Basic Statistics and Probability

Course Overview and Syllabus

Prerequisite courses: none **Grade level:** 9-12

Course Description

This course introduces high school students to foundational concepts of data analysis, statistical reasoning, and probability. Students will explore methods for collecting, organizing, and interpreting data, using statistical measures to make informed decisions. The course also covers principles of probability to analyze outcomes, understand random events, and evaluate real-world scenarios. By applying statistics and probability to practical examples, students will develop critical thinking skills and the ability to evaluate claims and data. Through collaborative projects, engaging activities, and discussions, students will learn how these concepts apply in various academic and professional fields.

This course is part of the Exceptional Students Course Suite, designed for high school students working three or more grade levels behind. The Exceptional Students courses are ideal for students whose IEPs allow them to earn credit for below-grade-level coursework.

Course Objectives

- Students will meet the following goals in this course.
- Understand and apply key statistical concepts, including measures of central tendency, variability, and graphical data representation.
- Develop skills in designing surveys, experiments, and observational studies to collect meaningful data.
- Analyze data using probability principles to predict outcomes and assess the likelihood of events.
- Evaluate the reliability and relevance of data sources and information presented in different contexts.
- Connect statistical and probability concepts to everyday life, enabling informed decision-making.

Student Expectations

This course requires the same level of commitment from students as a traditional classroom course. Students are expected to spend approximately 5–7 hours per week online on:

- interactive lessons, which include a mixture of instructional videos and tasks.
- assignments, in which they apply and extend learning in each lesson.
- assessments, including quizzes, tests, and cumulative exams.

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Communication

Teachers will communicate with students regularly through discussions, emails, chats, and system announcements. Students will also communicate with classmates, either via online tools or face to face, to collaborate, ask and answer questions in peer groups, and develop speaking and listening skills.

Grading Policy

Students will be graded on work completed online and work submitted electronically to the teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Assignments	20%
Lesson quizzes	30%
Unit tests	30%
Cumulative exams	20%

Scope and Sequence

When students log on to Imagine Edgenuity, they can view the entire course map—an interactive scope and sequence of all topics under study. The units of study are listed below

Course Units
Unit 1: Data Representation and Description
Unit 2: Understanding and Comparing Data
Unit 3: Advanced Data Analysis
Unit 4: Probability and Inference