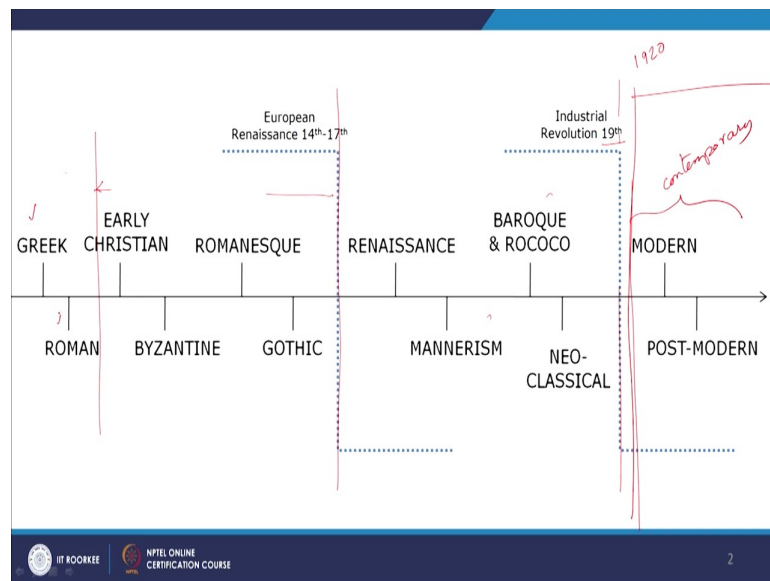


Contemporary Architecture and Design
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Lecture – 02
World Architecture and Design History

Welcome students, to the online NPTEL course Contemporary Architecture and Design. In this second lecture, we will discuss the brief about the History of Architecture and Design, and later we will move on to the main topic, which is Contemporary Architecture and Design. So, today we will discuss from the classical architecture, and art phase how the pre modern journey of architecture and design was. So, if we look at the timeline, this has been shown in the last slide of the previous lecture.

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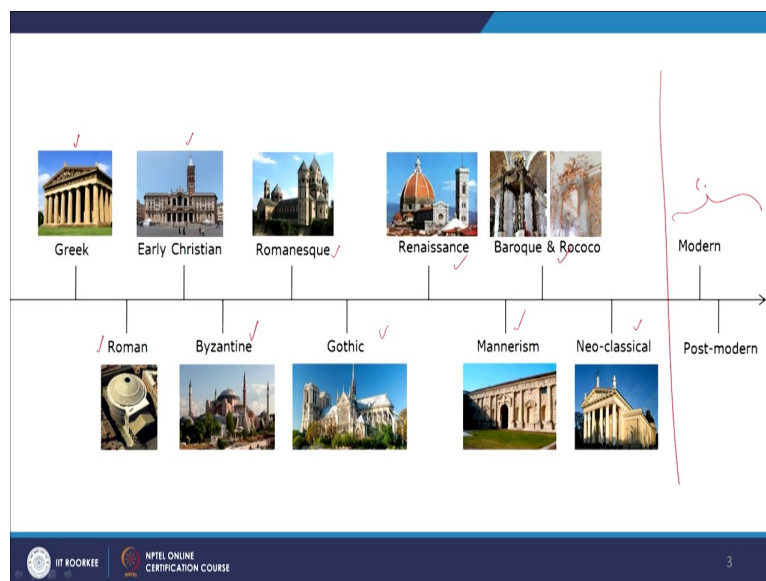
So, this Greek and Roman was the classical architecture, and design art style. Then this was the period between Classical to Renaissance. Then 14th century onwards Renaissance started, and it happened, it was till 17th century that was Renaissance architecture. And then, the Mannerism, Baroque and Rococo was there, then Neo-Classical, and after that Industrial Revolution started. So, after Industrial Revolution, which is 19th century, mostly 1920 onwards, the Modern architecture started, and Modern and Post-modern together is called contemporary. So, this will be our main part of discussion what happened during the contemporary architecture style, which is after

industrial revolution. We will discuss what is the industrial revolution in the next class after we finish the recapitulation of the history of art and architecture and art.

So, the first phase was the classical architecture style, which is Greek, and then Roman. We are not discussing about the other, what was happening in the other areas. We are just focusing on the European history, because in the Egypt and other places like Indus valley, civilization, and even in Chinese civilization, there are different art and architectural movement, architecture styles.

