STAT 427: SPRING 2011
INTRODUCTION TO PROBABILITY & STATISTICS I
MWF 10:30-11:18, 1009 Smith Hall

Instructor: Prof. Prem K. Goel
E-mail: goel.1@osu.edu
Office: CH 204C (Cockins Hall) Office Phone: 614-292-8110
Office Hours: Wed and Fri 11:30 - 12:30
Course Website: www.stat.osu.edu/~goel/

Grader: Zhiguang Xu
E-mail: xu.304@osu.edu
Office: CH 420 (Cockins Hall) Office Phone: 614-247-2589
Office Hours: Tues 4:30-5:30, Wed 12:30-1:30 and Thu 10:30-12:30 (In MSLC)

Course Description and Objectives:
The course coverage includes an introduction to probability, discrete and continuous random variables, expected values, sampling distributions and their applications in Engineering and the sciences. You are expected to develop a basic understanding of the language of the science of decision making under uncertainty.
Students are responsible for all material covered in the Class (including handouts posted on the website), in the assigned readings and in homework assignments.
[Note: The knowledge acquired in this course will provide the foundation for the statistical inference techniques covered in a follow up course, Statistics 428.]

Text Book:
Probability and Statistics for Engineering and the Sciences, By Jay L. Devore, 7th Edition
[We will cover most of Chapters 2-5, in addition to some handouts. The book is on reserve in the OSU Science and Engineering Library. Statistics 428 will use the same text book.]

Note: A “bootleg” version of the text is being sold online that looks exactly like the authentic version of the book. The bootleg version has errors and some of the exercises are different. Some of the bootleg versions say “Printed in the Unites StateR of America.” Be careful if you are buying a used copy of the book.

Assumed Background Knowledge:
Calculus, integration, exponential function, finite and infinite sums, union and intersection of sets [A handout on Calculus Review is posted on the website.]

Homework Assignments:
There will be 7 graded homework assignments throughout the quarter. The assignments will be announced in the class and the course website.

Homework will be collected at the start of the class on the due date. Please submit your homework as you enter the classroom. This is the only acceptable way to turn in the homework (do not leave homework assignments under my office door or send electronic copy by e-mail, as they may not reach the grader).
I usually discuss key issues underlying some of the assigned problems in class and post the solutions on the website by 5:00PM on the due date. Therefore, to be fair to everyone, late homework will not be accepted under any circumstances. However, I will drop your lowest score in calculating the overall homework score for the course grade.

**Full credit policy:**

Full credit for each homework or exam problem can only be earned through showing your justification for or work on step of each solution. Answers without adequate explanations will not receive full credit.

**Performance Assessment:**

There will be two midterm exams and a final exam. These are all closed book and closed notes.

**Crib-sheets:** You may prepare 8 x 11 inches sheet of hand written notes (both sided, no photo copy). You will be allowed to bring in one such sheet in the first midterm exam, two such sheets in the second midterm, and three such sheets in the final exam.

**Calculators:** A calculator (with statistical functions) may be used for homework and exams. No cell phone calculators will be allowed during exams. (Note: This also applies to PDAs and other communication devices with calculator functions.)

**Sharing** the crib-sheets and/or calculators with other students during the exams is prohibited.

**Course Grading Scheme:** Course Grade will be determined from the overall course score based on the following weights:

- Attendance & Class participation 5%
- Home Work Assignments 15%
- Two Midterm Exams (20% Each) 40%
- Final Exam 40%

Your overall course score out of a “total score of 400” will be the weighted average calculated as follows:

**Overall Course Score** = (0.20 x Attendance and Class participation percentage) + (0.60 x Homework Percentage) + (0.80 x 1st Midterm Exam Percentage) + (0.80 x 2nd Midterm Exam Percentage) + (1.6 x Final Exam Percentage)

The cut-off points for the course grade are based on clusters in the overall course score.

**Note:** A point on each of the four components is not weighted equally in the overall score.

**Attendance Policy:**

In accordance with the University Rules, a student who is absent from three or more (not necessarily consecutive) classes, without contacting the instructor with a valid excuse, may be reported for possible disenrollment. To prevent disenrollment, the instructor should be contacted by E-mail (goel.1@osu.edu) within 24 hours of the third (and any subsequent) absence. Please note that this attendance policy may be enforced even if homework and other course requirements are being met, and that under certain circumstances disenrollment may result in a grade of "W" (withdrew).

In most classes, attendance will be taken using a sign-up sheet. If you miss no more than 2 classes, you will get full Attendance and Class participation points.
Communication devices:
Cell phones, PDAs, and other communication devices must be either turned off or put on vibrate during class. Their rings during the class disrupt the learning process. Cell phones, PDAs, or other communication devices are not allowed in any exam.

E-mail Messages:
In order to protect your privacy, all course related e-mail correspondence must be done through a valid OSU name.nn@osu.edu account. If you have not activated this account, you can activate it at https://acctmgmt.service.osu.edu/cgi-bin/KRB1EntryAdd

College of Arts and Sciences GEC Statement:
Statistics 427 is a Data Analysis course in the Quantitative and Logical Skills category of the GEC. The goals and objectives for this category are:

- **Goals/Rationale:** Courses in quantitative and logical skills develop logical reasoning, including the ability to identify valid arguments, use mathematical models, and draw conclusions based on quantitative data.
- **Learning Objectives:** Data Analysis. Students understand statistical and probability concepts, comprehend mathematical methods needed to analyze statistical arguments, and recognize the importance of statistical ideas.

