**Lecture – 16**

First question, I have just wondering if you have gotten the handle on prospective views if you have gotten the prospective on prospective views.

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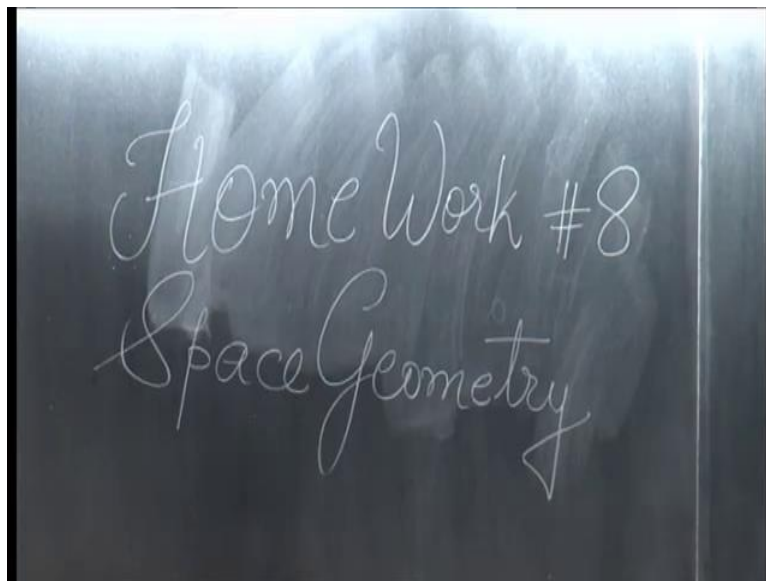
The best way to get handle on prospective is to practice, so if you practice you will get better two things that I would want to tell you one is homework number eight. If you guys have the manuals in front of view, just check it out homework eight is slightly different. So, it is a competition, so this was the thing is that you are going to bedrawing or think a two point prospective of your hostel room and that is the fun part away, this is that right?
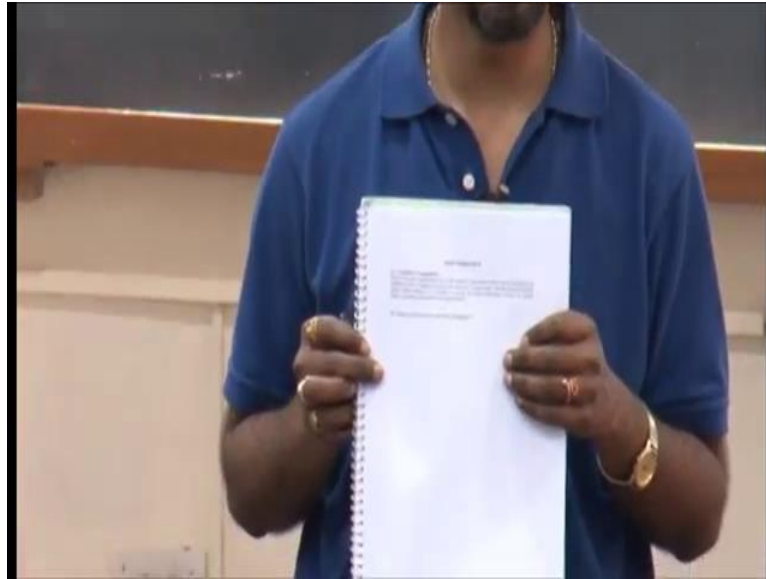
So, there are two aspect of it with one is voluntary means you can take a break and the second aspect is competition. So, those who are interested they can draw a two point prospective of their hostel room, just imagine that you are standing you know just about at the door of your room. Whatever you see, make a mental picture of that and draw prospectivethe due date is again one week after your lab, it and what I will do is I will request the tutors tochoose the best drawings from each section. Then, will sit down and we choose the best may be one two or three and of course, so there will be a little prize that is that is one thing and second thing is a little request that from now on.