So, we are focusing on European style, because industrial revolution happened in Europe. And from there, when we start discussing contemporary architecture, so we will see that it started with the European... Europe was the center. So, other early phases of modern architecture like Bauhaus and other styles evolved in the European era, even in the pre modern. So, there was also a stage between industrial revolution to modern. So, there was a minor, small few movements like for the machine against, the machine movement, art nouveau and art and craft movement, those were there. So, those all are mostly in Europe, then gradually it is spreaded in America. So, Chicago movement and other movement started in modernism, and in post modernism onwards, or the late modernism onwards after Internationalism, it flourish all over the world.

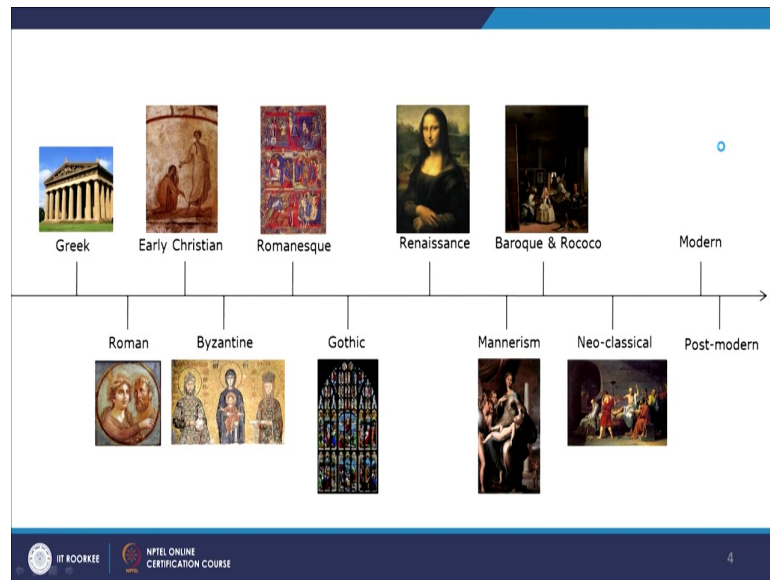
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So, we were discussing about the history of art and architecture, only in the European part. So, the Greek and Roman architecture was there first, then Early Christian,

Byzantine, Romanesque, Gothic, Renaissance, then Mannerism, then Baroque and Rococo, Neo-classical, after that this Industrial Revolution started, and this is the contemporary part of architecture.

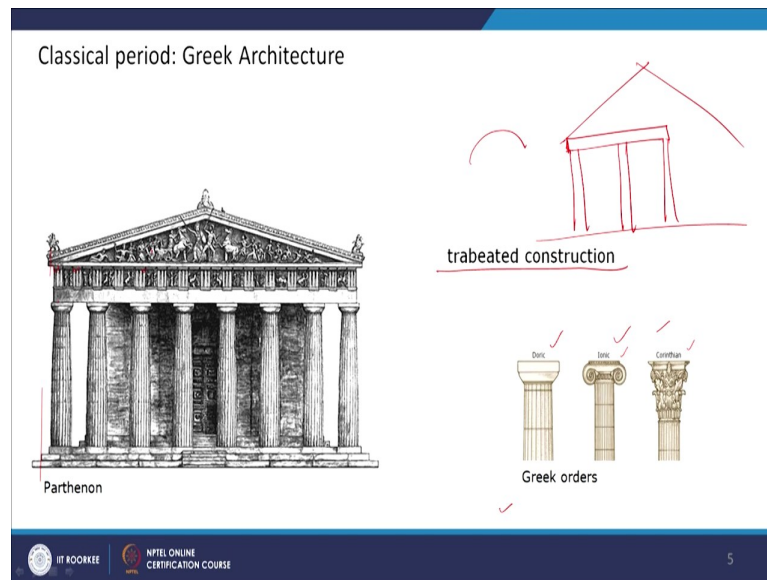
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And similarly, if we look at so in the art form, Greek will have mostly Greek and Roman art will have the statues. And then Roman also has some wall paintings, fresco works. Then Early Christian also has similar fresco works. But, ah, but these are mostly dedicated towards the spreading of Christianity. And also in the art, and in architecture, we were see this mostly the church was built

And then Byzantine, which we know that there are Byzantine, glass mosaics, were there. Then Romanesque, were there again in the wall on the frescos and then Gothic windows, and after that Renaissance started, and when different kind of paradigm of art movements started. And we will see that the similar move... there is a similarity between architecture, and art movement in all the phases. So, then similarly, in the art also the same movements were there Renaissance, Mannerism, Baroque Rococo, then Neo-classical after that this is industrial revolution.

