Statistics 3450
Basic Statistics for Engineers

Autumn 2012 Syllabus

Instructor: Dr. Christopher Hans
Email: hans@stat.osu.edu
Office: CH 327 (Cockins Hall)
Phone: 614.292.7157
Website: Carmen

When: TR 3:00 - 3:55
Where: MQ 264 (Macquigg Lab)
Office Hours: Mondays 10:30 - 11:30, Fridays 8:30 - 9:30

Course Description
The course provides an introduction to probability and statistics targeted toward students studying mechanical engineering. Topics covered include probability, random variables, the normal and binomial distributions, confidence intervals for means, hypothesis tests for means, multi-factor experiments and experiments with blocking. A more detailed list of topics can be found on the sample schedule below. Students are responsible for all material covered in class, in the assigned readings and in homework problems.

Assumed Background Knowledge and Prerequisites
Calculus, integration, exponential function, finite and infinite sums, union and intersection of sets. Prerequisite courses are Math 1152 (153), 1161.xx, 1172 (254), or 1181.

Enrollment
ADD and SECTION CHANGES will be processed (if space is available) starting at 7:30 AM on Tuesday, August 28th on a first-come, first-served basis in room 405A Cockins Hall. The instructor does not sign any add or section change forms — these must be taken to 405A Cockins Hall for a signature.

Textbook
*Principles of Statistics for Engineers and Scientists* by William Navidi. The book is available on reserve in the Science and Engineering Library.

College of Arts and Sciences GEC Statement:
Statistics 3450 is GE course in Data Analysis. The goals and expected learning outcomes are:

Goals: Students develop skills in drawing conclusions and critically evaluating results based on data.

Expected Learning Outcomes: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

Exams
Two midterm exams will be given in class: the first is on Thursday, October 4th and the second is on Tuesday, November 6th. One 8.5” × 11” sheet of paper with whatever handwritten facts, formulas or explanations you find helpful may be brought to each midterm exam (both sides of the paper may be used). The final exam is on Tuesday, December 11th from 4:00 PM – 5:45 PM. Two 8.5” × 11” sheets of paper (same rules as above) may be brought to the final. The final exam will be cumulative, with a slight emphasis on those topics covered after the second midterm. A calculator should also be brought to all exams (no cell phone calculators or PDAs).
Homework
There will be approximately 10 graded homework assignments throughout the semester. The due dates for
the assignments will be announced in class and on Carmen, and the assignments and solutions will be posted
on Carmen. You must show your work for all homework problems; do not just write the final answer.

Each assignment will consist of two parts: assigned problems and suggested problems. Solutions will be
provided for both the assigned problems and the suggested problems.

You will answer and turn in solutions for the assigned problems, and your work will be graded. Due to
the size of the class, we may not be able to grade each of the assigned problems in detail. In this case, we
will randomly select several of the assigned problems to grade and spot check the others to make sure you
attempted a solution. It will be your responsibility to compare your answers for those questions that are not
graded in detail with the solution set to see if you understand the material.

You should not turn in solutions for the suggested problems. These can be used on your own for additional
practice and to further your understanding of the material.

Homework will be collected in class on the due date. This is the only acceptable way to turn in homework
(do not leave homework assignments under my office door or email electronic copies). Late homework will
not be accepted (no excuses). I understand that illness and other unplanned emergencies often pop up
during the semester, and so I will drop your two lowest homework scores. I highly recommend that you save
these “freebies” until you really need to use them!

Grading
The final course grade will be based on:

- Homework (excluding your two lowest scores) ............... 15%
- Test 1 (Thursday Oct. 4th) .................................................. 25%
- Test 2 (Tuesday Nov. 6th) .................................................... 25%
- Final Exam (Tuesday Dec. 11th) ................................. 35%

Study Rooms and Help Hours
Our TAs hold office hours every day of the week in the Mathematics and Statistics Learning Center in
Cockins Hall room 134 starting on Wednesday, August 29th. The hours during which Stat 3450 TAs will be
available is posted at http://www.mslc.osu.edu/CH134.

Academic Misconduct
Please help maintain an academic environment of mutual respect and fair treatment. You are expected
to produce original and independent work on the exams. Although students are often encouraged to work
together on homework assignments, all students must submit their own work in their own words. It is
the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for
the investigation of all reported cases of student academic misconduct. The term academic misconduct
includes all forms of student academic misconduct wherever committed; illustrated by, but not limited
to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all
instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). Academic misconduct
will not be tolerated and will be dealt with procedurally in accordance with university policy, which
can be found at http://oaa.osu.edu/coam.html The Code of Student Conduct is available at http://
studentaffairs.osu.edu/csc/.

Communication Devices
Cell phones, PDAs and other communication devices must be either turned off or put on vibrate during
class. Please refrain from texting during class as a courtesy to those sitting around you. All electronic
devices other than a calculator must be shut off and put away during examinations.

Advice

1. A tentative lecture schedule is given later in this syllabus. Please give a first reading to scheduled text
   sections before the lecture that covers that material.
2. The course moves rather quickly. If you are having difficulty, please get help as soon as possible. Homework assignments can be very difficult if you wait until the last minute before trying any problems.

3. It is important that you provide sufficient detail in writing up solutions to the problems for grading. It is also important that your solutions be presented neatly in a clear, easy to read and follow format. **No credit** will be given for work that is too sloppy or difficult to read.

4. You may wish to photocopy your homework before turning it in around exam time. Graded assignments due immediately before an exam might not be returned before the exam (however solutions will be provided so that you can compare your work with them).

5. If you have a **regrade request** on any homework assignment or midterm, you must put your request in writing and turn it in, along with your original paper, within one week of the date the paper was first returned to class. If you are absent the day a graded paper is first returned to the class, it is your responsibility to come to me to get it in less than a week if you want to have a regrade option available to you.

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**Addressing Issues of Differing Abilities**

All students who feel they may need accommodations based on the impact of a disability should contact the instructor privately to discuss their specific needs. Students with documented disabilities must also contact the Office of Disability Services (ODS) in 150 Pomerene Hall (phone: 292-3307) to coordinate reasonable accommodations for the course. ODS forms must be given to the instructor as early in the semester as possible.

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**Drop Date**

The last day to drop the course without a ‘W’ appearing on your record is Friday, September 14.

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**Receiving an ‘I’ for the Course**

You cannot receive an incomplete for the course unless 65% of the work in the course has been completed. Extenuating circumstances will be handled on a case-by-case basis.

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**Syllabus Version**

8/21/12: Updated homework description, MSLC, schedule, office hours
7/9/12: Original
## Schedule
The *tentative* lecture schedule is:

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<thead>
<tr>
<th>Date</th>
<th>Reading</th>
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<tr>
<td>R Aug. 23</td>
<td>1.1-3</td>
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<td>T Aug. 28</td>
<td>3.1</td>
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<td>R Aug. 30</td>
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<td>T Sep. 4</td>
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<td>R Sep. 6</td>
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<td>T Oct. 9</td>
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<td>R Nov. 29</td>
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<td>T Dec. 4</td>
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**Final Exam**
Tuesday December 11, 4:00 PM – 5:45 PM