1.2: Simple Linear Regression
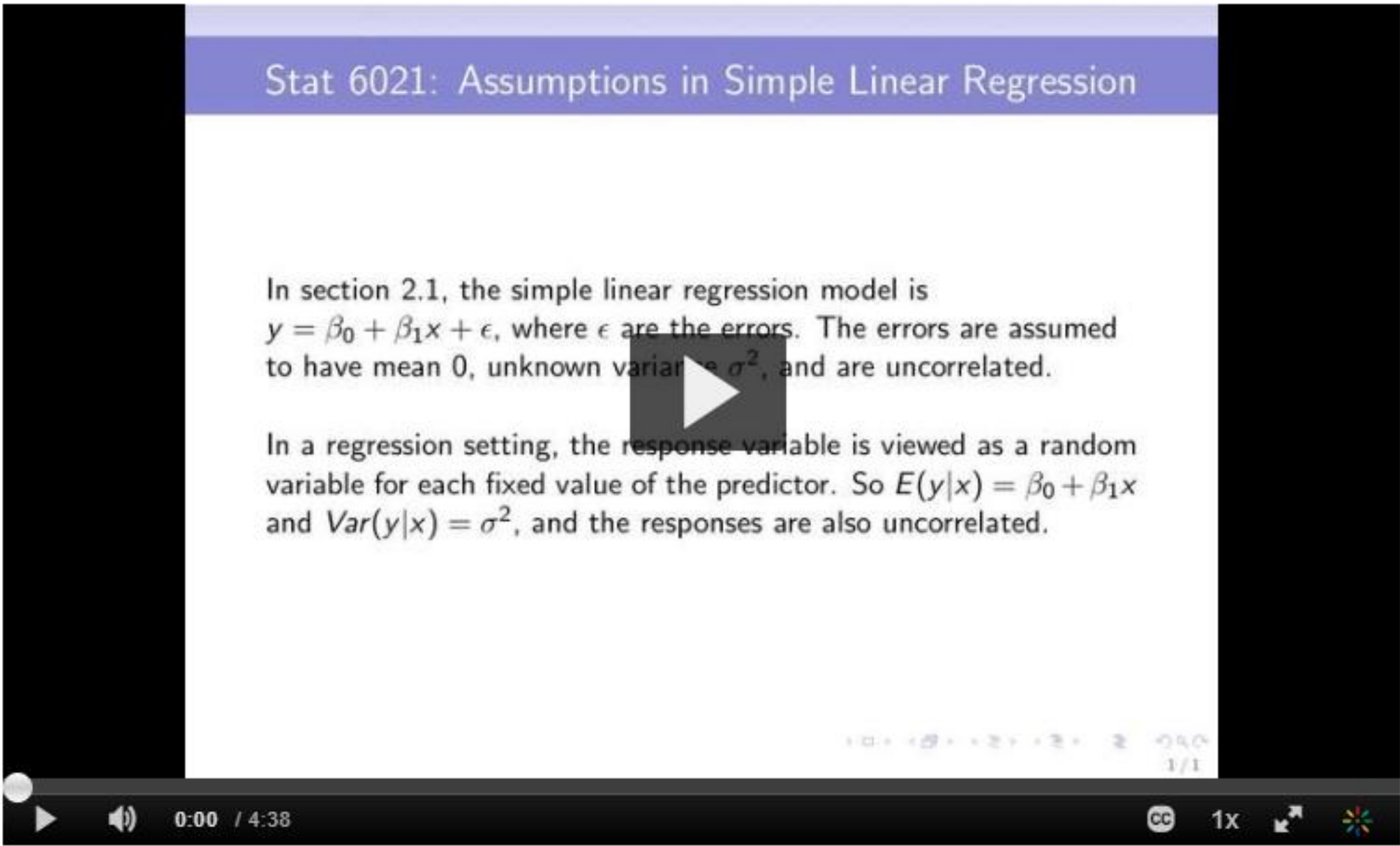
Topic 1.2: Simple Linear Regression

Read Section 2.1 of your textbook. As you read, take notes on the following.

1   Write down the simple linear regression equation and the simple linear regression model.

2   Compare and contrast the simple linear regression equation and the simple linear regression model. What do each of these describe?

3   What is the interpretation associated with the slope and intercept in a simple linear regression equation?

4   Write down the assumptions for a simple linear regression model. You may state the assumptions using equations, and then describe what these equations mean.

Watch this video to see a pictorial representation of the regression assumptions.

Stat 6021: Assumptions in Simple Linear Regression

In section 2.1, the simple linear regression model is $y = \beta_0 + \beta_1 x + \epsilon$, where ϵ are the errors. The errors are assumed to have mean 0, unknown variance σ^2, and are uncorrelated.

In a regression setting, the response variable is viewed as a random variable for each fixed value of the predictor. So $E(y|x) = \beta_0 + \beta_1 x$ and $Var(y|x) = \sigma^2$, and the responses are also uncorrelated.

1/1

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   Slides to accompany the "Assumptions in Simple Linear Regression" video