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So, we will start with the discussion of architecture, and then will move towards the discussion of art during the history phases. So, we are discussing this, because architecture in the contemporary era is a continuation of the history, this is not a single break line. So, while discussing the history, we will see what was the pattern of visuals, how the visuals style changed, and what are the visual vocabulary, how they have changed over the time.

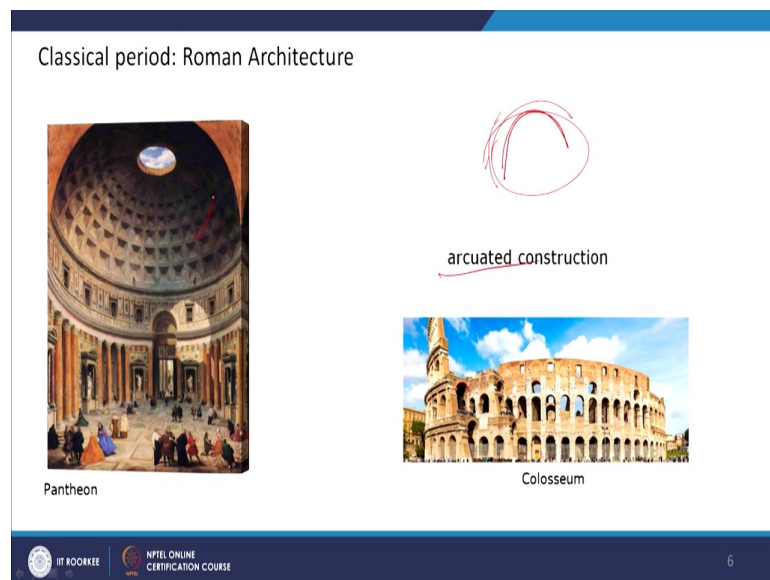
And then what happened during the industrial revolution will be better, we will have a backdrop of understanding, what happened after the industrial revolution. And why modernist, and post-modernist movements in architecture, and design was... what is the meaning of that, and how, and we can also link, what is there from the history to modern architecture and design.

So, in the classical period, we see most mostly the geometry was very important there. And in Greek architecture, they have made different orders, and those... everything has a particular proportion in Doric, Ionic, and Corinthian orders. Doric was a male evolved from male proportion ionic evolved from female proportion, Corinthian is more of a floral design.

And each... when we is look at Parthenon like structure, so they were particular proportion, and optical corrections and everything was, so important for Greek people, and but Greek architecture it is mostly trabeated. Trabeated means there is no arch. So, it

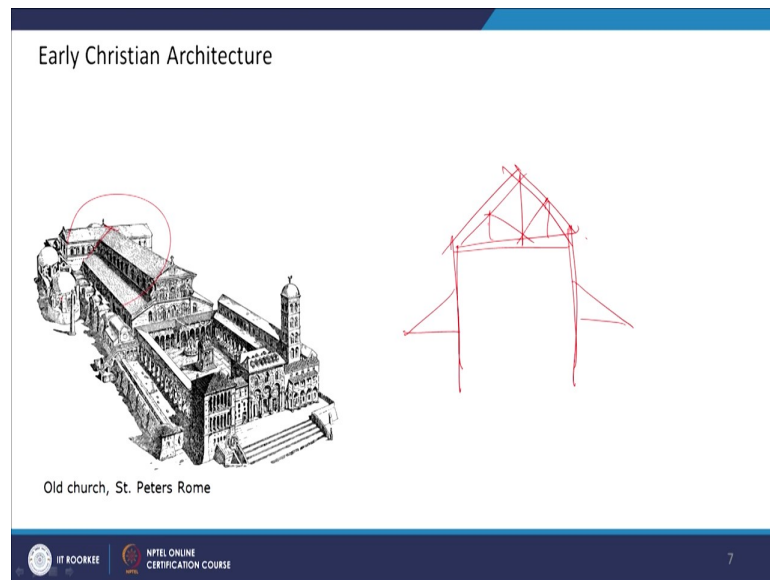
is flat stone panel members, which is placed on top of the columns, and then they have made the pediment. And if we look carefully, there's ornamentations over here, this is derivative of wooden structure to stone. So, this is a stone structures, but this were taking inspiration from the wooden structure.

