

Let me now walk you quickly through a high-level summary of this class. Units 1 to 5 together with Unit 8 include material that, at some level, gets covered in any undergraduate probability class. In Units 1 to 5, we introduce the general framework of probability theory and learn how to put together models, calculate probabilities, calculate certain types of averages, and also the general rules for incorporating new evidence into a model.

Unit 8 also covers material that is standard in a first course, by covering laws of large numbers, what happens when you average many random measurements. Unit 6 adds some more depth to the basic material by considering a few special topics, that although they may not always get covered in a first course, they are nevertheless indispensable if you are to have working knowledge of the subject.

The less conventional part of this class comes in the remaining three units. In Unit 7, we study the subject of statistical inference in some depth. Even though at some level it is just an application of the basic theory in earlier units, we discuss it in enough detail to get you ready to use it [in] real world inference problems, whatever your field happens to be. The other non-standard component comes in Units 9 and 10, which provide you with an introduction to the simplest and most basic models of random processes that evolve in time.

This is because most real-world phenomena do involve a time aspect, and also because this is where you can finally get to use, in interesting ways, the tools that you will have accumulated.