Exam 1 will cover Chapters 1, 2, 3, and 4.

Please remember that answers to all odd exercises are in the back of the book.

Answers to Check Your Understanding (CYU) are in the back of each chapter.

Chapter 1: Basic ideas

- Definitions of population and sample.
- Simple random sampling and types of samples of convenience (cluster, systematic, etc.)
- Difference between a statistic and a parameter.
- Types of data. (1.2)
- Basic design of experiments. (1.3)
- Suggested examples:
  - 1.1: all examples and all CYU problems.
  - 1.2: all examples and all CYU problems.
  - 1.3: 1.14-1.16 and all CYU problems.
- Suggested exercises:
  - 1.1: 7-12, 17-20, 21-24, 25-30
  - 1.2: 5-10, 11-14, 15-24, 25-32, 33-40, 43, 45, 47
  - 1.3: 5-10

Chapter 2: Graphical summaries of data

- Know how to construct frequency and relative frequency distributions for qualitative data, both using Minitab and by hand.
- Use the distributions to construct bar and pie charts.
- Be able to read bar and pie charts.
- Know how to construct frequency and relative frequency distributions for quantitative data, both using Minitab and by hand. Know how to divide data into classes (bins).
- Use frequency and relative frequency distributions to make a histogram with Minitab or by hand.
- Be able to read a histogram. Understand skewness, symmetry, and modality.

- Suggested examples:
  - 2.1: all examples and all CYU problems.
  - 2.2: 2.10, 2.11, 2.12, and 2.13. CYU problems 1, 2, 3.
- Suggested exercises:
  - 2.1: 5-8, 9-12, 13, 15, 17, 19, 23, 25
  - 2.2: 5-8, 9-12, 13-18, 19, 21, 23, 27, 29

Chapter 3: Numerical summaries of data

- Understand and be able to compute the mean and median for quantitative data.
- Understand and be able to compute the range, variance, and standard deviation for quantitative data. Difference between sample and population variance/standard deviation.
- Use the empirical rule and Chebyshev's inequality for populations. Be able to compute one-, two-, three- standard deviation intervals.
- Be able to compute and interpret z-scores.
- Compute quartiles and the five-number summary using Minitab. Be able to find outlier boundaries and draw/interpret boxplots.
- Suggested examples:
  - 3.1: 3.1, 3.2, 3.3, 3.4, 3.5. CYU problems 1-5.
  - 3.2: 3.10, 3.11, 3.12, 3.15, 3.17, 3.18, 3.19, 3.20. CYU problems 1-7.
  - 3.3: focus on worksheets and in-class examples. 3.30, 3.31
- Suggested exercises:
  - 3,1: 7-10, 11-14, 15-18, 23-26, 31, 32, 33, 41, 43, 73.
  - 3.2: 9-12, 13-16, 17, 27, 29, 31, 41-48, 49-62
  - 3.3: 5-8, 9-12, 13-14, focus on worksheets and in-class examples.

Chapter 4: Summarizing bivariate data

- Be able to compute and interpret a correlation coefficient.
- Using Minitab to compute the regression line for data.
- Making predictions from and interpreting the regression line.
  - 4.1: 4.1. CYU problems 1-7.
  - 4.2: 4.3, 4.4, 4.5, 4.6. CYU problems 1-4.
- Suggested exercises:
  - 4.1: 9-12, 13-16, 17-20, 21-24, 25-30, 31, 33, 35.
  - 4.2: 5-7, 13-16, 17, 19, 24, 28.

The End.