



This course supports the Probability and Statistics I objective exam. It covers 4 competencies.

Introduction

Overview

Probability and Statistics I covers the knowledge and skills necessary to apply basic probability, descriptive statistics, and statistical reasoning, and to use appropriate technology to model and solve real-life problems. It provides an introduction to the science of collecting, processing, analyzing, and interpreting data. Topics include:

- creating and interpreting numerical summaries and visual displays of data;
- regression lines and correlation;
- evaluating sampling methods and their effect on possible conclusions;
- designing observational studies, controlled experiments, and surveys; and
- determining probabilities using simulations, diagrams, and probability rules.

College Algebra is a prerequisite for this course.

Getting Started

Welcome to Probability and Statistics I! Carefully working through the "Checkpoints" and "Did I Get This?" activities in the Modules within the online textbook prepares you for the preassessment and objective exam. Take every one of the Checkpoints a few times to see lots of items-the exam questions are adapted directly from them! Reviewing the items to carefully consider the wrong answer choices is also great preparation for the preassessment and objective exam: similar distractors will be on the exam items.

Teaching Dispositions Statement

Please review the [Statement of Teaching Dispositions](#).

Probability and Statistics I

This course covers the following competencies:

- Competency 214.1.2: Examining Relationships
The graduate evaluates the relationship between two variables through the creation and interpretation of numerical summaries and visual displays.
- Competency 214.1.3: Sampling Methods
The graduate evaluates the sampling methods used in studies including the effect they have on conclusions that can be made.
- Competency 214.1.4: Designing Studies
The graduate designs and conducts observational studies, controlled experiments, and



surveys to explore population characteristics.

- Competency 214.1.6: Determining Probability

The graduate determines the probability of events using simulations, diagrams, and probability rules.

Pacing Guide and Study Plan

Study Plan

Using the Interactive Textbook

Acrobatiq is an innovative learning resource provider focused on developing learning resources that produce a measurable improvement to learning.

[Launch Course](#)

When you've launched the textbook, use the icons in the upper-right corner for an informational tour and quick navigation to the starting page. Complete Unit 1 to learn how to use the interactive course. To learn the material needed to pass the course, complete all the activities in Modules 1 through 12, *with special emphasis on scoring well on the Checkpoints*. The "Did I Get This?" activities in the Modules are also extremely valuable because they are more interactive than the Checkpoints and designed to teach you the same material. Do lots of interaction with the textbook to see lots of items; the more you see, the better off you are, because the exam questions were adapted directly from them! Module 13 is a great source of extra problems when you've thoroughly mastered the Checkpoints. Reviewing the Checkpoint items to carefully consider the wrong answer choices (the distractors) is also great preparation for the preassessment and objective exam because they include similar distractors.

Graphing Calculator

Buy an appropriate calculator and familiarize yourself with how to use it. Refer to the [WGU Calculator and Scratch Paper/Whiteboard Guidelines](#) document for calculators permitted on WGU exams.

Calculator Skills

Every technology-training portion of the textbook has a drop-down menu where you can choose what technology to learn about; you should **always study the calculator version** because you will have access to your calculator on the objective exam and no other computational technology. It is recommended that you also learn how to use your computer software to do the technology work (for example, software such as Microsoft Excel, Minitab, the open source R software, or StatCrunch).

You need to know how to get your calculator to draw a scatterplot, find the correlation coefficient, and determine the regression line of the data for that scatterplot. This [Linear Regression and Correlation video](#) will help you learn how to do it on a calculator.



Key Formulas to Memorize

- The 1.5 (IQR) Criterion for outliers
- The standard deviation rule
- Probability Rules

Finding Supplemental Materials

Access the Course Community in the right margin and use the search engine on the word "supplemental" to find additional materials. These are useful, but not essential; we've found that most students master the course using only the materials in the Study Plan, but we want to make available the best alternative materials we know about.

Seek help when you need it

Your Course Instructor is an important resource for you to take advantage of as you progress through your study of geometry. Your Course Instructor will be able to help guide your learning, answer questions, and provide valuable information. Be sure to consult your Course Instructor frequently. Contact information is available in the Course Tips or Announcements.

Pacing Summary

- Week 1: Get Oriented, Self-Assessment, Modules 4 and 5 (2 Checkpoints)
- Week 2: Modules 5 and 6 (2 Checkpoints)
- Week 3: Module 7 (1 Checkpoints)
- Week 4: Modules 8, 9, and 10 (2 Checkpoints)
- Week 5: Modules 11, and 12 (4 Checkpoints)
- Week 6: Review, Preassessment, Objective Exam

Pacing Guide

Follow this plan carefully to complete the course in the suggested timeframe.

Get Oriented, Week 1

Take a half-hour to go through Unit 1, which includes 3 brief Modules to explain what the interactive course offers and the Big Picture for this course.

Self-Assessment, Week 1

If you have prior experience in Statistics, consider taking the preassessment immediately, and if you score near or above the passing mark, consider skipping to Week 6 and filling in the gaps to prepare for the Objective Exam instead of going through the course linearly.

One Categorical Variable (2 exam items), Week 1

Do Module 4 through page 16.

One Quantitative Variable (6 exam items), Week 1



Do Module 4 through page 40, including *Examining Distributions Checkpoint 1* and *Examining Distributions Checkpoint 2*.

Role-Type Classification, Cases C -> Q and C-> C (4 exam items), Week 1

Do Module 5 through page 48.

Case Q -> Q & Linear Regression (4 exam items), Week 2

Do Module 5 through page 54, including *Examining Relationships Checkpoint 1*.

Causation (3 exam items), Week 2

Do Module 5 through page 71, including *Examining Relationships Checkpoint 2*. Read page 71, Module 6.

Sampling Methods (11 exam items), Week 3

Do Module 7 through page 79, including *Sampling Checkpoint*.

Designing Studies (11 exam items), Week 4

Do Module 8 through page 94, including *Designing Studies Checkpoint 1* and *Designing Studies Checkpoint 2*. Read page 95, Module 9.

Finding Probability of Events (4 exam items), Week 4

Do Module 10 through page 105 (there is no Checkpoint).

Theoretical and Empirical Probability (9 exam items), Week 5

Do Module 11 through page 122, including *Probability Checkpoint 1* and *Probability Checkpoint 2*.

Conditional Probability and Independence (4 exam items), Week 5

Do Module 12 through page 133, including *Probability and Independence Checkpoint 1* and *Probability and Independence Checkpoint 2*.

Exam Preparation, Week 6

- Review Checkpoints: Work until you've scored above 80% on each.
- Review Key Formulas to Memorize: listed before the Study Plan
- Take the Preassessment: The Coaching Report will show you where you ought to re-examine the Study Plan. Each line of the report is an exact match for one of the activities above. You should also seek help from your Course Instructor
- Take the Objective Exam: If you do not pass, you must meet with your Course Instructor.