ST 372 – Introduction to Statistical Inference and Regression

Spring 2016

Professor: Dr. Arnab Maity - amaity@ncsu.edu - (919) 515-1937

Meeting Place/Time: 451 Riddick Hall – TU/TH 1:30PM – 2:45PM

Office/Hours: M 2:00P - 3:00P and by appointment in SAS Hall Room 5240

Teaching Assistant: Arkaprava Roy, aroy2@ncsu.edu
Office Hours (SAS Hall 1101): TBA

Course Website: http://www.stat.ncsu.edu/people/maity/courses/st372/

Required Text: Probability and Statistics for Engineering and the Sciences, Devore, Ninth Edition

Course Description: Statistical inference and regression analysis including theory and applications. Point and interval estimation of population parameters. Hypothesis testing including use of t, chi-square and F. Simple linear regression and correlation. Introduction to one-way analysis of variance.

Pre-requisites: ST 371

Computing: We will use StatCrunch. This is available at statcrunch.stat.ncsu.edu

Attendance: Regular class attendance is strongly encouraged. If you miss class for any reason, please make arrangements with another student to obtain the notes and materials that were covered that day.

Academic Integrity: Academic misconduct, such as cheating on exams, will not be tolerated. Cheaters will be prosecuted to the fullest extent. Please see the NCSU policy at the link below.

http://www.ncsu.edu/stud_affairs/osc/Alpage/acaintegrity.html

Policies of the instructor: Courtesy and Respect in the classroom is expected (both ways). Please come on time and do not start packing up before class is over. Please turn off or silence all cell phones before class begins.
I will use e-mail for some course announcements, so check regularly. When e-mailing, please use proper etiquette.

**Please bring a calculator (that is not your cell phone) to class.**

Laptop computers may not be used in class. Tablets or tablet computers may be used to take notes, as long as they are only used for notes and do not distract other students. If you are seen using the tablet for something other than notes, you will not be allowed to use the tablet for the rest of the semester.

I reserve the right to change any policy given, or add new policies as I feel appropriate.

**Students with disabilities:** Reasonable accommodations will be made for students with verifiable disabilities. Students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653.

**Schedule:**

The following is a rough schedule of the topics covered in this course. This schedule may be adjusted.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
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<tbody>
<tr>
<td>1</td>
<td>Review of selected section from Chapters 3 - 5</td>
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<tr>
<td>2-3</td>
<td>Chapter 6: Point Estimation (6.1 -6.2)</td>
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<tr>
<td>4-5</td>
<td>Chapter 7: Confidence Intervals (Single Sample) (7.1 – 7.3)</td>
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<tr>
<td>Feb 11</td>
<td>Midterm 1</td>
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<tr>
<td>7-8</td>
<td>Chapter 8: Hypothesis Testing (Single Sample) (8.1 – 8.5)</td>
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<td>9-11</td>
<td>Chapter 9: Inference for Two Samples (9.1 – 9.4)</td>
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<td>Mar 24</td>
<td>Midterm 2</td>
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<tr>
<td>13-14</td>
<td>Chapter 10: Analysis of Variance</td>
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<td>15-16</td>
<td>Chapter 12: Regression and Correlation (12.1 – 12.5)</td>
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<td>[Chapter 13: Multiple Regression and Chapter 14: Categorical Data Analysis as time permits]</td>
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<tr>
<td>May 5</td>
<td>Final Exam (1:00PM-4:00PM, 451 Riddick Hall)</td>
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Grades will come from exams and homework assignments (this may include larger project type homeworks). Two midterm exams will account for 40% of the total grade, the cumulative final exam 40% of the total grade, and homework assignments 20% of the total grade (although this is subject to change if projects are included).
Homework will be assigned weekly and due at the beginning of class. For fairness and clarity we have the following rules about homework.

- **Late homework will not be accepted**, unless prior permission has been obtained from the instructor.

- Some collaboration on homework is acceptable, and in fact you are encouraged to discuss the homework with others in the class. **If you do work with others, you must list your collaborators on the paper you hand in. The work you hand in must be your own.** Direct copying of someone else's work is not acceptable, nor is misrepresenting the work of others as your own.

- Use sentences and explain your work. The homework is graded in terms of correctness of the answers, organization of ideas and their presentation. A correct numerical answer with no explanation will receive little credit. Conscientious completion of all homework assignments is essential to receiving a good grade in this course.

**Exams:** There will be two midterm exams and one three-hour comprehensive final exam. Calculators are allowed on exams, but not cell-phones or any other device that can connect to the internet. No sharing of calculators is permitted. More information will be provided as the exams near.

Make up exams will not be given under any circumstances. If verifiable documentation can be provided to excuse a missed exam, then the other exam components of the grade will be reweighted.

**Auditing:** Students may register for auditor credit. Auditors must attend class regularly and complete assignments on the same schedule as the other students. A reasonable grade must be attained on the homework assignments.

**Dates to remember (University closed):**

Mar 7 - 11: Spring break