Statistics (Section ZND) Fall 2018

MA180 and MA418 STATISTICS Section ZND, Fall 2018

Section ZN  Class: Tuesday  HB 312  12:30pm - 1:45pm
    Lab: Thursday  HHB 202  12:30pm - 1:45pm
First day of class: Tuesday  August 28, 2018
Last day of class: Thursday  December 6, 2018
Final Exam: Thursday  December 13  10:45am

Instructor  Michael Pogwizd  E-mail: mpogwizd@uab.edu
Office: CH 478B  (Office Hours TBA)
Website: people.cas.uab.edu/~mpogwizd/


Objectives
This course supports the development of quantitative literacy. As such, it is not about
learning how to do the homework and quiz problems and then replicating that effort on
tests. Rather, the course is about learning the concepts and principles of statistics and then
being able to choose among various statistical methods when presented with a brand-new
problem. The actual calculations required in applying statistical methods can usually be
done by using a calculator or computer program. Students should not expect that test
questions will duplicate homework and quiz problems; quite the opposite.

Upon successful completion of the course, a student can do the following:

• Handle data sets, construct and interpret tables, graphs, and schematic
  representations of mathematical relations
• Identify a problem and translate verbal descriptions into mathematical form
• Compute statistics and evaluate the significance of observations
• Draw conclusions based upon probability laws and empirical data
• Test hypotheses and validate a model based upon evidence
• Communicate results in a manner appropriate to the audience in writing or using
  visual aids (graphs, charts, schemata).
• Demonstrate understanding of the following concepts:
  ▪ Sample statistics vs. population parameters
  ▪ What constitutes a valid sample
  ▪ Probability, and what is likely to occur
  ▪ Measures of center
  ▪ Measures of variability
  ▪ The idea of a normal distribution
  ▪ The idea of a sampling distribution
  ▪ The concept of a confidence interval
  ▪ The testing of a claim or hypothesis
  ▪ Linear regression analysis
MyMathLab  All Homework, Quizzes, and Tests available only in MyMathLab Plus. Your MyMathLab Plus account must be activated via the following:
- Log in to BlazerNet/Canvas and click on the MyMathLab Plus link.
- Click on your course.
- Enter your MyMathLab Plus ACCESS CODE (or purchase it online), OR
  Click on Pay Later.* (good for 14 days from activation.)
* Once Temporary Access has expired, you must purchase and enter required access code or you will no longer have access to your course and assignments.

If you have any questions regarding your account, email course instructor. Please note that there will be **NO EXTENSIONS** for missed homework, quiz, or test deadlines due to failure to purchase access to your online materials.


Reading the textbook is required. Bringing the textbook to class is recommended but not required. The 12th edition is required.

**Book packaged with access code.** You should find copies of the text in the bookstores that are shrink-wrapped with a course access code. You will need the course access code. The book is available in hard cover or soft cover pre-punched for a loose-leaf notebook. The soft cover version is less expensive. The least expensive option is usually the book shrink-wrapped with the access code.

**Book packaged without an access code.** If you purchase a text that is not shrink-wrapped with an access code, you will have to purchase a stand-alone access code from the bookstore or on-line from the publisher at MyMathLab Plus.

**Students from Spring semester 2018 or Summer semester 2018:** If you have previously purchased an access code for this course, it may be possible to use it again. Let your instructor know if you are using this option.

Fold-Out Card  The book comes with a tear-out, fold-out card at about page 62. This card includes tables of distribution and statistical formulas. You will need this card to work problems in the course. **The card is the only reference document that you can use during testing. If you purchase a used book the fold-out card will probably be missing.** The fold-out card should be brought to class every day, along with a notebook for note-taking purposes.

Laptops  The use of laptop computers is **not permitted** during course lectures. Students are expected to engage with the instructor and take notes.
Cell phones  **Cell phone use during testing will result in a test grade of zero.** All cell phones, iPhones, iPads, and laptops must be turned off and put away during lectures and testing. **Texting during lectures is strictly forbidden.** Students found to be texting or otherwise on the Internet will receive deductions in participation points, at the discretion of the instructor, and such students may be asked to leave the classroom. In the case of multiple infractions the point deductions will be severe.

