

## Detailed Licensing

### Overview

**Title:** [Math 40: Statistics and Probability](#)

**Webpages:** 192

**Applicable Restrictions:** Noncommercial

**All licenses found:**

- [CC BY 4.0](#): 61.5% (118 pages)
- [Undeclared](#): 25.5% (49 pages)
- [Public Domain](#): 6.3% (12 pages)
- [CC BY-NC-SA 4.0](#): 3.1% (6 pages)
- [CC BY-SA 3.0](#): 2.1% (4 pages)
- [CC BY-SA 4.0](#): 1.6% (3 pages)

### By Page

- [Math 40: Statistics and Probability](#) - [Undeclared](#)
  - [Front Matter](#) - [Undeclared](#)
    - [Front Matter](#) - [Undeclared](#)
    - [TitlePage](#) - [Undeclared](#)
    - [InfoPage](#) - [Undeclared](#)
    - [TitlePage](#) - [Undeclared](#)
    - [InfoPage](#) - [Undeclared](#)
    - [Table of Contents](#) - [Undeclared](#)
    - [Licensing](#) - [Undeclared](#)
    - [Back Matter](#) - [Undeclared](#)
    - [Index](#) - [Undeclared](#)
  - [1: The Nature of Statistics](#) - [CC BY 4.0](#)
    - [Front Matter](#) - [Undeclared](#)
    - [TitlePage](#) - [Undeclared](#)
    - [InfoPage](#) - [Undeclared](#)
    - [1.0: Introduction](#) - [CC BY 4.0](#)
    - [1.1: Descriptive and Inferential Statistics](#) - [CC BY 4.0](#)
    - [1.2: Variables and Types of Data](#) - [CC BY 4.0](#)
      - [1.2.1: Levels of Measurement](#) - [CC BY 4.0](#)
    - [1.3: Data Collection and Sampling Techniques](#) - [CC BY-SA 3.0](#)
    - [1.5: Computers and Calculators](#) - [Undeclared](#)
      - [1.5.1: Using Spreadsheets for Statistics](#) - [Undeclared](#)
    - [1.4: Experimental Design and Ethics](#) - [CC BY 4.0](#)
      - [1.4.1: More on Experiments](#) - [CC BY-SA 3.0](#)
      - [1.4.2: Observational Studies and Sampling Strategies](#) - [CC BY-SA 3.0](#)
    - [1.E: Sampling and Data \(Optional Exercises\)](#) - [CC BY 4.0](#)
    - [Back Matter](#) - [Undeclared](#)
    - [Index](#) - [Undeclared](#)
  - [2: Frequency Distributions and Graphs](#) - [CC BY 4.0](#)
    - [Front Matter](#) - [Undeclared](#)
    - [TitlePage](#) - [Undeclared](#)
    - [InfoPage](#) - [Undeclared](#)
    - [2.2: Histograms, Ogives, and Frequency Polygons](#) - [CC BY-SA 4.0](#)
      - [2.2.1: Frequency Polygons and Time Series Graphs](#) - [CC BY 4.0](#)
    - [2.3: Other Types of Graphs](#) - [CC BY-SA 4.0](#)
      - [2.3.1: Stem-and-Leaf Graphs \(Stemplots\), Line Graphs, and Bar Graphs](#) - [CC BY 4.0](#)
      - [2.3.2: Dot Plots](#) - [Public Domain](#)
      - [2.3.3: Guide to Fairly Good Graphs](#) - [Undeclared](#)
      - [2.3.4: Presenting Data in Tables](#) - [Undeclared](#)
    - [2.1: Organizing Data - Frequency Distributions](#) - [CC BY 4.0](#)
    - [2.E: Graphs \(Optional Exercises\)](#) - [CC BY 4.0](#)
    - [2.0: Prelude to Graphs](#) - [CC BY 4.0](#)
    - [Back Matter](#) - [Undeclared](#)
    - [Index](#) - [Undeclared](#)
  - [3: Data Description](#) - [CC BY 4.0](#)
    - [Front Matter](#) - [Undeclared](#)
    - [TitlePage](#) - [Undeclared](#)
    - [InfoPage](#) - [Undeclared](#)
    - [3.0: Prelude to Descriptive Statistics](#) - [CC BY 4.0](#)
    - [3.1: Measures of the Center of the Data](#) - [CC BY 4.0](#)
      - [3.1.1: Skewness and the Mean, Median, and Mode](#) - [CC BY 4.0](#)
    - [3.2: Measures of Variation](#) - [CC BY 4.0](#)
      - [3.2.1: Coefficient of Variation](#) - [Undeclared](#)

