PREREQUISITES

Math 112, 113. You should know the content of Math 112 and Math 113 very well.

This course does not contain proofs, but it does have some derivations and justifications in it. Math 290 is recommended because it improves your ability to think mathematically, but it is not required. The level of difficulty will be similar to our 300-level courses.

GOALS

The ability to construct mathematical models of random phenomena that we see in the world around us. This includes random numbers, for example, the total number of points that will be scored in the next Super Bowl. It also includes many things that change randomly over time (stochastic processes), such as the temperature. The ability to use those models to understand the degree and nature of the uncertainty that we face.

CONTENT

Random variables. Key properties thereof, including expectations, moments, independence and conditioning. Commonly-used random variables. Limit theorems.


TEXTBOOK

Introduction to Probability Models, 10th edition, by Sheldon M. Ross. We will cover most but not all of Chapters 1-5, and parts of chapters 6, 8, and hopefully 10.