Calculators  A good calculator can be useful but is not required. In lieu of a calculator students can use the StatCrunch computer program for homework and quizzes. (If you want to use a hand-held calculator, it is recommended that you get a TI-83 Plus or TI-84 Plus.)

Browser  Firefox or Chrome browsers are best for doing homework/quizzes.

Email  Information about the course (changes to assignments, reminders, schedules, etc.) will be distributed to students using their BlazerID email address. Each student is required to access their UAB email account daily, as these communications represent official university business. This is a requirement for all UAB students. For UAB email account assistance, send an email to userservices@uab.edu, or call 934-3540.

Due dates  Homework problems can be worked **any number of times** until they are correct. Quizzes can be worked two times (the highest score will count). Homework sets are due by 11:00 PM and the corresponding quizzes must be submitted no later than 11:59 PM.

Make-ups  There are no make-ups for missed homework and quiz assignments. This is because they can and **should be completed ahead of time.** However, you can complete homework and quiz assignments late for half credit. A missed test can be excused for a serious, verifiable circumstance, and only if the student provides adequate written documentation. To appeal a missed test, go to the Math Department office in Campbell Hall room 452 and complete the appeal form. Appeals must be received no later than one week after the missed test, by 5:00 PM on that day. If the appeal is approved, your instructor will schedule a make-up time and place.

Withdrawal  The last day to withdraw from the course with a grade of “W” is October 19th, 2018. The permission of the instructor is not required.

Disability Support  DSS offers accommodations to students who qualify. The UAB DSS office is located in the Hill Student Center, telephone: 934-4205, e-mail: dss@uab.edu. Students who have a DSS-approved accommodation for extended test times will take quizzes and tests that have longer time durations. See your instructor for further information.
Course Assignments

Tests
There will be four 50-minute tests and a 90-minute final exam. The final exam will be comprehensive. The tests and final exam can all be completed with reference to the tear-out, fold-out card taken out of the textbook. The textbook itself cannot be used. Notes cannot be written on the fold-out card or attached to, or concealed within the fold-out card. You can use your calculator during testing, but not laptops, cell phones or any other Internet access. Students found using their cell phones during testing will receive a zero on the test. (StatCrunch will not be useful during tests.)

Homework
The homework exercises and quizzes are done using a computer program named MyMathLab Plus. In order to register for the on-line portion of the course you will need the access code that comes packaged with the text (or that you purchase on-line if your copy of the text does not include the shrink-wrapped access code). You can use the computers in the UAB Math Learning Lab in room 202 of Heritage Hall, computers in the Library’s ETS facility, or you can use your own computer with an Internet connection. Be aware if you are using your own computer, you may have to download the Flash plug-in in order to do the homework assignments.

Quizzes
Like the homework, quizzes are taken on-line. Each quiz can be taken two times (the highest grade will count). Do not hit the BACK button on your browser when taking a quiz. This will end your quiz and you will not be able to get back into it. If you think your computer or network connection is not reliable, you should take your quizzes in the UAB Math Learning Lab. Quizzes have a 30-minute time limit. They are open-book. Students are strongly advised to not wait until the last minute to complete homework and quizzes. Problems occurring at the last minute are the responsibility of the student.

Reading Assignments
Listed to the right are the sections of the Textbook assigned for reading and are the basis for the reading quizzes and tests.

Note: Reading material titled “Beyond the Basics” not included

<table>
<thead>
<tr>
<th>Ch.</th>
<th>Section to read</th>
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<tbody>
<tr>
<td>1</td>
<td>1, 2, 3, 4</td>
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<td>2</td>
<td>1, 2, 3, 4</td>
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<td>7</td>
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<tr>
<td>8</td>
<td>1, 2 (part I), 3, 4, 5</td>
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<td>9</td>
<td>1, 2, 3, 4</td>
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<td>10</td>
<td>1, 2, 3, 4</td>
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<td>11</td>
<td>1, 2, 3 (part I)</td>
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<tr>
<td>12</td>
<td>1, 2</td>
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Reading Quizzes
There is a separate reading quiz associated with each reading assignment. Each reading quiz can be taken two times. The higher grade will count. The Reading Quizzes do not have a time limit. Reading quizzes must be submitted no later than 11:59 PM on the day specified in your course schedule.
Participation
Classroom and lab participation are required. At each class meeting there will be a roll to be signed by the students. 5 points per week are awarded for on-time lecture participation with the fold-out card in hand. 5 additional points are awarded each week for lab participation. Zero points are awarded for missed lectures or missed labs. If the course instructor accepts a written excuse for an absence, the points awarded can be zero to half-credit, at the discretion of the instructor.

