Math 153-01
Final Exam Information

The final exam is scheduled for Thursday, May 16, 10am–11:50am, in Room 2625. Special office hours during finals week:

- Monday, May 13: 12:00pm – 1:00pm
- Tuesday, May 14: 10:00am – 12:00pm
- Wednesday, May 15: 10:00am – 12:00pm

Skills Checklist

1. Read all types of statistical graphs and tables.
2. Compute and interpret the mean, median, and mode of a data set. Determine which is the most appropriate measure of center in a given situation.
3. Compute weighted means.
4. Solve problems involving means and sums of data values.
5. Compute the range, variance, and standard deviation of a data set.
6. Use the standard deviation to determine unusually small or large data values.
7. Compute the coefficient of variation.
8. Compute z-scores, percentiles, and quartiles.
9. Find the data value at a certain percentile.
10. Determine the 5-number summary and sketch the boxplot (or modified boxplot) for a given data set.
11. Compare and interpret boxplots.
12. List the sample space for an experiment and identify events.
13. Know the difference between theoretical and experimental probabilities.
14. Determine the theoretical probability of an event.
15. Understand and use the properties of probability (complements, unions, intersections, independence, etc.).
16. Draw tree diagrams and determine probabilities in multistage experiments.
17. Compute conditional probabilities and determine if events are independent.
18. Determine odds and expected values.
19. Determine the probability distribution for a random variable and compute the corresponding mean and standard deviation.

20. In a probability distribution, determine unusually small and large values of the random variable.

21. Determine whether a random variable is discrete or continuous.

22. Solve problems involving binomial probability distributions, including those involving the mean, standard deviation, and unusual values.

23. Solve problems involving Poisson probability distributions, including those involving the mean, standard deviation, and unusual values.

24. Solve problems involving normal probability distributions, including those involving the mean, standard deviation, unusual values, and inverse normal look-ups.

25. Determine a sampling distribution. Be familiar with the kinds of sampling distributions that are normal or approximately normal.

26. Solve sampling mean problems involving the Central Limit Theorem and the normal distribution.

27. Find the confidence interval estimate for a population proportion.

28. Find the confidence interval estimate for a population mean (with σ known or unknown).

29. Compute z and t critical values.

30. For a confidence interval, determine the sample size required to obtain a given margin of error.

31. In a given hypothesis testing situation, determine the null and alternative hypotheses.

32. In a given hypothesis testing situation, identify the appropriate sampling distribution and test statistic. Compute the test statitistic and the P-value.

33. Carry out the hypothesis test to test a claim about a population proportion or mean (with σ known or unknown).

34. For paired quantitative data, compute and interpret the linear correlation coefficient and the regression equation.

35. Use the P-value to determine whether a linear relationship exists.

36. Use the regression equation to make predictions.