You don't. You dance to module #15 in

the paper programming with MATLAB.

The course code is held 115.

It's a semester 5Y paper.

So in this unit we are going to look at

about various 2 dimensional plots and.

In this particular module,

we'll look at the F plot command.

So how do we go about

with the F plot command?

We look at this and this

corresponding in this module.

So I have Doctor Narula,

virus assistant professor.

Online we look at the FPLOT

command and the learning outcomes.

Again will just be that we shouldn't

be able to use the command in MATLAB,

so the FPLOT command.

Now there are many specific

graphic functions for 2D plotting.

We have nearly modules we have seen.

There is something called as plot.

There is something we'll see later,

something light.

There is something called a stem,

and so on.

They are used as an alternative to

the plot command we have just discussed.

That is what I'm talking about.

There are many commands.

Which can use as an alternate

to the plot command.

So our Matlab if you go to the

help desk it will list more than

twenty types of 2D plots apart from

the 3D plots which are available.

The MATLAB will show more than twenty

types of two dimensional plots.

We have examples are your

stemplots this important step?

Plot bar plots, pipe plots and compass plots.

So it is used to plot between,

so you're F plot command which

is there it is used to plot

between the specific limit,

so we'll see that there will be

an X limit which will set and then

that can be used to plot that any

particular function the function

must be of the form Y equal to FX,

where again X has to be a vector

who specify the limits,

and Y is the vector with the same size X.

So as we have seen the plot as well,

always the size of the vector,

the X that is the X axis and the Y axis.

Whatever you're going to create

a vector both.

Have to be of the same length,

otherwise MATLAB will throw up an error.

Seeing that the vectors the

length is not the same.

So the plot command again it plots a

function and you can specify limits.

We have seen this earlier as well.

The command has a form F plot OK

and then brackets in round brackets.

We need to write the function.

What function we need to plot.

So I've just highlighted the function

in red green and you can see that

the function has to be returned in

open and close inverted commas.

That's the important point.

Then we specify the limits.

What already limits of the X vector.

Like for example,

maybe we want to plot X axis can

go for minus three,

2 + 3 or minus four to plus four.

What exactly want to zero to four?

Whatever we can, maybe the limit

we need to specify it again,

but the limits should be without any invert.

The open and close inverted commas and

finally line specifies as we have seen

in earlier in the previous module,

we can give any type of line

space here as well.

If you want to give some color.

If you want to give some

sort of the size and so on.

So the function there are two ways one.

This weekend the function over.

Here is we can directly type it as

a string inside the comma rather

than creating a function outside.

You can like if you want.

If you use the plot command over there,

we have to write a function

separately like we've seen earlier,

and then we use it in the plot command,

whereas in the F plot command we

can directly write the function

within the F plot commandlet set.

So let's see that.

So for example,

let us say if the function that

is being plotted is typed as.

Let's just use the function.

Seven X ^2 + 4 Cos X.

Is what again,

our explorer function can include

a map MATLAB built-in function.

Again,

we have seen this previous movie there.

I'm going to sign cost 10 cot and so

on or whatever log we can use all

those functions within the fplot function,

so there is no restriction on that.

So the function to be plotted can be

typed as a function of any letter.

So over here let us see in

the previous paragraph,

like for example the function

was seven X ^2 + 4 Cos X.

Now it doesn't have to be that.

You can,

you can write it as seven Z so that you

would have to say just exit can be Z.

It can be T.

That doesn't matter.

You can write any letter over there

that will not make any difference.

OK, but there is.

There are certain restrictions

using the command that is,

a function cannot include any

previously defined variables.

For example,

here in the function above we

said seven into X squared.

It is that raised to square,

so it is X squared.

Over there we could have like

outside fplot function.

We can't say equal to 7 and then

inside we can say a into X over here.

So that will not be possible.

It will drop an error.

So whatever value you need to assign,

if you have to assign it within that.

Function itself,

so assigning variable outside,

like, say equal to 7 and bring

it inside that will not allow.

Now the limits.

The limits again,

is a vector with two elements

that specify the domain of X,

so there will be X bin and then

you have to display the X Max.

Or we can also specify the why limit as well.

I've taken example where I just

specified X limits and on the Y,

so for example over here and

always align specifiers are

same as in the plot command.

So let's look at example over here.

So this is a function that

is equal to X, ^2 plus sine.

Three X - 2 and the limit is given to us.

That is minus three.

So X is arranging for

minus three to plus three,

so that is the range of X.

So how will we use the plot comma if you just

go to the command window and we write this?

We will write F plot, open,

open and closed round brackets and

what's one set so the function

which you need to write X square.

So sorry X cube will be written as we

have to put the that raised 2 symbols.

We have already seen this in the previous

modules that is used for exponent,

so X raised to that symbol 3 + 6

into we have to multiply it into.

That is Asterisk is a multiplication

symbol north to sign into three

into X and we close the bracket.

Else do and then we close the

inverted commas over there,

so that is our function which we have

written over there and now after you

put a comma and then we have to write

the X limit so where our X limit is

X limit has already mentioned it has

to go from minus three to plus three.

So in square brackets we first write the X,

the minimum limit that is minus three and

then the maximum limit which is plus three.

And if you just type this command for

now in MATLAB in the command window

and let us see what we can see,

this is what we'll get in the.

This is the figure.

We know what we'll get once we enter

that command in the command window.

So you can clearly see that your X axis

is going from minus three to plus three,

because that is what we wanted,

and that is what was specified

in the fplot function as well,

and the Y axis it is in fact it's the

exponential function along with sign,

so you can see the sign and the

exponent term because it is so

you can see that the sign and

it is exponentially increasing,

so it's a combination of both the

sign and the exponent function,

so you can see looking at the graph

and you can understand definitely.

Signal cost function and there's

something which is increasing because it

was the exponentially increasing function,

so it's a combination of both.

Now I've taken another example,

example two, so again here.

Let's say Y is equal to three sign 5X.

That is a function.

And again let us see the limit.

What we want to go from minus

one to plus three in this world.

I'm sure that we can use all the

previously defined specifiers,

the title label X label we want to

give this plot also can be given

all those particular properties.

So here what you have done.

I just added three into signs 5X that we

write a function over there and inverted,

open and close comma,

then the limits. Minus 2 + 3.

Then we specify the width of the line.

So with how thick we want the plot to be.

So here it is 3 and then the color color.

Since we have seen that entire

table can always go through that.

So our room stands for red.

So OK if you don't specify specify anything

by default the color is going to be blue.

Then title sign waves.

We can clearly see where we can see

that the title which is showing

sign wave and on the Y axis is

amplitude and the X label we have set.

So why label is showing the amplitude

so we got amplitude and X label is for

time so we can see on the X axis we can

clearly see there is time on the X axis.

So what do we use for the plot command?

We can use it for the plot command as well.

But Fplot command makes it easier

to do plot functions so we can

directly write a function in the web.

Comma rather than writing a separately,

which we do in the plot comma.

So these are the references the book

which we are using and all this outputs

student which you are seeing that I

have done in using the MATLAB soffit.

So all the graphs and all the plots

which we'll see that all is done in.

Thank you students.