10.1: Introduction to the Lesson

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In the previous module, you learned about the logistic regression model, which is used when we have a binary response variable and at least one predictor. You learned how to interpret the model, carry out the relevant inferential procedures to answer various questions of interest, and carry out goodness-of-fit tests to assess the validity of your model. In this module, you will learn how to use the Receiver Operating Characteristic (ROC) curve and the Area Under the ROC Curve (AUC) to assess how well your logistic regression model does in classifying your data.

You will then learn about the multinomial logistic regression model. This model is used when the response variable is categorical with more than two outcomes. As you learn about the multinomial logistic regression model, compare this model with the logistic regression model you learned about in module 9. Although there are some minor changes in interpreting the model, a lot of the ideas are similar.

In the last part of this module, you will learn about Generalized Linear Models (GLMs). The linear regression and logistic regression models you have learned about are specific types of GLMs. Other types of analysis may necessitate using another model; for example, if the response variable is discrete with non-negative integers (number of Facebook friends a user has), then a Poisson regression model, another type of GLM, should be used. You will learn about the general framework of a GLM, as well as how inferential procedures are carried out in GLMs.