Academic Misconduct:
Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. You are expected to produce original and independent work for homework and exams. Although students are often encouraged to work together on homework assignments, all students must submit their own written work in their own words. Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with University Rule 335-31-02 (this policy can be found at http://oaa.osu.edu/procedures/1.0.html).

Issues of Differing Abilities:
A student who feels he/she may need accommodation based on the impact of a disability must contact the Office of Disability Services (ODS), 150 Pomerene Hall (292-3307) to coordinate reasonable accommodations for the course. ODS forms must be given to your instructor as early in the quarter as possible to be filled out and returned to you. He/she should also meet the instructor privately during the first week to discuss specific needs.

Study Rooms and Help Hours:
Our 427/428 GTAs hold office hours in Math-Stat Learning Center, 128 Cockins Hall, starting with the second week of classes. You are encouraged to meet with any TA in the tutor room during the open hours. Your grader’s office hours are given above. Specific hours for the tutor room will be posted on https://www.mslc.osu.edu/about/location/128.

Student Responsibility:
You are responsible for your own learning. I am here solely to facilitate your learning and understanding of the discipline of statistics. We are here to help you learn the material, but learning the material is ultimately up to you. This includes:
• attending classes or getting notes from others if you miss class;
• asking questions when you have them, either in class or out of class;
• doing the assigned homework on time and participating in class;
• coming to my office hours or contacting me by e-mail if you are having difficulties;
• going to the 427/428 graders office hours; and
• trying to keep up-to-date with the course material.

Tentative Course Schedule:

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<thead>
<tr>
<th>M</th>
<th>W</th>
<th>F</th>
<th>M</th>
<th>W</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 28</td>
<td>Intro and overview</td>
<td>M May 2</td>
<td>Section 3.6</td>
<td></td>
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<td>March 30</td>
<td>Section 2.1</td>
<td>W May 4</td>
<td>Sections 4.1, 4.2</td>
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<tr>
<td>April 1</td>
<td>Section 2.2</td>
<td>F May 6</td>
<td>Section 4.2</td>
<td></td>
<td></td>
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<tr>
<td>April 4</td>
<td>Section 2.3</td>
<td>M May 9</td>
<td>Sections 4.2, 4.3</td>
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<tr>
<td>April 6</td>
<td>Section 2.3</td>
<td>W May 11</td>
<td>Section 4.3</td>
<td></td>
<td></td>
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<tr>
<td>April 8</td>
<td>Section 2.4</td>
<td>F May 13</td>
<td>Review for Exam-II</td>
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<td></td>
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<tr>
<td>April 11</td>
<td>Sections 2.4, 2.5</td>
<td>M May 16</td>
<td>Midterm Exam-II</td>
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<td></td>
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<tr>
<td>April 13</td>
<td>Sections 3.1, 3.2</td>
<td>W May 18</td>
<td>Section 4.4</td>
<td></td>
<td></td>
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<tr>
<td>April 15</td>
<td>Section 3.2</td>
<td>F May 20</td>
<td>Section 5.1</td>
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<td>April 18</td>
<td>Review for Exam-I</td>
<td>M May 23</td>
<td>Section 5.1</td>
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<tr>
<td>April 20</td>
<td>Midterm Exam-I</td>
<td>W May 25</td>
<td>Section 5.1, 5.2</td>
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<tr>
<td>April 22</td>
<td>Section 3.3</td>
<td>F May 27</td>
<td>Sections 5.2, 5.4</td>
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<tr>
<td>April 25</td>
<td>Section 3.3</td>
<td>M May 30</td>
<td>No classes-Memorial Day</td>
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<tr>
<td>April 27</td>
<td>Section 3.4</td>
<td>W June 1</td>
<td>Section 5.4, Review</td>
<td></td>
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<tr>
<td>April 29</td>
<td>Section 3.5</td>
<td>F June 3</td>
<td>Review for Final Exam</td>
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<td>W June 8</td>
<td>Final Exam 9:30 AM</td>
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Exams Schedule:

Midterm - I: Wednesday, April 20, (Regular class)
Midterm - II: Monday, May 16, (Regular class)
Final Exam: Wednesday, June 8, 9:30 – 11:18 AM. (Regular class room)

Make-up examination will be given only if a student has a written medical excuse signed by a doctor or other health professional and if he/she contacts me prior to the exam.

No early final exam will be given, so make your travel plans accordingly.

Homework Tentative Due Dates:

<table>
<thead>
<tr>
<th>HW</th>
<th>Due Dates</th>
<th>Topics Covered</th>
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<tbody>
<tr>
<td>1</td>
<td>Mon April 11</td>
<td>Sections 2.1-2.3</td>
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<tr>
<td>2</td>
<td>Mon April 18</td>
<td>Sections 2.4-2.5</td>
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<tr>
<td>3</td>
<td>Mon April 25</td>
<td>Sections 3.1-3.3</td>
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<tr>
<td>4</td>
<td>Mon May 2</td>
<td>Sections 3.4-3.5</td>
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<td>5</td>
<td>Mon May 9</td>
<td>Sections 3.6, 4.1</td>
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<tr>
<td>6</td>
<td>Mon May 23</td>
<td>Sections 4.2-4.4</td>
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<tr>
<td>7</td>
<td>Wed June 1</td>
<td>Sections 5.1, 5.2, 5.4</td>
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(Assignments will be posted on the web site and announced in the class.)