1. Hi there, I'm Tucker Balch. I'm a professor at Georgia Tech and I'm the instructor for this course. >> Hi, I'm Devpriya Dave, a graduate student at Georgia Tech. You can call me Dev. >> My original research was about machine learning for robotics, but in 2007 I became interested in using these same algorithms for investing. Since that time I've shifted my research and teaching towards finance. I also cofounded a financial technology company called Lucena Research. >> I'm a graduate student who's been working with Professor to built up predictive system for stock market. I'm also working on the software to support this course. >> You're going to see a lot of Dev in this course. She makes a lot of things happen behind the scenes. Now Dev, I'm thinking about buying Apple stock. Do you think I should do it? >> Mm, well, it depends on a lot of factors. What are the other stocks in your portfolio? What do you think will predict stock prices? Also, how much risk do you think you can take it on? >> So those are all good questions, and Dev is exactly right. We need to consider all of those things before we make an investment. Now in this course we're going to cover a lot of these issues. We're going to show you how information influences the movement of a stock price, how to build software to analyze and visualize these relationships, and details about how the stock exchanges work. Finally, in the last section of this course we're going to show you how to build machine learning algorithms that you can use to build real trading strategies. Now let's get started. >> Let's do it.

2. The overall course is broken into three mini courses. >> The first one is Manipulating Financial Data in Python. >> In this first mini course, we show you how to read historical financial data into Python and manipulate it using powerful statistical algorithms. >> The second one is Computational Investing. >> In the second mini course, we show you the algorithms, methods and models used by hedge funds and investment banks to manipulate and work with financial data. >> And the last one is Learning Algorithms for Trading. >> In this last mini course, we pull everything together. We take what you learned in the first two mini courses, show you how to take that data and use it with machine learning algorithms like Q learning and random forests to build trading algorithms. Now, our goal is that after you complete this course you'll be equipped to join a trading system development team. Say a hedge fund or an investment bank. But I want to emphasize that you shouldn't immediately begin automatic trading. This course is just a starting point to teach you some of the things that you need to do that well. But, again, it's just a starting point.

3. We will be using three different text books in this course. For the first mini course, we will be using Python for Finance by Hilpish. >> In the second mini course, we will be using a book I wrote with Philip Romero titled What Hedge Funds Really Do. It's a thin book, but it covers a lot of important material that I think you will enjoy. Finally, in the last mini course, we will be using Mitchell's Machine Learning. >> The good news is if you're taking the Machine Learning course, you'll already have that book. So you don't have to buy it again. I also wanted to mention that we're not going to cover all the material in these books, so you don't need to worry about being overwhelmed.

4. [MUSIC] Hi, Dave. >> Hi, Professor. >> Now, you took this course recently, didn't you? >> Yes. >> Do you think you have to be a stock market whiz to pass this course? >> No, not really. I got interested in the finance only after I took your course. >> [LAUGH] The main prerequisite for this course, is that you should be a strong programmer. We have a lot of assignments and projects, and we move at a quick pace. We also use Python which may be new to some of you, so you should prepare for that challenge. [MUSIC] >> Oh, Professor, can I ask you what you are doing? >> This is my Monty Python impression. You know, the Ministry of Silly Walks. >> No.