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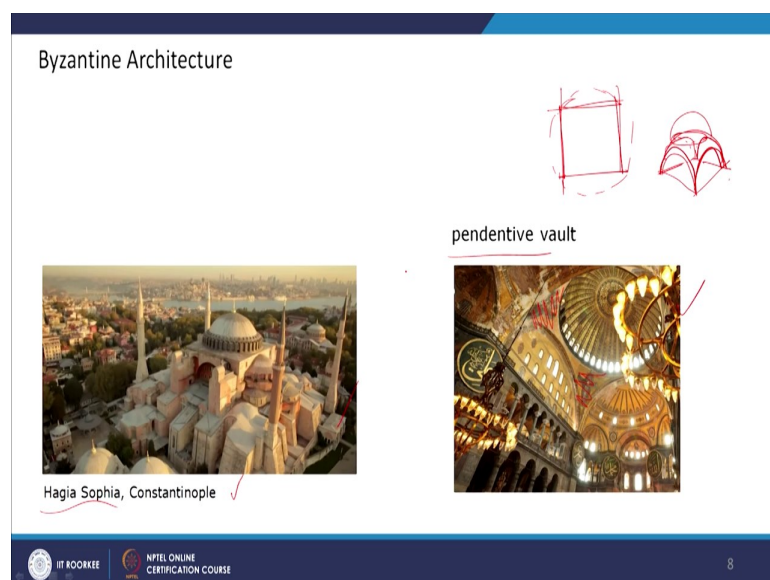
Now, in Rome, they were a little more advanced than in construction technique. And we are not going details in the construction; we just see what is the features of architecture features there. So, this is started making the arches. So, it is more arcuated, and they started using concrete in a many of their structure. So, they use stone as well as concrete. So, and when you make arch, and you rotate the arch in different direction, you get a dome. So, this is a dome in Pantheon Rome.

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The next is the Early Christian architecture, mostly we see the churches, but these churches we will see, the construction technique was trusses. So, this kind of structures if you see, if in the section, so this will be king post, queen post, trusses, and this kind of sections will be there. So, you see this section of the roof structure is something like that in early Christian.

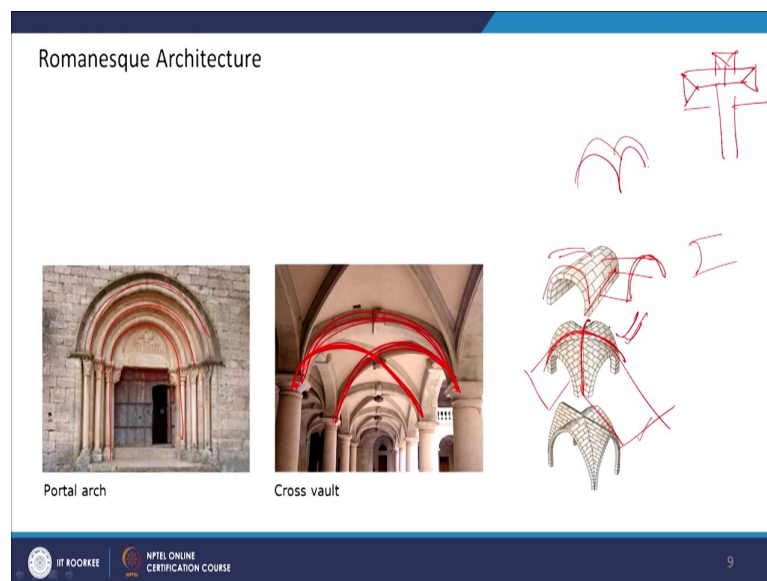
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After that this is Byzantine, Byzantine has this pendentive vault. So, it is a square base, and then a dome on the square base. So, if you look at the dome, this part of the dome

will be chamfered, and you get this pendentive vault. So, you can see this, if you chamfered this, you will get something like this, and there will be again arches like this, so this becomes square base, and a dome structure on top of it. So, you see this part of this is a part of a dome; on top of that they have made another dome in this structure, which is Hagia Sophia's, in Constantinople. So, this part is called the pendentive vault, which is a vaulted structure, but on a square base. So, they make this four arches, and then they start making the vault.