I mean of course, prospective is would probably have been a little difficult for you, but from now on things that going to get a little even more difficult. So, we are going to get in to space geometry lines planes intersections development of course, you guys are free to miss classes, but if you miss classes, you know you will be at a loss. So, my request to you, so consider that as an advice as well as request my advice and a request to you would be to come to the class listen to the lecture. If things are not clear to memake me explain it as many times as you want, so that you can understand it and I will be happy in do that because if you miss a class then you know you lose something you do not feel like to come to next class.

Then, you know things happen, so this something that I just wanted you to question about. So, things are going to get a little difficult and challenging and to be able to

understand things better come to the class yeah is that a single point two point, it is a two point, well think about that think about that may be you in a think about that.

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Topic	Week (No. of Lectures)	Lab
Intro and Basic Constructions	Week 1 (2)	
Orthographic Projections	Week 2 (2)	Lab 1
Orthographic Projections	Week 3 (2)	Lab 2
Isometric Projections	Week 4 (2)	Lab 3
Missing Views	Week 5 (2)	Lab 4
Sectional and Assembly	Week 6 (2)	Lab 5
Oblique Projections	Week 7 (1)	Lab 6
Perspective Projections	Week 7 and 8 (3)	Lab 7
Lines and Planes	Week 9 (2)	Lab 8
Lines and Planes	Week 10 (2)	Lab 9
Auxiliary Projections	Week 11 (2)	Lab 10
Intersection of lines/planes/solids	Week 12 (2)	Lab 11
Intersection and Development	Week 13 (2)	Lab 12
TOTAL	26	12

So, a little more into prospective views.

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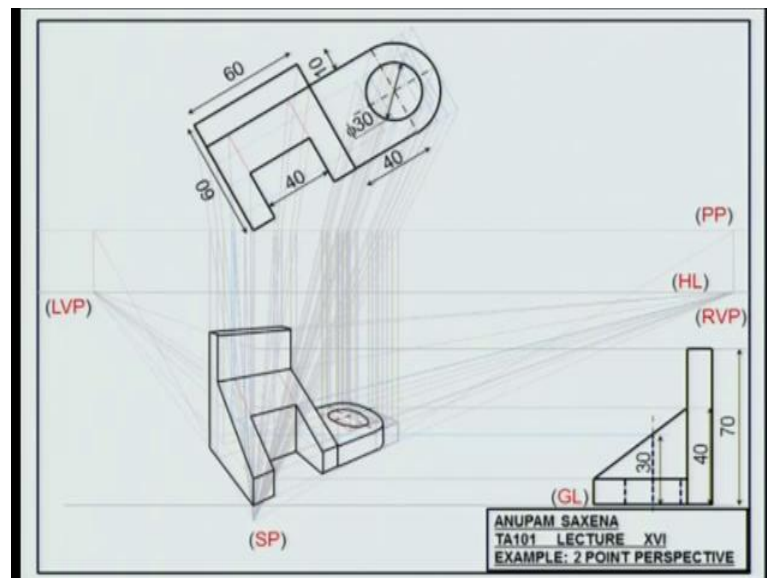
This is an example that you are going to be solving in your lab, so I just want to go through the solution. Once we are going to be a lot of lines in here, so bear with me, I will try to do my best to explain thing, so what is given to you is the plan view of the object and the profile view of the object and a bunch of lines. So, you have the picture

plane which is passing through one of the edges of the object p p 20 millimeters below that you have the horizon line about 90 millimeters below this vertex of the object. You have the ground line over which you have the profile view, this where you are standing and this where your eye level is and 5 millimeters below the ground line.

You have the station point, so these scenes are given to you once these scenes are given to you may be think about starting to draw prospective views now about this angle and this angle of course, this angle is 90 degrees. So, you get a nice prospective if you keep this combination as 60 30, so length may be around 30 degrees if this is more otherwise 60 degrees and the other angle as 60 degrees or 30 degrees depending. So, it is a nice idea because you get a very nice prospective of that, so you have seen this, so this is the isometric view of the same object that you have drawn in one of your previous labs. I am going to be keeping this picture, this is slight modification rather simplification at I am going to be working with I have replaced this part by rectangle or rectangular region.

