

DATA SCIENCE MODELING CERTIFICATE

Program Description

In today's data-driven world, advanced data modeling techniques are essential for enabling informed decision making and strategic planning.

This certificate program is designed to help you understand predictive modeling, with a focus on making accurate predictions using various types of data. Throughout this program, you will explore models such as polynomial regression, splines, and generalized additive models. These models are used to analyze complex relationships within datasets that may include both numerical and categorical variables. You will also gain practical skills in building models using R, which will allow you to examine how different types of information can be combined to make predictions. You will have the opportunity to practice modeling interactions between different types of data, such as categories and numbers, and use decision trees to understand complex relationships that linear models are unable to capture. By the end of the program, you will be able to create and evaluate predictive models, equipping you with valuable skills for decision making in a variety of industries.

To be successful in this course, you should have a foundation in R programming and be able to leverage those skills to create and summarize datasets with visualizations, interpret data, employ simulations, use linear regression, clean data, and create visualizations. Experience with R will be critical to success as we don't explicitly teach how to use R in this certificate. High school or college level math and algebra are also recommended. If you do not have this experience, start with the Data Science Essentials certificate program.

The courses in this certificate program are required to be completed in the order that they appear.

Key Takeaways

- Select an optimal model based on modeling goals and characteristics of a dataset
- Identify when a nonlinear model is necessary based on data characteristics and how to implement it
- Identify or detect when an interaction between predictors would improve a model
- Improve predictive accuracy by combining different models into an ensemble

What You'll Earn

- Data Science Modeling Certificate from Cornell's Ann S. Bowers College of Computing and Information Science
- 64 Professional Development Hours (6.4 CEUs)

Who Should Enroll

- Current and aspiring data scientists and analysts
- Business decision makers
- Marketing analysts
- Consultants
- Executives
- Anyone seeking to gain deeper exposure to data science

Total Investment

- 2 months with 6-8 hours of study per week

How To Enroll

For more information on how to enroll, please visit Data Science Modeling Certificate (<https://ecornell.cornell.edu/certificates/data-science-analytics/data-science-modeling/>).

Courses

Code	Title	Hours
eCornell CIS601	Nonlinear Regression Models	0
eCornell CIS602	Modeling Interactions Between Predictors	0
eCornell CIS603	Foundations of Predictive Modeling	0
eCornell CIS604	Ensemble Methods	0