Syllabus for STAT 416 Spring 09: Probability

January 13, 2009

Course Number: STAT 41600 Section 001 (27847)
Lectures: Tuesdays and Thursdays 9:00-10:15am at Rec 315
Textbook: A First Course in Probability, by Sheldon Ross, 7th edition (required)
Course webpage: http://www.stat.purdue.edu/~skirshne/teaching/STAT416

Instructor: Professor Sergey Kirshner
Email: skirshne@stat.purdue.edu
Office Hours: Tuesdays 10:30-11:30am, Fridays 2:30-3:30pm in HAAS 118 or by appointment

Course Description
This introductory course will cover the basics of probability theory targeted for undergraduate students in statistics, mathematics, and actuarial sciences. Among the topics covered will be

- key concepts of probability, conditional probability, independence, random variable, distribution, expected value and variance, moments and moment generating functions;
- standard discrete and continuous distributions (binomial and multinomial, geometric, Poisson, Zipf, uniform, normal, exponential, gamma, beta), their properties, and some of their uses;
- laws of large numbers and central limit theorem.

For students interested in taking actuarial exams, the course will cover topics appearing on Exam 1/P.

Evaluation
The course will be evaluated on a point system. There will be weekly homeworks, tri-weekly quizzes, two midterm exams, and one comprehensive final. The breakdown of the credit is displayed in the table below.

<table>
<thead>
<tr>
<th></th>
<th>Number of assignments</th>
<th>Points each</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>12-2=10 (two lowest scores dropped)</td>
<td>15</td>
<td>150</td>
</tr>
<tr>
<td>Quiz</td>
<td>4-1=3 (one lowest score dropped)</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>Midterm</td>
<td>2</td>
<td>175</td>
<td>350</td>
</tr>
<tr>
<td>Final</td>
<td>1</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td></td>
<td>1000</td>
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</tbody>
</table>

In addition to points above, extra points may be earned by solving extra credit problems on the midterm and final exams. **Update: February 24, 2009.** If 0.5 times the score on the Final Exam is higher than the score on the Midterm 1, 0.5 times the score on the Final Exam will be used instead of the score on the Midterm 1 for the calculation of the final grade.
Grading

The final grades will be awarded according to the total number of points earned:

- A-: 870 – 899
- A: ≥ 900
- B-: 770 – 799
- B: 800 – 829
- B+: 830 – 869
- C-: 650 – 699
- C: 700 – 729
- C+: 730 – 769
- D-: 500 – 549
- D: 550 – 599
- D+: 600 – 649
- F: < 500

Policies

You are expected to read the material in the textbook. The material in the lectures will complement that in the textbook rather than just repeat it. Anything discussed in class and the sections of the textbook covering corresponding material is fair game for the exams and quizzes.

Homeworks will be collected at the beginning of class on their due dates and must represent your individual effort. No late homeworks will be accepted.

Quizzes (scheduled in advance) will be administered during the first 15 minutes of the class. Since your lowest quiz score will be dropped, missed quizzes will not be made up.

Exams (both midterms and the final) will be shared with the other section of the course (taught by Dr. Alice J. Vatamanelu). Both midterm exams will take place in the evening, on February 16 (MONDAY), 6:30-7:30pm, and on April 9 (THURSDAY), 6:30-7:30pm, both in MATH 175. Regularly scheduled lectures on February 17 and April 9 will be canceled as a result. Midterms will be 60 minutes long; the final be 120 minutes long. Exams can be rescheduled only in exceptional circumstances.

No study materials are allowed at the exams or quizzes (closed book, closed notes). Simple (non-programmable) calculators are permitted. Bring your Purdue ID to all exams.

Cheating will not be tolerated. If caught, your punishment may range from a score of zero on an assignment to a failing grade in the course with a referral to the University disciplinary committee. (See regulations for student conduct, http://www.purdue.edu/univregs/pages/stu_conduct/stu_regulations.html) Please don’t resort to cheating; if you are having trouble in the course, please talk to the instructor (me) or the teaching assistant.

Finally,

I hope you enjoy the course. If you have comments or suggestions, I want to hear them. Please drop me a line or just stop by.