STAT 208 Section K0

BASIC STATISTICS

Spring 2014

Instructor: Carrie Helmig  Phone: 815-753-6729  Division FAX: 815-753-6776

E-mail: helmig@math.niu.edu

Office: DuSable Hall 359A  Office Hours: MW F 10:00-10:50 AM and by appt.

Class Info: TTH 2:00-3:15 PM  DuSable Hall 322

Recitation and TA:  TBA

Name:  Section K1 and K2  Email:

Phone #:  Office #:

Office hours:  SAC hours:

Teaching Philosophy: To present statistics in a manner such that the students can not only learn about statistics but also understand it enough to be able to apply it to everyday life and explain it to others should they have questions.

Text: Intro Stats, Fourth Edition. by DeVeaux, Velleman, and Bock

STAT 208 COURSE DESCRIPTION:
Stat 208 is designed to provide students with an understanding of reasoning involved in the statistician’s approach to a variety of problems. Not open for credit toward the major or minor in mathematical sciences. Not open for credit to students with credit in an upper-division statistics course or in OMIS 324 or UBUS 223. Not used in major or minor GPA calculation for mathematical sciences majors or minors. Credits: 3

LEARNING OUTCOMES FOR STAT 208:
- To develop a basic understanding of statistics and its role in today's world
- To develop a basic understanding of probability; its role in various disciplines and its usage in statistical calculations;
- To understand the concept of inductive reasoning as it is used in statistical inference: generalizing from a sample to the whole, while controlling the amount of error incurred in the process;
- To develop an understanding of statistical reasoning and an ability to apply this reasoning to real-life problems;
- To appreciate the universal applications of statistical methods in every aspect of modern life
- To be able to correctly interpret the statistical results that appear in the public media and other places.
- To develop logical thinking, abstract thinking and problem solving skills
STUDENT ASSESSMENT

GRADING

- Your final grade will be based on the following components:
  - Three midterm exams, each worth 100 points.
  - The final exam is cumulative and worth 150 points.
  - Average of homework assignments weighted to 50 points. The lowest three assignment grades will be dropped before computing the average. (e.g. After your drops, if your homework average = 90%, then you’ll receive 0.9 x 50 = 45 pts.)
- There is no extra credit except for what is mentioned in this syllabus.
- With a total of 500 points possible, the cut points for letter grades will be no higher than those listed in the below GRADE SCALE:

<table>
<thead>
<tr>
<th>Stat 208</th>
<th>Letter Grade</th>
<th>Cut off Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>465</td>
</tr>
<tr>
<td></td>
<td>A-</td>
<td>450</td>
</tr>
<tr>
<td></td>
<td>B+</td>
<td>435</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>415</td>
</tr>
<tr>
<td></td>
<td>B-</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>C+</td>
<td>385</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Below 300</td>
</tr>
</tbody>
</table>

- Please note that mistakes in your grades on homework and/or exams may occur. You have one week from the time the paper been handed back to notify the instructor of the mistake. If you wait longer than the one week, no change will be made to the grade.
- A grade of incomplete (I) will only be considered for students who are passing the course, but cannot complete the course due to health or family reasons.

EXAMS

- The midterm exams will be given during regular class time. The exact dates for these exams will be announced in lectures.
- All exams are closed-book, but relevant formulas will be provided at the exam. You may also use a hand-held calculator at the exams.
- It is your responsibility to bring (i) NIU picture ID, (ii) pencil, (iii) eraser, and (iv) calculator for exams. Sharing of any of these items is not allowed. You would be expected to do all calculations by hand if you do not have a calculator. You cannot use calculators in cell-phones, PDAs or laptops. Cell phones are to be turned off (not just muted) and kept away during exams.
• It is important to be on time for exams. If you arrive late and one or more students have already submitted their exams and left the room, then you may (and probably will) be denied the opportunity to take the exam. In such cases, you may be given a zero on the exam, or you may be given a make-up. The decision will be up to the Instructor.
• Make-up exams will only be given when a student has a planned, documentable, and excusable absence on a test date and personally negotiates the make-up in advance. For sudden, documentable, and excusable absences (illness, death, etc.), the points from the missed exam will be added to the final exam. All documentation must be provided in hardcopy to the instructor before the absence. Unexcused absences (oversleeping, forgetting, etc.) will result in a score of zero.
• The Final Exam is on Tuesday, May 6, from 4 - 5:50 pm. This is a mass exam with different timing from the standard final exam schedule. The Final Exam room will be announced in lecture.