So, we can understand the drawing of prospective in a little better way otherwise this thing would remain the same. So, this thing is the block this thing is the rectangular block but, this thing remains the same over here and what I want you to do is try to understand the difference between the isometric drawing and the prospective drawing. As we you know continue with a drawing, so this is where the station point is I am getting both the numbers and maybe I will be with you, I will stay here. So, I can also look at these lights the lines am I blocking a view can you the back, let go with numbers first step is to figure out the left finishing point and the right finishing point this is for the left, this is for the right.

If an object far away along this direction on the horizon this is for left finishing point in the left l v pthe right finishing point on the right. Let me go back starting from the station point look along this direction at an object at infinity get the image of that on picture plane, which is going to be a point project that on the horizon line. This would be the left finishing point, likewise if you do the same thing on the right look along this direction at an object at infinity, get the image of that object as a point project in onward on the horizon line, you will be getting the right finishing point. First step with me, now what the free rules lines which are parallel to the prospective parallel to the picture plane remain parallel wonderful lines, which are not parallel to the picture plane.

They vanish lines which are on the picture planethey stay in true length identify the first step is identify the edge on the object which is on the picture plane look at this vertices here look at this point. So, the edge going in to the screen will be the edge which will be in true length, once you have identified that from the station point view that edge that edge would correspond to this here makes that edge. Now, will that edge made these edges is going to be vanishing towards the left vanishing point. These edges they going to be vanishing the right vanishing point left vanishing point, the right vanishing point.

Let us focus on this edge from the station point in the top view get these right informationthe image of this vertices will be formed over here projected downward. You will be getting the edge in between these two rays that vanish towards the right vanishing point here with me. So, once you have this edge looking at this block made pretty easily, now of course, you would not see this edge because not there, but how about this? You would see this, see that on these two rays, what you do?

Station point, this vertices get image of these vertices on the picture plane project that image down, so you will get this edge here right over here in between these two rays. The same thing for this vertices here get image on the picture plane projected down and you see this with me straight forward straight forward. So, you have this part now about this feature of the object here all lines acts 60 degrees from this part of the picture plain they will be vanishing towards the left vanishing point. So, if you are looking at this edge over here, and this edge over here, they will be vanishing both towards the left vanishing point with me.

So, both from the top as well as from the bottom, now this is the important part, this sky here in the profile view where is it where is that in the plan view over here. Now, would any part of this be on the picture plane, no will you be able to get the true height of that will you be able to get the true height of that probably not, but there is a little trick that you can use to get the true height of that. So, you can just imagine, you can just imagine this comes to stand over here so that one of the sky is on the picture plane. Correspondingly, get the height of this thing on this line because it is this line where you are going to be getting all the heights in true lengths.

So, imagine that this sky has come down over here imagine that this sky has come down over here so that this vertices is with this vertices working. I will try to speak without the

mike for a while can you hear me. So, are you with me regards to this, now look at this edge vanish there, what do I need to do? Now, I use the side dimension, I look at the back vertices of the object in top view get the image of that on the picture plane projected down, what this edge is that is this edge in prospective, how about the height, are you with me on this? So, get this height, so let me go back, so what I have done is little trick that if I stay on this vertical line, if I stay on this vertical line, I am going to be getting true lengths.

Can I have some kurkure, you know it is bad you should share, so what I will do is, I will do a little tricks, I know that anything on this line I will get in to length I will move this feature over here so that these vertices with these vertices. So, that means that if I take if I will use the profile view and get the height over here, what I can do is I can knowing that it is going to be vanishing at the left vanishing point, I draw this ray. Then, I use this right information look at the back vertices get the image projected downwards, this would be the edge in prospective corresponding to this edge.

