Math2200: Elementary Probability and Statistics

Instructor: Professor Nan LIN
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Email: nlin@wustl.edu
Time and location: 11am-12:45pm Mon-Fri at Room 14, Eads Hall
Office hours: By appointment, before and after class and as needed

General information


Excel Now Tutorial: Students without prior knowledge of Excel may purchase Excel Now at the website http://excelnowtutorial.com/. This tutorial provides a very comprehensive illustration on Excel. It will take several hours, but will very likely save you 10 times the amount of time you put into it over the course.

Class webpage: All homework assignments, handouts, and other information will be available on Blackboard (http://bb.wustl.edu/). Students should check the class webpage frequently for updates.

Course Description

This introductory course for probability and statistics covers topics including data summary (descriptive statistics and graphics), data collection, elementary probability theory, sampling distribution, confidence interval, hypothesis testing, linear regression, and analysis of variance (if time allows). The goal is to provide students with a basic sense of statistical modeling and inference as well as the ability to perform basic statistical analysis of real data.

Note that this is not a course for Math majors or minors. If you have taken Math 132 or Math 233 then you should seriously consider taking Math 3200 instead. In this course, math formulas will often be presented in class without proofs.

Prerequisite
Math 131 or equivalent.

Computing

Statistical analysis of real data is practical only in the context of computer statistical packages. In the past, the TI-83 calculator has been used in this class for computation. An important reason is that it seems the only viable computing tool when holding classroom exams for more than 100 students. In the summer, with a much smaller class, we will have the chance to allow computers during exams, and Excel is a good choice for its popularity in the real world. Besides the built-in Analysis ToolPak in Excel, we may also use XLStatistics available at http://www.deakin.edu.au/rodneyc/XLStatistics/. The instruction will be based on Excel under the Windows operating system.

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Homework, Exams and Grades

There will be homework assignments everyday. But due to the fast pace of summer courses, these assignments will not be graded and the instructor will provide solutions so students can check their performance. There will be five exams, including the final exam. The first four exams are 45mins each and will be given at the end of the class on each Friday in the first four weeks. The final exam is accumulative and will be held on Friday, July 11.

Your course grade depends on your attendance and performance on the exams. The percentage grade is first calculated using the following formula.

\[
\text{Percentage grade} = 10\% \times \text{Attendance} + 15\% \times \text{Exam 1} + 15\% \times \text{Exam 2} + 15\% \times \text{Exam 3} + 15\% \times \text{Exam 4} + 30\% \times \text{Final}.
\]

Then the final letter grade is given according to the following scale. (If you are registered pass/fail, you must average at least 70 to pass.)

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Letter Grade</th>
</tr>
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<tbody>
<tr>
<td>[95, 100]</td>
<td>A+</td>
</tr>
<tr>
<td>[83, 85)</td>
<td>B+</td>
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<tr>
<td>[65, 75)</td>
<td>C</td>
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<tr>
<td>[87, 95)</td>
<td>A</td>
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<tr>
<td>[77, 83)</td>
<td>B</td>
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<tr>
<td>[60, 65)</td>
<td>D</td>
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<tr>
<td>[85, 87)</td>
<td>A−</td>
</tr>
<tr>
<td>[75, 77)</td>
<td>B−</td>
</tr>
<tr>
<td>&lt; 60</td>
<td>Fail</td>
</tr>
</tbody>
</table>

Learning Tips
1. Try to show up in all the lectures. Make good notes.
2. Ask questions in class. Your questions may be others’ as well. No questions are too elementary, and all deserve to be answered.
3. Discuss with your classmates about your questions. It is perfectly acceptable to work together on homework assignments.
4. Finish homework in time.

Class Policies
1. Attendance: An attendance sheet will be distributed at the beginning of each class. Your attendance needs to be evidenced by your signature on the sheet. Absence due to illness is required to be justified by a doctor’s note.
2. Exam conflicts: No make-up exams will be offered. Students having conflicts with any exam must inform the instructor one week in advance. If a student misses one of the first four exams, the other three exams will weigh 20% in the calculation of the final grade. Students who either miss two out of the first four exams, or the final exam, no matter for what reason, will be given a grade of ‘Incomplete’.
3. Collaboration: I encourage discussion of homework in broad conceptual terms where one student is trying to educate another without giving away the answer, but students must be able to independently solve the problem after discussion, which is expected in the exams.
4. Academic Integrity: All students are expected to adhere to the university’s academic integrity policy. Any student who is found to have cheated on an exam will receive a zero score for that work, regardless of the extent of the offense.