

[Courseware](#) [Course Info](#) [Discussion](#) [Syllabus](#) [Download R and RStudio](#) [R Tutorials](#) [Readings](#) [Contact Us](#)
[Progress](#) [Office Hours](#)

THE NEED FOR STATISTICS



SPEAKER: MICHAEL J. MAHOMETA, Ph.D.

Hi, I'm Michael.

And welcome to Foundations of Data Analysis.

Almost every video that you're going to see in this course, the instructional videos, will have some sort of question that will then

inform the rest of the instructional video.

11/11/2014 10:23 AM

And so I'd like to take the opportunity with
this very first video
to do just that.

To ask you a very simple question.

Ready?

Why are you here?

Why are you here in this course?

Maybe it's to get a promotion, or to have
another "thing"

that you can bring to the table when it
comes to your job.

Maybe it's because you simply like the idea
of taking a MOOC.

Or simply think that the course will be of
some benefit to you.

Or maybe you're just a little bit like me and
simply like statistics.

Here's why I think you should be here:
because, in fact, data is everywhere.

And with all this data, we need a way, a tool
to examine it.

This was true even before the concept of
Big Data

came about - when we realized just how
much information is collected about us
and available to us each and every day.

This concept of "data is all around us" is so
true

that we can find it if we simply go take a look outside.

So did you find it?

Did you discover the data that we were actually

looking at when we were traipsing all around campus.

Did you see it?

Let's help out a little bit more.

Here's a picture of our campus from Google maps.

This is what it looks like on a two-dimensional surface.

Do you notice the data now?

It's all the buildings that we have here at UT.

On the surface this is actually really boring

- until we start to think about the data that's in this picture.

Each building has a name; it has a year it was constructed - so it has an age;

we can find the total amount of usable space in the building:

how many classrooms, how many faculty offices there are.

So now we can start classifying the building

as a teaching space or an administrative space.

Are there any computer labs in the building,
what's

the energy consumption for the building.

We can even add in the number of students
that enter the building in a given day or
even in a given hour.

Very quickly we should hopefully see how
the idea of "building on a campus,"

a benign idea, can actually become a wealth
of information,

a wealth of data.

In fact that data is around each member of
the UT community each and every day

- and they may not even realize it.

I wonder what data is around you without
you being aware of it.

Data is only half the picture here; the other
half is what we DO with the data

once we realize it's there and we somehow
collect it.

Well, we DO - Statistics.

Not the numerical quantity that describes
some distribution of numbers

- but the action of performing a statistical
analysis.

Put simply, the act of statistical analysis

is the idea of matching up a specific tool
with a specific problem.

Think about painting a room in your house.

When do you use a paint brush?

When do you use a roller?

When do you use a sprayer?

And what's this blue tape everybody's talking about?

All these tools are used - but they each have their specific purpose

in the task of painting the room.

Statistical analysis is the same.

We have a task of answering a question.

Some statistical tools or techniques will be used for specific purposes in the completion of that task.

It's our job to learn which tools go with what specific task.

So, we have a question about our data - and based

on the properties of our data, we can apply a specific statistical technique

to answer the question - and then we report what we've found.

What's the question, what pieces of our data

can we use, what technique (or tool) helps us to answer that question,

and how do I tell others?

tool

box if you will - of statistical tools to help

analyze, understand, and explain the data

the surrounds us all.

Help

Comprehension Check

(3/3 points)

Simply put, learning statistics can help us

- ☐ determine which statements we read are true.
- ☐ stop criminal activity.
- ☒ think more clearly about data. ✓
- ☐ justify decisions when no evidence is present.

In this course, we will be working with only those questions that

- ☒ can be answered by statistics. ✓
- ☐ are relevant to adult learners.
- ☐ address the meaning of life.
- ☐ are considered a priority in our society.

What three things will we do as data investigators?

- ☐ Look at Our Question, Find the Data, Analyze the Data
- ☐ Graph Our Data, Describe Our Data, Show Our Data
- ☐ Find Our Data, Model Our Data, Graph Our Data
- ☒ Examine the Question, Analyze the Data, Draw Conclusions ✓

[Show Answer](#)*You have used 1 of 1 submissions*[Help](#)

EdX offers interactive online classes and MOOCs from the world's best universities. Online courses from MITx, HarvardX, BerkeleyX, UTx and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT.

© 2014 edX, some rights reserved.

[Terms of Service and Honor Code](#)

[Privacy Policy \(Revised 4/16/2014\)](#)

About & Company Info

[About](#)[News](#)[Contact](#)[FAQ](#)[edX Blog](#)[Donate to edX](#)[Jobs at edX](#)

Follow Us

[Twitter](#)[Facebook](#)[Meetup](#)[LinkedIn](#)[Google+](#)