Hello students my name is Harsha Achari. I am an Assistant Professor at Government College of Arts, Commerce and Science, Khandola, Marcela-Goa
This module is for Bachelor of Science, first year,semester-one, chemistry.
Course code CHC 101 paper title Inorganic and Organic chemistry section B.

Under the unit stereochemistry, module name Threo And erythro
Module no:30.
This module will have an introduction to threo and erythro nomenclature. Then the assigning of the nomenclature and some examples.

Once you watch this module, you will get the knowledge of the terms, erythro and threo, the relation between the two terms. That is, erythro threo isomers and also some
solved examples of the two isomers. Now let us begin.

Erythro and threo is used for assigning nomenclature to diastereomers.The nomenclature Erythro and threo is used to distinguish between diastereomers which have two chiral centers. Diastereomers are isomers which are not mirror images of each other and which are non superimposable on each other. Such diastereomers may contain similar groups or different functional groups like hydroxyl group, $-NH_2$ group,Carboxyl group.Originally, this nomenclature was designed for sugars or Carbohydrates.
Which contain hydroxyl groups along their chain, which was given by the scientist, Emil Fischer.
This particular nomenclature can be assigned to a structure when it is written in Fischer projections.

The two diastereomeric aldoses were, erythrose an threose.
The first 2 structures are the mirror images of each other,that is the erythrose sugar molecule and the next two are mirror images of each other,that is the threose sugar molecule, and after this the nomenclature was used to assign erythro and threo nomenclature to Fischer projections of different compounds.If similar substituents or bigger functional groups such as Hydroxyl group,$-NH_2$ group or carboxyl groups are present on the same side of the Fischer projection on the vertical lines, then we get an erythro isomer. If such groups, like the similar substituents or bigger functional groups if they are present on opposite side vertically on the Fischer Projection of a compound, then it will be a threo isomer. This is the general representation of the erythrose isomer. Even its mirror image will be the erythro isomer. same implies to the threo isomer.

Let us solve some examples.
Here you see a molecule in which there are two different functional groups.and they are placed opposite to one another. Hence This will be a threo isomer. even the mirror image of this particular molecule,

Will be a threo isomer. Now let us write down the erythro molecule of this particular structure.
So we have the erythro isomer of the given structure. Also same way we can write the mirror image of the same molecule wherein both the functional groups are now placed on the left hand side.
Next, let's take another example. Now even here we have the similar atoms placed on the opposite side, so this will be a threo isomer, and its mirror image would be, this is an erythro isomer

an the erythro isomer will be having both the similar atoms on one side.This is the erythro form of the given structure.
Now if we look at this particular example, We have different groups, again written on the opposite side, so this will be the threo isomer and the erythro isomer will have both the groups on one side.
Now this molecule contains both the groups on one side.So this will be the erythro isomer and it's threo isomer will have the groups placed opposite to each other.

Now let us have a small summary of the topic.
So erythro and threo nomenclature can be used for diastereomers having two chiral centers. and it is applicable for structures when they are written in Fischer projections. And the nomenclature can be assigned depending on the position of the groups where they are placed.whether they are placed on the same side or opposite to each other. If they are on the same side, it will be the erythro form and if the groups are on the opposite side, it will be the threo form.

Here are some references you can refer For more information.

Thank you.