HOMEWORK
• Homework (even numbered problems only) is due in your recitation period, unless other arrangements are made with your TA. The assignments will be due in the week indicated. No late homework will be accepted. Please do not give any assignments to your instructor.
• Students are allowed to discuss homework assignments, but you should not look at another student’s paper. Each student must write his/her solutions in their own way, using their own words.
• Assignments are to be neat and presented logically on loose-leaf paper. If more than one sheet of paper is used, the assignment must be stapled together. Please do not ask your instructor or TA for use of a stapler. Spiral paper is unacceptable. If your assignments are messy, disorganized or do not follow the stated instructions, you will not receive credit for that assignment. You are to show all your work. Just stating an answer (for example, from the back of book) will not ensure full credit.
• Please note that because of the quick pace of this course it is unlikely that all of your homework will be graded and returned to you before the exams. You may want to make copies of your homeworks before turning them in.

QUIZZES
• Announced quizzes and/or pop quizzes will be given. The average of all quizzes will be weighted to 25 points. These points will be added to your total at the end of the semester as extra credit. No makeup quizzes will be given.
ACCESSIBILITY
Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not done so already. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1301 (V) or drc@niu.edu. The Americans with disabilities statement is available at niu.edu/disability/accessibility-statement/index.shtml

ACADEMIC INTEGRITY STATEMENT
- The Statement of Academic Integrity in the Undergraduate catalog will be strictly enforced with regard to homework assignments, quizzes, and exams.
- Please see: http://www.niu.edu/stat/courses/pdfs/Accessibility_statement.pdf for policies on academic integrity, attendance and accommodations for students with disabilities.

GUIDELINES AND GENERAL INFORMATION
- You are encouraged to ask questions and to participate in class discussions, however talking in class or causing repeated interruptions while the instructor is lecturing is highly frowned upon.
- Cell phones are to be muted or turned off during lectures, recitations and visits to office hours and kept away during exams and quizzes. Violations will be considered as class disruptions, or worse, and will be treated accordingly.
- Texting during class is not allowed. If you are caught, your phone will be confiscated for the remained of the class period. If you are caught texting a second time, you will be asked to leave the class for that day.
- It is your responsibility to be sure that your work is turned in and that you receive the notes and announcements (all announcements are made at the beginning of class). Missing an announcement will not be accepted as a valid excuse for missing an event (test, quiz etc.). If you frequently miss class the instructor reserves the right to deny office hour privileges to you.
- Late arrivals and early departures from class are strongly discouraged, except in cases of emergency.
- Students are to remain for the entire session unless excused by the instructor beforehand or confronted with a serious personal emergency. For instance, it is not acceptable for students to walk in and out of class to answer cell phones, take casual bathroom and smoking breaks, or attend to other personal matters.
- It is not acceptable to use an iPod, read a newspaper, use a laptop for anything other than taking class notes, study for other classes, or engage in other behavior that distracts one from the class proceedings one the session has started. All students are to comport themselves in a manner consistent with common business etiquette and professional ethics.
• If you have a disability, please make arrangements with the Disability Resource Center (DRC) early in the semester, let me know and bring your documentation to my office.
• If you are traveling on University business (conferences, athletics, and honors requirements) or have family or religious commitments please bring your documentation to my office at least two (2) weeks prior to the event as students will need to fill out an accommodation/leave form.
• The syllabus may be changed at any time. Changes will be announced in lecture. This syllabus is a guide and every attempt is made to provide and accurate overview of the course. However, circumstances and events may make it necessary for the instructor to modify the syllabus during the semester and may depend, in part, on the progress, needs and experiences of the students.

