
AGSC 137
Agricultural Statistics
Spring 2024

Second Examination Study Guide
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- Understand the need for probability and its potential application in statistical inference.
- Know how relative frequency can be applied in establishing probabilities.
- Understand the difference among experiment, outcome, and event.
- Have a basic understanding of sets and subsets as well as Venn diagrams.
- Understand the three basic rules of probability.
- Understand the similarities between frequency distributions and probability distributions.
- Understand how to work with the covered discrete and continuous probability distributions.
- Know how to use the binomial, Poisson, and normal probability distributions to solve problems.
- Understand how to transform normally-distributed data to benefit from the standard normal distribution curve.
- Understand the difference between different sampling methods, including simple random, systematic, stratified, cluster, quota, judgement, and convenience sampling.
- Understand the meaning of the sampling error of the mean and to calculate it.
- Understand the value and importance of a sampling distribution.
- Know the meaning of the Central Limit theorem and how it is applied in estimating population mean and standard error of the mean.
- Understand the meaning of margin of error.
- Know how to define a confidence interval from a sample for a population with an unknown mean and a known standard deviation.
- Know how to define a confidence interval from a sample for a population with unknown mean and standard deviation.
- Know how to define a confidence interval from a sample for a population with unknown standard deviation.
- Know how to define a confidence interval for proportions under different sample sizes.
- Understand that hypothesis testing involves the application of a procedure for determining statistical significance.
- Understand that hypothesis testing is based on probability.
- Understand that hypothesis testing with a single sample mean is an extension of finding confidence intervals and then determining the probability that our sample came from a population with the specified parameter.
- Understand the difference between the null and alternative hypothesis.
- Know the two general procedures followed in hypothesis testing and that probabilities are used to evaluate statistical significance.

Note: The second exam will have to be completed online under Blackboard. The exam will involve multiple choice questions and fill-in-the-blank questions with the same setup as the weekly online quizzes.

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