- 3.2.2: The Empirical Rule and Chebyshev's Theorem - CC BY-NC-SA 4.0
- 3.3: Measures of Position - CC BY 4.0
  - 3.3.1: Measures of Location- Deciles - Undeclared
  - 3.3.2: Z-scores - CC BY-NC-SA 4.0
- 3.4: Exploratory Data Analysis - CC BY 4.0
- 3.E: Descriptive Statistics (Optional Exercises) - CC BY 4.0
  - 3.E: Measures of Position (Optional Exercises) - CC BY 4.0
- Back Matter - Undeclared
  - Index - Undeclared
- 4: Probability and Counting - CC BY 4.0
  - Front Matter - Undeclared
    - TitlePage - Undeclared
    - InfoPage - Undeclared
  - 4.1: Sample Spaces and Probability - CC BY 4.0
    - 4.1.1: Introduction to Probability - CC BY 4.0
    - 4.1.2: Terminology - CC BY 4.0
  - 4.2: Independent and Mutually Exclusive Events - CC BY 4.0
  - 4.3: The Addition and Multiplication Rules of Probability - CC BY 4.0
    - 4.3.1: Contingency Tables - CC BY 4.0
    - 4.3.2: Tree and Venn Diagrams - CC BY 4.0
  - 4.4: Counting Rules - CC BY 4.0
    - 4.4.1: Permutations - CC BY 4.0
    - 4.4.2: Permutations with Similar Elements - CC BY 4.0
    - 4.4.3: Combinations - CC BY 4.0
  - 4.5: Probability And Counting Rules - CC BY 4.0
  - 4.E: Probability Topics (Optional Exercises) - CC BY 4.0
    - 4.E: Combinations (Optional Exercises) - CC BY 4.0
    - 4.E: Permutations (Optional Exercises) - CC BY 4.0
    - 4.E: Permutations with Similar Elements (Optional Exercises) - CC BY 4.0
    - 4.E: Probability Using Tree Diagrams and Combinations (Optional Exercises) - CC BY 4.0
    - 4.E: Tree Diagrams and the Multiplication Axiom (Optional Exercises) - CC BY 4.0
  - Back Matter - Undeclared
    - Index - Undeclared
- 5: Discrete Probability Distributions - CC BY 4.0
  - 5.0: Prelude to Discrete Random Variables - CC BY 4.0
  - 5.1: Probability Distribution Function (PDF) for a Discrete Random Variable - CC BY 4.0
  - 5.2: Mean or Expected Value and Standard Deviation - CC BY 4.0
  - 5.3: Binomial Distribution - CC BY 4.0
    - 5.4.1: Binomial Distribution Formula - CC BY-SA 3.0
  - 5.E: Discrete Random Variables (Optional Exercises) - CC BY 4.0
- 6: Continuous Random Variables and the Normal Distribution - CC BY 4.0
  - 6.0: Introduction - CC BY 4.0
    - 6.0.1: Continuous Probability Functions - CC BY 4.0
    - 6.0.2: The Uniform Distribution - CC BY 4.0
  - 6.1: The Normal Distribution - CC BY 4.0
    - 6.1.1: The Standard Normal Distribution - CC BY 4.0
  - 6.2: Applications of the Normal Distribution - CC BY 4.0
  - 6.3: The Central Limit Theorem - CC BY 4.0
  - 6.4: Normal Approximation to the Binomial Distribution - CC BY 4.0
  - 6.E: The Normal Distribution (Optional Exercises) - CC BY 4.0
    - 6.E: The Central Limit Theorem for Sample Means (Optional Exercises) - CC BY 4.0
    - 6.E: The Standard Normal Distribution (Optional Exercises) - CC BY 4.0
- 7: Confidence Intervals and Sample Size - CC BY 4.0
  - 7.1: Confidence Intervals - CC BY 4.0
  - 7.2: Confidence Intervals for the Mean with Known Standard Deviation - CC BY 4.0
  - 7.3: Confidence Intervals for the Mean with Unknown Standard Deviation - CC BY 4.0
  - 7.4: Confidence Intervals and Sample Size for Proportions - CC BY 4.0
  - 7.5: Confidence Intervals (Summary) - CC BY 4.0
  - 7.E: Confidence Intervals (Optional Exercises) - CC BY 4.0
    - 7.E: Confidence Intervals for the Mean with Known Standard Deviation (Optional Exercises) - CC BY 4.0
- 8: Hypothesis Testing with One Sample - CC BY 4.0
  - 8.1: Steps in Hypothesis Testing - CC BY 4.0
    - 8.1.1: Null and Alternative Hypotheses - CC BY 4.0