This would be the height in prospective corresponding to this height, so first for good and I will look at the second vertices get the image projected down. Then, looking at these edges, I know that they will vanish towards the right vanishing pointboth of them and if I look at these two vertices, essentially I am going to be using this right information. If I look at these two vertices, I go up get the image of that vertices and the picture plane projected down, likewise this one projected down.

I will get this block which corresponds to this sky over here, so far it is good same trick to get this part of the objective use the profile view, project the height on the true length line draw rays that vanish towards the left vanishing point and right vanishing point. So, this is the height that I am going to be getting here, this is the part of this surface that I get, I get this height, I get this. So far maybe I can go back and I can explain, stay with me here you know it is not your fault, because even I am getting confused stay with me do I have this point in my prospective figure, do I have this point in my prospective figure? Do where is that disguise over here, I do not have it, how do I get it?

I know that this point corresponds to this point, I use the true height informationtake this ray towards the left vanishing point this intersection point is that this one over here would correspond to this and this. So, once I have this intersection point ready, I look at

this edge over here this edge would vanish towards the right vanishing point have you done that? I can draw this edge this vertical edge and the vertical edge on the right here and then I can join this and this point to get this. How do I give this points? Stay with me, I have gotten this edge, I have gotten this edge, so this is the trick that I can use, what I can do is I can project these two edges.

So, once again I can project these two edges and to this edge I get these two points over here I will look at one of those points over here t s p in the top view get the image. I will look at this point over here, so this point, so this point over here comes on over here right. Likewise, I will look at this point, I will look at this point from station point this image of that point on the picture plane that I projected down over here. Then, I join these two points and then I get these two red lines corresponding tothese lines over here and over here. Which horizontal line there are many horizontal lines there are so many lines that yeah come.

You know why absolutely, so this portion cannot be here because this portion is behind the picture plane. So, this horizontal line here is just to take the true dimension of this and this true length line, so stay with me this is confusing there will be lot many lines. Now, I am looking at this point and looking at this point here and I am going to be taking the projection of the image of this point from here which is this here. I know that this edge vanishes towards the right vanishing point I got this edge and the intersection of this ray with these two edges will give me this edge right can I repeat? So far, so what I have done what I have done is I located these two edges in prospective fine, I have to locate this point and this point, how do I do that?

I go to my station point which is where I am I will look at this point get the image on the picture plane project it down where on this edge. I will get this point over here, but I do not need to worry about that, I already know that this edge is vanishing towards the right vanishing point. So, all I needs to draw a ray from this intersection r v p, which is what I do here, of course you can there are multiple ways doing that of course you can this is one of the solutions. So, this part this part of the object is in prospective, now I needs a clap come onnow is it possible is it possible for you to draw the right hand side of the object in prospective.

Now, see things missed up, yes which one, why, so one of you appears says that this object is not complete because there would be a vertical line and there would be another line. There would be another line three lines missing, do not worry about that, this is just for check this is your vertical line. So, in your slides you can go back and refer to the blue lines this is just for verification do not worry about that vertical line that if you draw a ray joining this point and the right vanishing point the edge below this edge. That line on that ray extends that and then we will be getting third line. So, here comes the messy part of the object what am I doing here?

From this vertices from this vertices, I am drawing this edge in prospective right here you go and then the edge on top of that it is getting mess here not visible, you know it is going to be interesting when you are going to be working on this. It is going to be interesting, now it is going to be a little too many lines, now I want you guys to be attentive and just see just see what is happening on the right hand side of the object from the station point from the station.

So, the idea is that if I am able to get a prospective sketch of this portion of the object I think what I will do is I will first of all simplify this thing to be like a block. Once i get this like a block, I can then try to get this semi circle and the circle later. So, the first thing is for me to get this part of the object as if it were a block let us do that I will look at these vertices from the station point project it downwards. These vertices going to be line on this edge is edge in prospective is this edge like that I get this part, now look at the point at the back this point over here. This is the intersection points which needs to be projecteddownwardsthis intersection point is what in and as I said I am looking at this part as it were a block.

