About applied problem sets

We usually have four to six problem sets. They include hands-on work with real data and some theoretical work as well. Some problems are designed to make the class lessons take root by having you see how things work out. Others have you explore things that our limited classroom time does not cover.

Some of the problems in this course have been used (debugged even) before. It is an honor code violation to use solutions from earlier years. Also it defeats the main purpose of these problem sets, which is to learn by doing.

Mechanics

Problem sets are announced over canvas. You will find the PDF of them on canvas. When you have completed your problem set upload a PDF through gradescope.

Late work

We apply a penalty to late work. It is 10% per day late. The boundary between days is at midnight. Work with a date stamp prior to midnight on the due date is not late. Once solutions are handed out, it becomes too late to get credit for handing something in.

It is very common that something comes up around a due date. Illnesses, interviews and sudden travel all occur. We will keep track of your late days. At the end of the quarter, 3 days of lateness are forgiven. We choose the 3 forgiven days to minimize your penalty.

Group work

Some questions are to be done by each student individually. Others may be done in teams of two or three students. For group work, discuss problems with your group. The point of group work is to exchange ideas and learn about the problem from each other. It is not to divide and conquer with each problem from getting done by one person!

For questions done in groups, each student has to write up their own version, and acknowledge their team members. (Just list who they were.)

Writeups

Write your answers up carefully, clearly and legibly. The pages should be stapled together. Long passages of text should be typeset (LaTeX is by far the best). If necessary, you can write up your mathematics by hand, but be sure that it is clear and dark and large enough to read.

Carefully select what you turn in. Use an appendix to show any code that needs to be shown. If you're asked to write some code, then put it in there. Routine calls to plotting functions et cetera don't need to be handed in.

Correctness and accuracy are the most important criteria in grading. But clarity also counts. Typically in applied settings you are writing for a non-statistician. A better organized and clearer writeup can get a better grade. A thoughtfully prepared data plot can be worth more than a sloppy one that comes out of the software by default.

The applied setting is unlike mathematics. Two students might make different but reasonable assumptions and end up with different answers that tie for the top grade on a question. Points are taken off for mistakes, or relatively poor choices, or inadequate reasoning. Points may be added for answers that are somehow much better than expected.

TA help

Please don't ask the TAs to tell you how to do your problem set. It is fair to ask them about the statistical concepts underlying the problem. They can explain the statistical issues to you until you're able to approach the problem yourself.

It is also proper to ask the TAs what the problems mean. But it is even better to ask me. The best time to ask is just before class. Then I might be able to clear things up for others too.

If your line of questioning seems to be too much like just asking how to do xyz, then the TAs and I may well decide that we cannot answer you directly.

In statistics it often happens that figuring out what you're supposed to do is actually the main part of what you're supposed to do. It often happens that choosing is hard but implementing is easy.

Errors in the data

Sometimes there are errors in the data: some numbers are clearly wrong. I've never purposely put in a wrong number, but when I see one in a data

source, I usually don't fix it. Being alert for possible wrong data is part of doing statistics. You are expected to detect and remove obvious errors from the data. If you're suspicious that something might be wrong with the data, describe it and give reasons for your suspicions. Then decide whether or not to change the data and give (brief) reasons.

Errors in the problem sets

If you find a typographical or other error in the problem set, please tell me as soon as you can. I'll check it and if necessary send an email to the class about it. Be sure you gave a working email address to Axess.

Solutions

Pieces of your work may be clipped into the solutions, with attribution, when it is to be held up as an example of a good (or best) solution. (Your work will not be shown as an example of a mistake.) If necessary, common mistakes will be described some other way.