SUGGESTIONS
  o To do well in this course, you should attend class regularly.
  o Please try to keep up with the class. If you fall behind, then you will have to work much harder to catch up.
  o Note that homework and quizzes combined are 15% of the total points. You have the opportunity to score a lot of points there.
  o If your quiz scores are consistently poor, then that is a red flag that something is going wrong.
  o Please feel free to talk to your TA or instructor. If you are falling behind or getting lost, then do not wait; act on it as soon as possible. Get help, spend more time studying, form study groups, go to your instructor's office hours, go to the Statistics Assistance Center (DuSable 326) - do whatever works for you.
<table>
<thead>
<tr>
<th>Week of</th>
<th>Material Covered</th>
<th>Assignment – Submit even-numbered problems (Odds are for your practice)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 13</td>
<td>Chapters 1 &amp; 2 Data/Variables and Categorical Variables</td>
<td>Read Chapters 1 &amp; 2</td>
</tr>
</tbody>
</table>
| Jan. 20 MLK Holiday No School Monday | Chapters 2 & 3: Categorical Variables and Displaying and Summarizing Quantitative Data | Ch 1: 22, 23, 25, 28, 29  
Ch 2: 17, 18, 19, 27, 28, 29, 30, 31, 33  |
| January 27            | Chapter 3, 4 & 5: Understanding and Comparing Describing Distributions, and Standard Deviation as a Rule | Ch 3: 2ab, 13, 14, 15, 16, 17, 19, 20, 23, 24, 27, 28, 39, 42, 41, 44  |
| February 3            | Chapter 5: Normal Curves, **Exam 1**                                            | Ch 4: 15, 16, 26, 27, 31, 33, 34  
Ch 5: 1, 2, 4, 7, 8, 17, 18, 25, 26, 27, 28, 35  |
| February 10           | Chapter 6: Scatter plots, Association and Correlation                           | Ch 5: 9, 10, 42 ab, 43, 44, 45 ab, 46 ab, 47 abc, 48 abc, 49, 50  |
| February 17           | Chapter 7: Linear Regression                                                    | Ch 6: 1, 2, 13, 14, 19, 20, 31, 32, 33, 34, 39 ac, 40 ac, 42, 45  |
| February 24           | Chapters 10 & 11: Sample Surveys & Experiments and Observational Studies        | Ch 7: 25, 26, 29, 30, 33, 34, 41, 42, 43 ab, 44 ab, 47, 48, 49 abcd, 50 abcd, 53, 54, 69 abcd, 76 abcd  |
| March 3               | Chapter 11: Experiments and Observational Studies, **Exam 2**                  | Ch 10: 13, 14, 15, 17, 18, 21, 22, 26, 27, 28, 30, 34, 35, 36, 39, 41  |
| March 10              | **Spring Break** (March 10 to 14)                                               |                                                                        |
| March 17              | Chapter 12: Probability                                                          | Ch 11: 15, 16, 21, 22, 24, 25, 27, 28  |
| March 24              | Chapter 15: Sampling Distribution Models                                         | Ch 12: 9, 10, 12, 14, 15, 19, 20, 23, 24, 25, 26, 27, 29, 31, 34, 36, 39, 40, 41, 42, 44, 45, 46  |
| March 31              | Chapter 16: Confidence Intervals for Proportions                                 | Ch 15: 17, 12, 18a, 20, 23, 24, 25 ab, 26ab, 27, 28, 33, 34, 41, 42, 43, 46, 49, 50, 60 abcd  |
| April 7               | Chapter 17: Testing Hypotheses about Proportions, **Exam 3**                   | Ch 16: 1, 9, 10, 11, 12 ab, 13, 14 abc, 15, 16 abd, 17, 18, 21, 22, 25, 26, 30, 32, 37, 38, 40  |
| April 14              | Chapters 17 & 18: Inferences about Means                                         | Ch 17: 3, 4, 11, 12, 15, 16, 23, 24, 26, 29, 31, 32, 33, 34, 36, 38, 40  |
| April 21              | Chapters 18 & 20.5: Comparing Means,                                            | Ch 18: 9, 10 a (round df down to a value in the table), 15, 16 bce, 23, 24, 27, 37 ab, 39, 40, 41 (s=3.637), 42 (s=7.02), 46(remove outlier,n = 9, s=3.55)  |
| April 28              | Chapter 20.6 & Review Reading day Friday May 2nd                                 | Ch 20.5 and 20.6: 11, 13, 15, 53, 61, 75, 77, 79  |
| Final Exam            | **Tuesday, May 6, 4:00-5:50 PM**                                                | Room TBA                                                              |

(exam rooms will post on the division web site in April)
STUDENT ACKNOWLEDGEMENT STAT 208

Please return this to your instructor by the end of the second week of class

“I, _________________________________________, have completely read this syllabus and understand and agree to the course requirements.”

Please indicate below any special needs or circumstances that may have some impact on your work in class, and for which you require special accommodations. Documentation of such circumstances must be stapled to this form. Such accommodations may include but are not limited to medical needs, athletic competition, religious observances, physical or mental disability, in ability to arrive in class on time or need to leave class early.

Circumstances or Special Needs: ________________________________

Signature:____________________________________________________

Date:________________________________________________________