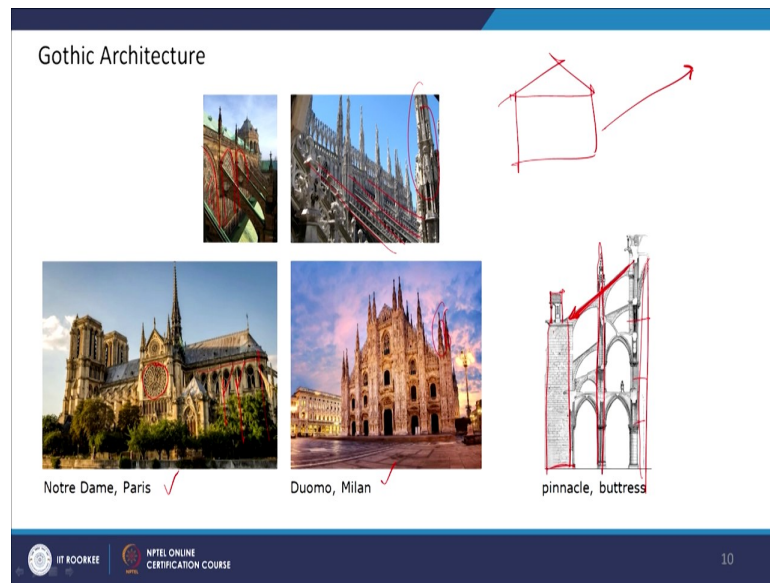
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And then comes the Romanesque architecture. So, Romanesque architecture, this series of Portaled arch is one of the feature of Romanesque architecture. And one of the interesting thing, they started making is the cross vault. In Byzantine, we have seen this kind of pendentive vault, and here we see the cross vault. So, you see from one corner to this is an arched arch structure, when they join these arches, these two diagonal arches, this becomes a cross vault or the groin vault, or rib vault.

And earlier, it was like a single vault, and when they make this cross arches, so there was a provision of making this crossed vault. So, after that we will see in the churches, and cathedrals, this cross vaulted structure was there. Earlier in early Christian it was like roof walls something like this. If we see from plan, and here the roof was... there was a provision of making these kinds of roofs. So, this can be the cross section of the church.

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Now, in the Gothic architecture, we see high ornamentation, and the main feature was this pinnacles and buttresses. So, if you look at Gothic architecture, the wall was highly ornate. And there was lot of huge punctures, or the fenestrations huge windows, where they made these glass paintings of Gothic period, and highly ornamented facades, the rose windows were one of the key criteria. So, this is the Notre Dame, Paris, and Duomo, de Milan was one of the few examples of Gothic architecture. So, this is the Duomo de Milano's flying buttresses.

So, when the façade becomes very light, they thought that it might fall down, because this is made out of stone. So, there is lot of punctuation in the facade. So, to support this façade, this flying buttress, these are called flying buttresses, these were made, and this was supported by heavy strong wall.

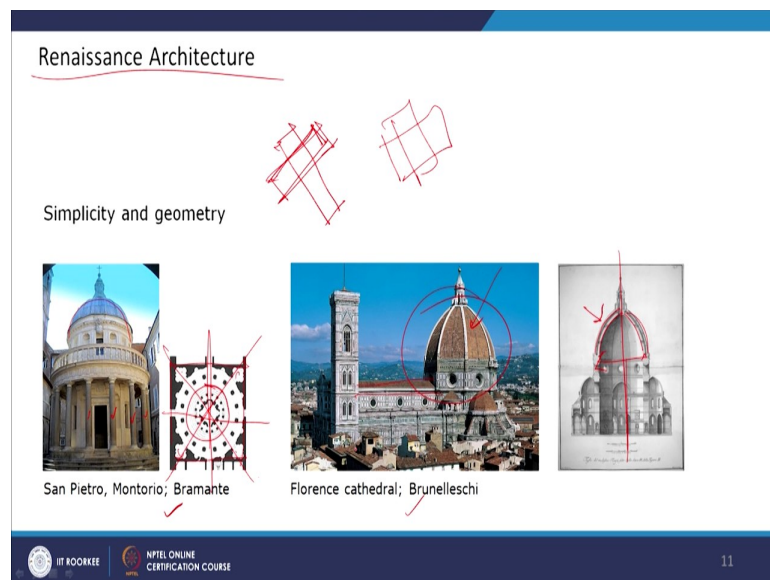
And again, on the top of the strong wall, they made pinnacles. So, this is one support, and then on top of that they have again put some weights. So, these are the pinnacles, this is the pinnacles on top of the flying buttresses, these are the flying buttresses. You can also see flying buttresses here coming from the Notre Dame cathedral of Paris.

