

How many beds do hospitals need to reduce emergency department overcrowding? How many COVID-19 cases will there be in the fall? How can airlines optimize their routes? How can supply chains for manufacturing be made more efficient? These are just some of the questions that simulation modelling is used to answer.

In this course, you will learn how to design simulation models; write computer programs to implement them; analyze data to calibrate and validate them; and interpret simulation output. We will begin with an introduction to probability models, random processes, and queueing theory. You will learn the discrete event simulation approach to analyzing queueing networks. The course will end with a project in which you will develop your own simulation model.