ANNOUNCER: The following program is brought to you by Caltech.

YASER ABU-MOSTAFA: Welcome to machine learning, and welcome to our online

audience as well.

Let me start with an outline of the course, and then go into the material

of today's lecture.

As you see from the outline, the topics are given colors, and that

designates their main content, whether it's mathematical or practical.

Machine learning is a very broad subject.

It goes from very abstract theory to extreme practice as in rules of thumb.

And the inclusion of a topic in the course depends on the relevance to

machine learning.

So some mathematics is useful because it gives you the conceptual framework,

and then some practical aspects are useful because they give you the way

to deal with real learning systems.

Now if you look at the topics, these are not meant to be separate topics

for each lecture.

They just highlight the main content of those lectures.

But there is a story line that goes through it, and let me tell you what

the story line is like.

It starts here with: what is learning?

Can we learn?

How to do it?

How to do it well?

And then the take-home lessons.

There is a logical dependency that goes through the course, and there's

one exception to that logical dependency.

One lecture, which is the third one, doesn't really belong here.

It's a practical topic, and the reason I included it early on is because I

needed to give you some tools to play around with, to test the

theoretical and conceptual aspects.