Students absent on University business (e.g. athletics) can make up the points at a scheduled tutoring session outside of normal class time.

Students arriving late get zero to half-credit, at the discretion of the instructor. Students attending a lecture or lab meeting without the fold-out card can earn zero to half-credit, again at the discretion of the instructor.

Signing the Roll
Students may not sign the roll sheet for another student. Students engaging in this activity are subject to disciplinary action for academic misconduct (including failing the course).

Group Project:
There will be a group project at the end of the semester where students will have the last two weeks of class to work on it. The grading will include a group and an individual portion. The details of the project will be made available during the Class 13 meeting as well as the group assignments.

Final Exam
The final exam is Thursday December 13th at 4:15 PM in the Math Learning Lab. The exam is comprehensive.

MA418
MA418 students must also submit a pass/fail project before the end of the semester. Information regarding the project will be distributed later in the semester. In support of developing writing skills, the project will include a report describing student observations, presenting logical analysis, and making conclusions.
Course Grading

Based on points earned (not on a percentage)

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Reading Quizzes (12 assignments @ 6 points each)</td>
<td>72</td>
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<tr>
<td>Homework (12 assignments @ 6 points each)</td>
<td>72</td>
</tr>
<tr>
<td>Quizzes (12 quizzes @ 6 points each)</td>
<td>72</td>
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<tr>
<td>Four tests @ 100 points each</td>
<td>400</td>
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<td>Final exam</td>
<td>250</td>
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<td>Lecture participation (14 weeks @ 5 pts each)</td>
<td>70</td>
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<tr>
<td>Lab participation (10 weeks @ 5 pts each)</td>
<td>50</td>
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<tr>
<td>Group Project</td>
<td>14</td>
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<tr>
<td>Total possible points</td>
<td>1000</td>
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<tr>
<td>Bonus points available (from Practice Tests)</td>
<td>40</td>
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**Letter Grade** based on points earned

- 880 to 1000 A
- 750 to 879 B
- 620 to 749 C
- 500 to 619 D
- Below 500 F

**Note:** 749 points is a C, not a B.

**Extra Credit**
The four practice tests are for extra credit. Each practice test can be worked on two times prior to the major test with which it is paired. The highest grade obtained on a practice test will count, and the score on the highest grade will earn the student that portion of the ten available bonus points.

**Grade Access**
Official student grades are maintained in the Math Department grade database (a.k.a. MADDIE). To access your grade record, go to [www.uab.edu/mathematics](http://www.uab.edu/mathematics) and click on Student Resources then Check grades. You will need to enter your BlazerID and password. You can also access it through Canvas or MyMathLab Plus.

**Grade Review**
Students are asked to review all grades for accuracy immediately after they are posted. Quizzes must be reviewed before the date of the mid-term test with which they are associated. Mid-term tests should be reviewed as soon as possible, but **no later than the date of the next test**. Tests that are not reviewed on this schedule are not eligible for review. **All questions involving homework grades, quiz grades, test grades and participation points must be resolved before the final exam.** Once the final exam is taken the course is complete, and no further review of in-term grades is permitted.
Preparing for Tests

There are three principle methods for learning course material and preparing for tests:

1. **Reading the Textbook**
   Students must allocate sufficient study time each week to a careful reading of the textbook. Students should read for meaning using markers or pens to underline key ideas. If ideas are unclear the students should ask for clarification during lectures, lab meetings, or instructor office hours.

2. **Taking Notes during Lectures**
   Instructors will cover key ideas during weekly lectures. Students should take notes and immediately ask the instructor for clarification whenever something is not clear. Students should strive to sit where they can maximize their communication with the instructor. Cell phones should be turned off at all times.

3. **Doing Homework for Understanding**
   When doing homework problems students should strive for learning and applying concepts in each problem, as opposed to just trying to get the correct answers. Think about the principles involved in working on the problem, and, once the problem is complete, read over the problem again, reviewing the steps involved and the reasons behind taking each step.