

Exam 02 date: Monday, 2018-10-05

Topics:

1. data – types, roles.
2. summary statistics – interpretation, R code to produce them
3. plots – types, details, keywords, R code to produce them
4. probability – conditional, law of total, Bayes' Theorem, independence
5. random variables – types, roles, simple probability models: normal, Bernoulli, uniform, exponential
6. parameters of random variables – expected value, variance, and their properties
7. probability calculations from known random variables – area under curve and arithmetic with such
8. likelihood – what, why, how, and in R
9. sampling distributions – point estimators, standard error, and the Central Limit Theorem
10. inference – confidence intervals, hypothesis tests, and when/how they connect, p-value, test statistics, and level of significance
11. t-tests – t-distribution, degrees of freedom, one and two sample tests
12. ANOVA – F-distribution, degrees of freedom, assumption checking, hypotheses, determining which mean is different

Study tips:

1. Review lecture notes, homework, and examples there within
2. Reproduce examples on your own machine
3. Build off of examples to confirm equations presented
4. Repeat problems/exercises from scratch
5. Repeat computational problems in R
6. Bring questions to class Thursday before Exam 02
7. Check out topics/problems from the recommended free book: [OpenIntro statistics](#)