

# Introductory Statistics textbook



**Introductory Statistics** is written for students with no prior experience in the study of statistics. It integrates interactive online activities, videos and podcasts, and – of course – the reading of theory.

Every chapter **begins** with a **story** that introduces students to each new topic within a real-world context. The stories open up questions and considerations that are then addressed throughout the chapter.

The theoretical content in each chapter uses a narrative approach to engage students. Clearly stated learning goals steer students' progress and help them see where they are heading.

Definitions, examples and key terms are highlighted to emphasise their importance, data is visually presented where appropriate and step-by-step guides connect the concepts of statistics with the formulas, calculations and other statistical tools available.

Each chapter **ends** with **online practice** questions that ask students to apply what they've learned to everyday situations. Employing algorithmic values and randomised contexts, the questions offer unlimited practice, personalised feedback and step-by-step solutions so that students immediately learn from their mistakes.

Every chapter guides students through a **seven-step** learning cycle.

With plenty of interactivity, multimedia and opportunities to check understanding, the cycle motivates students to engage deeply with the content being covered.

The strong structure of the textbook and its web-based delivery ensure it is effective in both online and face-to-face courses.

The principle of **gaining meaning** guides the textbook and its supplements, from the structure of the content to the manner in which the theory integrates with the interactive and multimedia content. The textbook is written from the perspective of "statistics is not technical, difficult or boring. It is a way of thinking."

Thinking – and trying to gain meaning from a situation – drives the structure of the textbook and makes it an interesting experience for students as they work through each chapter.



## What makes statistics students happy?

### Practice and feedback!

*"The homework was easy to follow and the feedback was great."*

*"The practice questions are great. The feedback given is very helpful, and being able to practice before doing the assessments was the best of any math website I have used."*

*"I love that I can use the practice problems as many times as I want and if I get a problem wrong they explain why what I answered was wrong. I also like that I can print out a problem that I find difficult or want to study more."*

*"I like the accessibility to questions with answers that make the learning experience fun to do and that you can do at your own pace and time."*

*"I liked that the feedback was explained in a great detail. It allowed me to understand the problem better and prepare me for more problems like it in the future."*

*"The practice problems were a huge help! It was great to see types of questions that we'd see on the graded assignment before we were actually graded on them. It also helped me figure out which parts of the material I was struggling with."*

## The author

"... focus on the student has been my guiding influence in the instructional design of this textbook - both through the path the content takes and through the integrated feature set that supports students.

Every chapter contains a complete set of learning tools and I would hope that in their entirety, students find them informative, supportive and fun. I certainly enjoyed writing and creating them.

I have written each component of each chapter (for example, the videos, online questions, pop quizzes) to motivate students to delve into the content and engage at a deeper level than other texts lead them to..."

Dr Shaun J Thompson



## Why digital?

The digital format has many advantages for students. It is a cost effective resource, using technology allows a high level of interactivity and feedback, using multimedia makes the information interesting and accessible, practice opportunities are embedded with the reading of content (with immediate feedback!) and it is one less thing to carry around.

## Instructor tools

- Summary slides are provided for each chapter and are fully editable.
- Algorithmic assessment links are available for every chapter of the textbook and can be customised.
- Regular reports keep you up to date with your students' progress and performance.
- The question bank can be used for final exam purposes.

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## Chapter 1: Introduction to Statistics

- 1.1 Statistical Concepts
- 1.2 Data
- 1.3 Collecting Data
- 1.4 Sample Design
- 1.5 Experimental Design

## Chapter 2: Presenting Data

- 2.1 Presenting Categorical Data
- 2.2 Presenting Numerical Data
- 2.3 Presenting Relationships

## Chapter 3: Measuring Data

- 3.1 Measures of Center
- 3.2 Measures of Variation
- 3.3 Measures of a Population
- 3.4 Measures of Relationship

## Chapter 4: Probability

- 4.1 A Notion of Probability
- 4.2 Formalising Probability
- 4.3 Calculating Probabilities
- 4.4 Conditional Probability
- 4.5 Bayes' Theorem

## Chapter 5: Probability Distributions

- 5.1 Discrete Random Variables
- 5.2 The Binomial Distribution
- 5.3 Continuous Random Variables
- 5.4 The Normal Distribution

## Chapter 6: Sampling Distributions

- 6.1 The Behavior of Samples
- 6.2 Sampling Distribution of the Mean
- 6.3 Sampling Distribution of the Proportion
- 6.4 Sampling Distributions and Inference

## Chapter 7: Estimation

- 7.1 The Philosophy of Estimation
- 7.2 The Methodology of Estimation
- 7.3 Confidence Interval for the Mean,  $\sigma$  Known
- 7.4 Confidence Interval for the Mean,  $\sigma$  Unknown
- 7.5 Confidence Interval for the Proportion

## Chapter 8: Hypothesis Testing

- 8.1 The Philosophy of Hypothesis Testing
- 8.2 The Basic Methodology of Hypothesis Testing
- 8.3 Completing the Methodology of Hypothesis Testing
- 8.4 Considerations in Hypothesis Testing
- 8.5 Hypothesis testing for Population Parameters
- 8.6 The P-value Approach to Hypothesis Testing

## Chapter 9: Comparing populations

- 9.1 Dealing with Two Population Parameters
- 9.2 Inferences about Two Population Proportions
- 9.3 Inferences about Two Population Means
- 9.4 Inferences about Mean Differences

## Chapter 10: Regression

- 10.1 Revisiting Relationships
- 10.2 Regression Fundamentals
- 10.3 The Simple Linear Regression Model
- 10.4 Multiple Regression

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## Reviewer access

We provide free review copies of our content to instructors.

Review access includes a full digital copy of the textbook, all e-learning materials including summary slides, videos and podcasts, and algorithmic homework.

Printed copies of the textbook are also available.

## How to adopt

If you would like to adopt the textbook, please contact us.

The algorithmic homework can be customised and we will discuss with you the approach that you would like to follow.

Our adoption pack includes all of the information you will need to introduce the textbook to your students

## Cost

The digital version of the text book, including all e-learning and supplements is \$62.48.

Students can also purchase a print license for \$9.90 or a printed and bound copy (in book format) for \$39.95.



## Introductory Statistics

Online and print-on-demand textbook

Quizzes to check understanding

Online practice questions

Detailed feedback

Videos and podcasts

Chapter summary slides

Easy to understand, conversational written style

Algorithmic assessment questions



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