- 8.1.2: Outcomes and the Type I and Type II Errors - *CC BY 4.0*
  - 8.1.3: Distribution Needed for Hypothesis Testing - *CC BY 4.0*
  - 8.1.4: Rare Events, the Sample, Decision and Conclusion - *CC BY 4.0*
  - 8.1.5: Additional Information on Hypothesis Tests - *CC BY 4.0*
- 8.2: Hypothesis Test Examples for Means - *CC BY 4.0*
- 8.3: Hypothesis Test Examples for Means with Unknown Standard Deviation - *CC BY 4.0*
- 8.4: Hypothesis Test Examples for Proportions - *CC BY 4.0*
- 8.E: Hypothesis Testing (Optional Exercises) - *Undeclared*
  - 8.E: Distribution Needed for Hypothesis Testing (Optional Exercises) - *CC BY 4.0*
  - 8.E: Hypothesis Testing with One Sample (Optional Exercises) - *CC BY 4.0*
  - 8.E: Null and Alternative Hypotheses (Optional Exercises) - *CC BY 4.0*
  - 8.E: Outcomes and the Type I and Type II Errors (Optional Exercises) - *CC BY 4.0*
  - 8.E: Rare Events, the Sample, Decision and Conclusion (Optional Exercises) - *CC BY 4.0*
- 9: Inferences with Two Samples - *CC BY 4.0*
  - 9.1: Prelude to Hypothesis Testing with Two Samples - *CC BY 4.0*
  - 9.2: Inferences for Two Population Means- Large, Independent Samples - *CC BY-NC-SA 4.0*
  - 9.3: Inferences for Two Population Means - Unknown Standard Deviations - *CC BY-NC-SA 4.0*
  - 9.4: Inferences for Two Population Means - Paired Samples - *CC BY-NC-SA 4.0*
  - 9.5: Inferences for Two Population Proportions - *CC BY-NC-SA 4.0*
  - 9.6: Which Analysis Should You Conduct? - *CC BY-SA 4.0*
  - 9.E: Hypothesis Testing with Two Samples (Optional Exercises) - *CC BY 4.0*
- 10: Correlation and Regression - *CC BY 4.0*
  - 10.0: Prelude to Linear Regression and Correlation - *CC BY 4.0*
    - 10.1.1: Review- Linear Equations - *CC BY 4.0*
    - 10.1.2: Scatter Plots - *CC BY 4.0*
  - 10.1: Testing the Significance of the Correlation Coefficient - *CC BY 4.0*
  - 10.2: The Regression Equation - *CC BY 4.0*
    - 10.2.1: Prediction - *CC BY 4.0*
  - 10.3: Outliers - *CC BY 4.0*
  - 10.E: Linear Regression and Correlation (Optional Exercises) - *CC BY 4.0*
    - 10.E: Linear Equations (Optional Exercises) - *CC BY 4.0*
    - 10.E: Outliers (Optional Exercises) - *CC BY 4.0*
    - 10.E: Prediction (Optional Exercises) - *CC BY 4.0*
    - 10.E: Scatter Plots (Optional Exercises) - *CC BY 4.0*
    - 10.E: Testing the Significance of the Correlation Coefficient (Optional Exercises) - *CC BY 4.0*
