Thomas

TA and LAs
TA: Nathaniel Cannon, nsc129@psu.edu, Office Hours: 12 – 2pm Thursday in 323 Forest Resources
LA Section 1: tbd
LA Section 2: Daniele Sipes, dns5180@psu.edu, Office Hours: 4 – 6pm Thursday in 320 Thomas
LA Section 3: John Mousoupetros, iam6431@psu.edu, Office Hours: 6 – 8pm Thursday in 320 Thomas

Lectures 10:10 – 11am Monday and Friday in 101 Thomas
Labs 10:10 – 11am, 11:15 – 12:05pm, or 12:20 – 1:10pm Wednesday in 111 Boucke

Websites
General: http://www.personal.psu.edu/klm47/Courses/STAT250/Spring2015/schedule.htm
Textbook and online homework: www.wileyplus.com
Course management and grades: ANGEL: www.cms.psu.edu

Required Materials

Textbook Statistics: Unlocking the Power of Data; Lock, Lock, Lock Morgan, Lock and Lock
*Must purchase with WileyPlus which will be used for online homework.

Clicker i>clicker or i>clicker+; register by 1/23/15 at clickers.psu.edu

Additional Materials

Lecture slides will be posted on the course website, but these will not be complete (answers will be missing. You are encouraged to take notes on the slides or take supplemental notes.

WileyPlus has online videos explaining every example and learning goal in the book. This is a great resource for clarifying concepts you may find confusing!

Course Objectives

After finishing this course, you should have:

• An understanding of the importance of data collection, the ability to recognize limitations in data collection methods, and an awareness of the role that data collection plays in determining the scope of inference.
• The ability to use technology to summarize data numerically and visually, and to perform straightforward data analysis procedures.
• A solid conceptual understanding of key concepts such as the logic of statistical inference, estimation with intervals, and testing for significance.
• The knowledge of which statistical methods to use in which situations, the technological expertise to use the appropriate method(s), and the understanding necessary to interpret the results correctly, effectively, and in context.
• The ability to understand and think critically about data-based claims.
• An awareness of the power of data.
A more detailed list of learning objectives can be found online here: 
http://www.personal.psu.edu/klm47/Courses/STAT250/Spring2015/LearningObjectives.htm

Course schedule and topics can be found online here: 
http://www.personal.psu.edu/klm47/Courses/STAT250/Spring2015/schedule.htm

Grade Breakdown

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clicker</td>
<td>5%</td>
</tr>
<tr>
<td>Labs</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm Exams (3 x 15%)</td>
<td>45%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

Final letter grades will be determined as follows:

- B+: 87-89%
- C+: 77-79%
- A: 94-100%
- B: 83-86%
- C: 70-76%
- D: 60-69%
- F: < 60%
- A-: 90-93%
- B-: 80-82%

You will be able to track your grades for this course using ANGEL.

Components of the Course and Policies

Clickers

We will be using i>clickers throughout this course. Each of you will have a clicker that is linked to you. Clicker questions will all be multiple choice, and will usually be more conceptual, rather than computational. You are not expected to always know the right answer, so credit is awarded simply for clicking in. However, it is to your benefit to think deeply about the questions and try to get the right answer; the point is to get you to think and actively engage with the material while it is being presented. Clicker grading will begin 1/23/15.

It is your responsibility to come to class and remember your clicker. Of course, I realize that occasionally you may forget your clicker or need to miss class, so you can have up to two absences without penalty. These absences do not need to be excused by me, and I do not need to know the reason for your absence. If you have an unavoidable legitimate absence, such as illness, after two classes have been missed, please email the TA, nsc129@psu.edu, before the class to be missed with your reason. If you anticipate missing more than two classes for legitimate reasons known at the beginning of the semester, please see Professor Morgan during the first two weeks of classes to discuss your situation. Clickers may not be shared, and no one else can use your clicker. Failure to abide by this will result in a 0 clicker grade for everyone involved.

Labs

Labs will take place on Wednesdays in 111 Boucke. The primary goals of the labs are to (1) teach you how to use statistical software, and (2) offer valuable hands-on experience doing statistics in a supervised setting. Labs are a required part of the course. One lab may be missed without penalty; this does not need to be excused and I do not need to know the reason for your absence. Beyond this one absence, please email the before the lab to be missed with the reason for your absence. In this case the lab will need to be made up on your own.

Homework

There will be homework assignments due approximately every week, usually on Fridays before class. You may collaborate on homework (in fact, this is encouraged!), but if you do work together, we recommend trying problems on your own first to best prepare you for exams. The
primary goal of homework is to help you learn, and to prepare you for exams (so copying someone else’s homework is only hurting you). Although homework usually is only due once a week to be more flexible for you, homework will be assigned after every class, and completing it as soon as possible after it is assigned is recommended (it will be easiest right after you learned it, and it will help solidify the concepts from the previous class, making it easier to learn new material). Late homework may be submitted for half credit. Your lowest homework grade will be dropped.

Homework will be comprised of two parts: practice and graded. Only the graded problems need to be turned in; the practice problems are purely for your own benefit. Solutions to the practice problems are available in WileyPlus.

Exams

There will be three midterm exams, on 2/13, 3/27, and 4/24 in class, and a final exam during finals period. These exams will be closed to all materials except for a non cell-phone calculator and one (Exam 1), two (Exam 2), or three (Exam 3 and Final) double-sided 8 ½ × 11 pages of notes prepared only by you. Exams are mandatory, and must be taken at the given time. Unavoidable legitimate reasons for not being able to take the exam must be submitted and approved in advance. Excuses for missing exams that are submitted after the fact will not be accepted. Re-grading requests must be made within one week of when the graded exam is returned, and must be submitted in writing. These will be honored if points were tallied incorrectly, or if you feel your answer is correct but it was marked wrong. We will not re-grade to alter the number of points deducted for a mistake.

Keys to Success

1. Come to class ready to pay attention and think. Class is designed to give you multiple opportunities to actively engage with the material; taking advantage of this during class will make your life easier outside of class. During class, resist the temptations of email, texts, Facebook, or other distractions.
2. Try the homework first by yourself, get help where needed, and make sure you understand all the problems by the time you turn it in. Being able to do homework problems on your own is your best preparation for exams.
3. Attend every lab, and spend time in lab working on statistics and engaging in discussion of the material. Ask your peers or TA to explain if you are confused.
4. Read the textbook or watch the tutorial videos, especially if you are confused.
5. Do lots of practice problems. Answers and full solutions to all the odd problems are given in WileyPlus, so you have as many problems as you want to practice on!
6. Stay on top of the material. Clear up confusion as it occurs.

Academic Integrity Statement: All Penn State and Eberly College of Science policies regarding academic integrity apply to this course. See the Academic Integrity Policy and Code of Conduct for details. Violations of academic integrity may result in failure of the course.

ECOS Code of Mutual Respect: The Eberly College of Science Code of Mutual Respect and Cooperation embodies the values that we hope our faculty, staff, and students possess and will endorse to make the Eberly College of Science a place where every individual feels respected and valued, as well as challenged and rewarded.

Disability Policy: Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807, 116 Boucke, http://equity.psu.edu/ods/. In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see the guidelines at http://equity.psu.edu/ods/guidelines/documentation-guidelines).