So, in classical architecture, we have seen a very geometric approach of design, gradually this started with the new advancement of construction technique, they are going up for the more ornamentation. In Gothic, they reached the peak of ornamentation. So, this started with the very less ornate structure, if you look at the classical architecture

style, this is... there is ornamentation. But, if you look at Parthenon, and pantheon, they have very these are just fused on the stones.

And then, this is a very simplistic plan, so this if you look at, so this just space over there, and then there series of columns on outside. And from there, they have reached they started adding the ornamentation gradually, so you see lot of ornamentation, and then they experimented with series of arches. So, this is only one functional arch, and then the series of arches are creating the portal. And in Gothic, they reach the peak. So, if you look at the facade treatment here in the Duomo, there are lot of many things that are going on in the facade. So, Gothic is the peak of ornamentation.

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Now, just after Gothic, they come down to the Renaissance. So, this is the European Renaissance appeared. When they by talking about the position of man is going more... going higher, so humanity is over powering the church church's capacity. So, before that the church and pope's power was quite high, and then they started questioning that and then there was lot of flourishing knowledge.... got flourishing different domains of science, and arts, and humanities.

So, this started questioning that, and then they again went back to the geometric thing. So, geometry is something, which is manmade, which looks manmade, and which is like centralized mass was there, and it is very geometric, and very minimalist in nature again.

So, architecture and design, sometimes it goes like that. So, they start with minimalist, so the approach, and then it grows in the peak of ornamentation, then it sometimes goes back to the again minimalist approach. So, this also happened in the modernist and post-modernist era. So, this is the rotation of design process, which comes back again sometimes, not exactly comes back the same in the same way, but it is kind of revival.

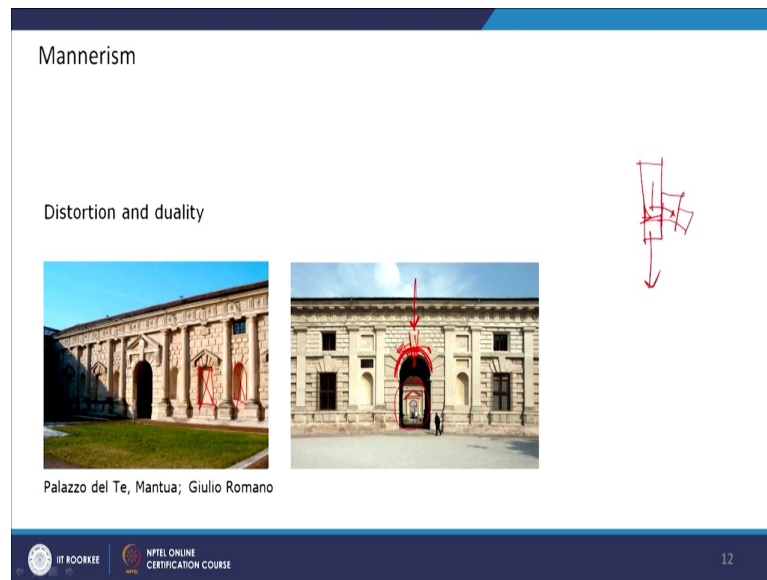
So, in Renaissance architecture, if you look at the Bramante's San Pietro the plan is just like a rotunda, this like a cylindrical plan, and is a very simplistic dome on top, and then series of columns. And if you look at the column's ornamentation is very plain, if you compare with the Gothic architecture style, and if you look at the plan, so this is the main... the church, and this is just bounded by a square plan with few alters on... over there.

And this is this is symmetrical... radially symmetrical, and he also question the construction technique and the plan... planning of the arch, which should look like a Latin cross, or at least a Greek cross in some cases. So, this here, he is making radially symmetrical arch, which was very radially symmetrical church, which was very unique to that time.

And then, Brunelleschi's Florence cathedral, if you look at the dome, so this construction technique of the dome is quite interesting, the story of this is quite interesting, it was a huge span of a dome. And he invented different technique to make the dome. So, there was two different vaults are there, so this is the outer vault you are seeing, there is another vault inside.

