## <u>Math 153-02</u>

Final Exam Information

The final exam is Thursday, May 19, 10:00am–11:50am, in Room 2625. Special office hours during finals week:

- Monday, May 16: 9:00am–10:00am & 12:00pm–1:00pm
- Tuesday, May 17: 12:00pm–1:00pm
- Thursday, May 19: 9:00am–10:00am & 12:00pm–1:00pm

## 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  $\sigma$  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 statistic and the *P*-value.
- 33. Carry out the hypothesis test to test a claim about a population proportion or mean (with  $\sigma$  known or unknown).