Welcome students in this module.

We are going to learn

about Fabic in carbonate,

And organic sedimentary rocks.

The main focus will be to learn.

And distinguish between the different fabric.

So at the end of this module,

a student will be able to identify

and distinguish between the fabric in

carbonate and organic sedimentary rocks.

Fabric in carbonate rocks as we know.

Limestone is a carbonate rock.

And these are emplaced as solid particles

by waves currents and they do not

deform much in textures and structures

from ordinary clastic sediments.

These rocks have fabric, namely a

framework cement relationship which we have.

Observed and studied.

Previously in the.

Clastic rocks so there are the

other carbonate rocks which

form more or less in situ,

often in currentless environment.

In these carbonates they show no sorting

nor evidence of current activity or bedding.

Accept algal growth or growth bedding.

The limestones are made up of large,

complex grains and these

are called as allochems.

And then we have Micrite which.

Is a very fine grained carbonate.

And this.

Component serves as a matrix.

For the larger elements and we have

the third component, that is spar,

which is a coarsely crystalline calcite

Which in many limestone is a cement

which binds all the allochems together.

And there are four principle allochem types,

and these include oolites,

skeletal structures and debris

Intraclasts and pallets

the primary fabric of limestone and

dolomite have been investigated and.

Well defined crystallographic

fabric were reported.

The patterns described were

largely growth fabrics.

In pores and other openings and

These are Druise, like implantation of

crystals on the walls of such cavities.

Fabric inorganic rocks.

Though dimensional fabrics are

common and are related to preferred

orientation of various flat or elongate.

That is also

having concavo convex skeletal elements.

It may be also noticed that

the fossil orientation.

Also responds to current flow.

The detached valves of concavo

convex may lie with either the

concave or convex side upward.

If it is moved by a current,

the orientation tends to become uniform.

In this case with convex side upward,

if the convex side is upward. That means.

It is because of current.

The preferred orientation of

such shells is therefore an index

of both current velocity and of

upper and lower surfaces of

steeply tilted or overturned strata.

Just like how we use other

structures like Ripple marks,

we can also use this to indicate.

The sequence.

And it has been also noted, however,

that in some turbidite deposit,

The single valves

Have a contrary orientation,

namely the concave side upward.

Search an orientation can be

produced by turbidity currents so.

Unlike the previous example over here the .

Concave side of the shell would be

facing upward so certain orientation

would indicate turbidity current.

Oriented fossil may also be the

indices of current direction.

If we take fossils like

electrolytes or cephalopods.

They orient with their longest dimension.

Either parallel or perpendicular

to the ripples of the same beds.

Those normal to the ripples and parallel to

the current flow become so oriented because

of the displaced center of gravity and

this view has been supported by using plots.

The position of long axis and

noting the direction of the apical

end of the form started.

So they had done the study.

And it was mainly based on the.

Direction of the apical end.

So based on that they plotted

and the modes in which.

There would be equal modes on both sides.

The equally opposing modes.

Of our current rows represent

orientation of detrital shells

perpendicular to the current direction.

So if the modes are both equal like this.

Then that means. The.

Orientation is perpendicular

to the current direction,

but if the modes are unequal.

One big and one small perhaps.

In that case.

It would indicate orientation

parallel to the current direction.

The larger mode points up current.

One of the most common Paleo current,

Charcoal lineation express by parallelism

of carbonized plant debris.

Short orientation both perpendicular

and parallel to the current

direction as inferred from the

other sedimentary structures.

So this is how.

there is a marked

difference between organic and.

Carbonate rocks, the carbonate rocks.

They show hydrodynamic structures just like.

Clastic rocks and these.

They have their characteristic markings.

Which can be studied with the help of.

Plots and graphical data.

So the normal orientation is

probably parallel to the current,

but as in the case of some

elongate sand grains,

an many elongate fossil forms,

the alignment can be controlled

by ripple bed forms.

The elongation then becomes

parallel to the ripple trough.

This is the reference. Thank you.