Instructor:
Daniel S. Nagin
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412-268-8474
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Office Hours (Nagin):
Monday and Wednesday 10:30-12:00
and by appointment

Teaching Assistants:
Lindsay Bostwick (lbostwic@andrew.cmu.edu)
Jacqueline Mauro (jmauro@andrew.cmu.edu)

TA Hours:  Sunday 4-8 (start 9/13)
            Tuesday 5-9 (start 9/15)
            (by appointment before then)

Class Schedule:
Lectures (HbH 1502):  Monday and Wednesday from 1:30-2:50 (section A); 3:00-4:20 (section B)
Weekly Review (HbH 1000):  Starting Friday, September 4 from 3:00-4:20

Grades:  Homework  20%
           Exams  1 & 2  25% each
           Final Exam  30%

According to Heinz School policy the average grade in a core course is expected to be “B+.” Grades will be based on your scores on the three examinations and your homework assignments. Their weights in computing your final grade are shown above. The first exam will cover descriptive statistics and probability. The focus of the second exam will be statistical inference. The final exam will be comprehensive.

A couple of important points concerning homework assignments:

- All will be equally weighted even though the number of points assigned to each assignment varies.
- Homework assignments in hard copy form should be submitted in class on the due date. **Do not use the electronic drop box feature in Blackboard to submit assignments.**
- Because an answer key will be posted on Blackboard immediately following the assignment
due date, late homework assignments will not be accepted. In computing your final grade the lowest homework score will be dropped.

- Graded assignments will be returned at the weekly review session. If a graded assignment is not returned to you, notify us immediately.

**Appeals of Grades:** If you feel that an exam or homework has been improperly graded, appeals will, of course, be considered. All that is necessary is a brief note describing why you believe the problem was incorrectly or unfairly evaluated. Appeals of grades may be addressed to Lindsay, Jackie or me. I, however, will be the final arbiter.

**Cheating Policy:** Answers on exams must reflect your work alone. Cheating on exams at a minimum will result in a 0 exam score. Concerning homework assignments, discussion among individual students about assignments is permitted. **However, the completed assignment must be your own work.** For example, assignments often ask you to comment on the implications of a statistical or probabilistic finding or calculation. Assignments in which such commentary is identical or nearly identical will be regarded as cheating. Do not share your completed assignments. Sanctions for cheating are serious including termination of your enrollment at CMU. The bottom line is: do not cheat—the consequences of detection far outweigh any perceived benefit.

**Class Blackboard website:** [http://www.cmu.edu/blackboard/](http://www.cmu.edu/blackboard/) All course content will be available on Blackboard. This includes lecture PowerPoint slides, homework assignments, answer keys, and data sets required for assignments. In addition, lectures will be digitally captured and links to access the recording will be made available in Blackboard.

**Cell Phones and Laptops:** On occasion cell phones and laptops may be used to conduct in-class surveys and simulations for the purpose of demonstrating statistical concepts. Other uses of cell phones and laptops during class, however, are distracting to others. Please turn off your cell phone before coming to class. If you are awaiting a call, use a silent ring tone and take the call outside of class. I have a firm “lap tops down” policy. Paper copies of the lecture note will be circulated in class.

**Textbook:**

Statistics for Business and Economics (11th ed.)
McClave, Benson and Sincich
Prentice Hall

**Course Description**

The course is divided into four distinct components: Descriptive statistics, probability, fundamentals of statistical inference, and regression analysis. The module on descriptive statistics addresses the calculation and interpretation of summary statistical measures for describing raw data. The module on probability is intended to provide you with an introduction to key concepts of probability. The module on fundamentals of statistical inferences is designed to provide you with the background for executing and interpreting hypothesis tests and confidence intervals. The final module of the course focuses on
regression analysis, a widely used statistical methodology. Throughout the course we will regularly use a statistical software package called Minitab. Minitab is very easy to use and no prior experience with computing is required "to get you going."

The objectives of the course are to provide students with the ability to:

1. Use statistics to summarize patterns in raw data;
2. Use data to infer cause and effect relationships;
3. Use probability to characterize uncertainty;
4. Calculate and interpret confidence intervals and perform and interpret hypothesis tests;
5. Perform and interpret regression analyses;
6. Use the statistical software package Minitab;
7. Prepare you for more advanced statistical courses.

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<thead>
<tr>
<th>Class</th>
<th>Topics and Readings</th>
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<tbody>
<tr>
<td>9/31</td>
<td>Introduction</td>
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<td>Review of Syllabus</td>
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<td></td>
<td>What is Statistics?</td>
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<tr>
<td>9/2 &amp; 9/9</td>
<td>Descriptive Statistics</td>
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<tr>
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<td>Reading: 1.1-1.3, 1.5, 2.1-2.87</td>
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<tr>
<td>9/4</td>
<td>Review session will include introduction to Minitab (Install Minitab by then)</td>
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<tr>
<td>9/14 &amp; 9/16</td>
<td>Introduction to Probability</td>
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<td>Reading: 3.1-3.6 (skim discussion of combination rule in 3.1)</td>
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<tr>
<td>9/21 &amp; 9/23</td>
<td>Discrete Random Variables &amp; Expected Value</td>
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<td>Reading: 4.1-4.3</td>
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<td>9/28</td>
<td>Discrete Random Variable (cont.) and Introduction to Continuous RV</td>
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<td></td>
<td>Reading: 4.5</td>
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<td>9/30</td>
<td>Normal Distribution</td>
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<td>Reading: 4.6</td>
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10/5: Exam

10/7: Sampling Distribution and Central Limit Theorem
       Readings: 4.10-4.11

10/12 & 10/14: Estimation, Confidence Interval Statistics
                 Readings: 5.1-5.4

10/19 & 10/21: Hypothesis Testing (single population)
                 Readings: 6.1-6.4

10/26 & 10/28: Hypothesis Testing (continued)
                 Readings: 6.5-6.6

11/2: Two population Hypothesis Testing
       Reading: 7.1-7.3

11/4: Causality

11/9: Exam

11/11, 11/16

& 11/18: Simple Regression
         Reading: 10.1-10.6

11/23 & 11/30: Multiple Regression
                 Reading: 11.1-11.2

12/2, 12/7

& 12/9: Multiple Regression & Wrap-up
        Reading: 11.5-11.6