So, I draw three blue lines look at one vertices take it down extended look at the other take that projection down extend that I get the block I get the block right. So, once I get the block, then getting the circular feature is not going to be difficult messy, it is not going to be difficult this is your central line. Now, what I am doing here is this I am going to be drawing the bunch of lines parallel to this. What I am going to be doing is I am going to be drawing bunch of lines parallel to this in this region, these lines are going to be intersecting this arch. I am going to be doing the same treatment to those points section as I have done for all the vertices of the object.

This is about the generic idea is wait and watch line the middle got that line getting the points of intersections. I guess got that line got the central linegot the archgot this part of the arch onesolid line should not be there should not be there should not be there, which one, is it this one? Ignore it, it should not be there does more it is pertaining to the circle from where to where. So, let me have these guise over here and then maybe I will explain it now, this block was fine, what I wanted to do was to get the arch in prospective. Now, how would I do that or how would I be able to do that? I draw bunch of lines which are parallel to these lines get the intersection thank you get the intersection between this arch and these lines.

I will get a bunch of points set of points or group of points and I am going to be dealing with those points the same way as I have dealt with all the other points. That is what the basic idea is, wait and watch the mess pertaining to that circle over there again the same thing I am going to be closing this circle within a box get the box in prospective get the intersection points. Eventually, get the circle, wait, wait, wait just watch I am run little fast working alright bottom nine bottom nine hold on, come on stay with me.

Once again the idea is to close this circle within a box get the box in red over here in prospective make that circle insect with bunch of parallel lines get the points of intersection prospective. Draw the corresponding and of course, there would be an arch over here, if you think there would benow this is what iswhat you should see at the end of your lab 8.
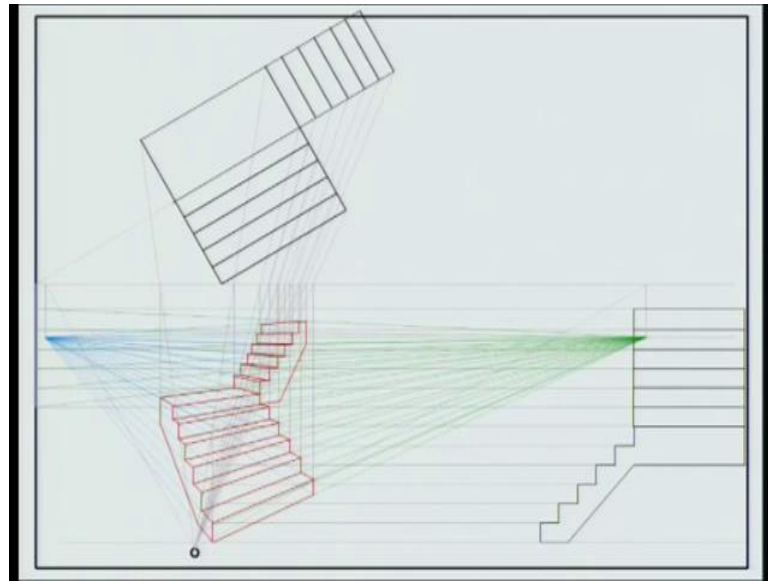
I want you to cover three point prospective, but we do not have much time and I have to wind things up in another four and half minutes just an animation of the two point prospective of a stay kits art easy. So, these probably answer your question, it answers your question, so depending on the height of the object you have it is below the horizon line. You are going to be seeing the roof of the object of its above the horizon line, you are going to be seeing you will not be seeing the roof of the object. So, essentially all these guise are, so this the horizon line these entire guise are below the horizon line and that is the reason why you are seeing these flat surfaces above the horizon line those flat surfaces are gone.

So, it has been eight months since you have cleared 8 months yeah almost move on that 10 months alright almost 10 months. Since you have cleared fine, this is where you start in your careers in your respective careers this is where you start. This is where you are, but ten years down the line, when you come and meet me, I would want to see you way up there in your lives.

Thank you.