    - 10.E: The Regression Equation (Optional Exercise) - *CC BY 4.0*
- 11: Chi-Square and Analysis of Variance (ANOVA) - *CC BY 4.0*
  - 11.0: Prelude to The Chi-Square Distribution - *CC BY 4.0*
    - 11.0.1: Facts About the Chi-Square Distribution - *CC BY 4.0*
  - 11.1: Goodness-of-Fit Test - *CC BY 4.0*
  - 11.2: Tests Using Contingency tables - *Undeclared*
    - 11.2.1: Test of Independence - *CC BY 4.0*
    - 11.2.2: Test for Homogeneity - *CC BY 4.0*
    - 11.2.3: Comparison of the Chi-Square Tests - *CC BY 4.0*
  - 11.3: Prelude to F Distribution and One-Way ANOVA - *CC BY 4.0*
    - 11.3.1: One-Way ANOVA - *CC BY 4.0*
    - 11.3.2: The F Distribution and the F-Ratio - *CC BY 4.0*
    - 11.3.3: Facts About the F Distribution - *CC BY 4.0*
    - 11.3.4: How to Use Microsoft Excel® for Regression Analysis - *Undeclared*
  - 11.E: F Distribution and One-Way ANOVA (Optional Exercises) - *CC BY 4.0*
  - 11.E: The Chi-Square Distribution (Optional Exercises) - *CC BY 4.0*
- 12: Nonparametric Statistics - *Public Domain*
  - 12.1: Benefits of Distribution Free Tests - *Public Domain*
  - 12.2: Randomization Tests - Two Conditions - *Public Domain*
  - 12.3: Randomization Tests - Two or More Conditions - *Public Domain*
  - 12.4: Randomization Association - *Public Domain*
  - 12.5: Fisher's Exact Test - *Public Domain*
  - 12.6: Rank Randomization Two Conditions - *Public Domain*

- 12.7: Rank Randomization Two or More Conditions - *Public Domain*
- 12.8: Rank Randomization for Association - *Public Domain*
- 12.9: Statistical Literacy Standard - *Public Domain*
- 12.10: Wilcoxon Signed-Rank Test - *Undeclared*
- 12.11: Kruskal–Wallis Test - *Undeclared*
- 12.12: Spearman Rank Correlation - *Undeclared*
- 12.13: Choosing the Right Test - *Undeclared*
- 12.E: Distribution Free Tests (Exercises) - *Public Domain*
- 13: Appendices - *Undeclared*
  - 13.1: A | Statistical Table- Standard Normal (Z) - *CC BY 4.0*
  - 13.2: A | Statistical Table- Student t Distribution - *CC BY 4.0*
  - 13.3: A | Statistical Table- Chi-Square Distribution - *CC BY 4.0*
  - 13.4: A | Statistical Table- F Distribution - *CC BY 4.0*
  - 13.5: B | Mathematical Phrases, Symbols, and Formulas - *CC BY 4.0*
  - Back Matter - *Undeclared*
    - Index - *Undeclared*
    - Glossary - *Undeclared*
    - Detailed Licensing - *Undeclared*