And... there was different... this is very interesting to know, what is construction technique; we are not going into detail into the construction. But, here if you look at the aesthetic part, so this is also very simplistic in nature. And these are the facade ornamentations are drastically less, if you compare to the previous movements, which is Gothic style.

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Now, next after this Renaissance, this is the next part of the Renaissance, or the continuation of the Renaissance, which is Mannerism and is just before another movement, which is Baroque, and then Rococo. So, Baroque and Rococo we'll come to the Baroque and Rococo style, which is again extremely high in ornamentation, so it is something in between.

So, here we see the facade treatment, which is there is a little distortion. And then, the architectural vocabulary was used in a different metaphor, and different way. It was not supposed to be something the way, architectural vocabulary was used was giving a duality, and questioning the existence of that. So, how it is happening here, if you look at this is the key stone of an arch, which is supposed to be like this, and supposed to take the load, so it cannot drop like that, because if it drops like that, it is not passing the load to this.

So, this is actually questioning the structural stability of this arch. So, this is not actually a key stone, this is a just a facade treatment. And this is a continuous arch is there inside, and it is just a treatment on the façade, and which is questioning the duality of the existence of the key stone. The key stone, if the key stone is like that, then it can transfer the load, but if it is like this, then it will fall down.

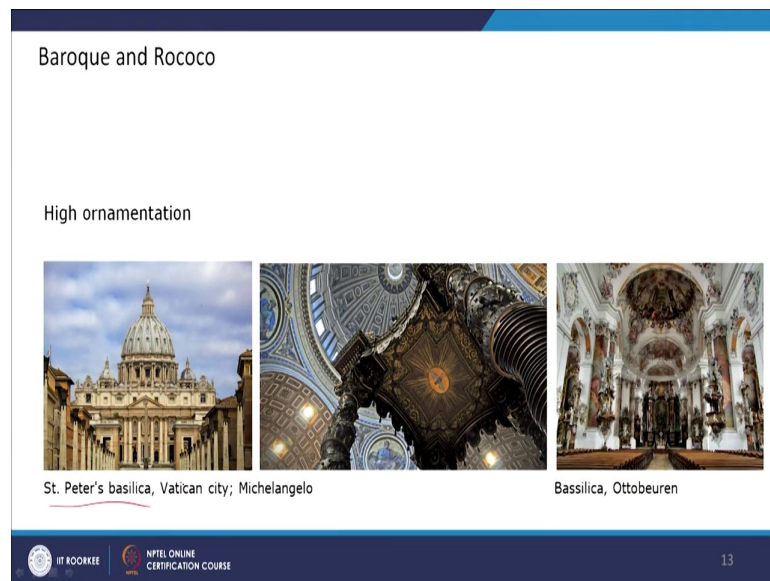
Now, again if you look at, so these looks like windows or the fenestration, but these are all covered. Now, also if you look at this part carefully, so there is a arch, an on top of

that trabeated. So, two different things, which is very different from each other, or getting mixed, and which is on top of each other.

Now, if you look at these columns, these are not even columns. So, these columns, these are not taking the load, because this is the load bearing wall, which is taking its self-load. And these are just half column, which is like a relief work on top of it. And which gives a sense of column, which is taking the load from here is not actually a column.

So, these are these facade treatments are questioning the architectural vocabulary, and this has a duality. And we can see, there is an extension of... I mean there is a change from the simplistic architecture to the work, on the... to the aesthetic work, on the facade treatment. So, it is going towards again a more ornamental approach.

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Now, next is this Baroque and Rococo, again it is extremely high on ornamentation. So, this is St. Peter's basilica's, Vatican City, which is done by Michelangelo. There are many other architects, who worked in the St. Peter's, basilica, so this is Michelangelo spark. And if you look at again, this is extremely high in ornamentation. So, this is the inside part of the St. Peter's basilica, so if you look at the altars, and this works on the column, and on the again the roof, and the fresco works, this is extremely high on ornamentation.

This is a Rococo style of architecture so, again if you look at the ornamentation is very high. So, Baroque and Rococo is mostly similar, and they are high on ornamentation. Baroque came first, and Rococo is sometimes called the late Baroque.

The Baroque and Rococo has a little difference in the mood of this architecture and painting, Baroque has... more heavy meaning, or little darker themes in art and architecture, and Rococo is very light, there will be fairies and very light hearted things were portrayed in Rococo, but mostly this is similar. And the ornamentation is extremely high in both the cases.

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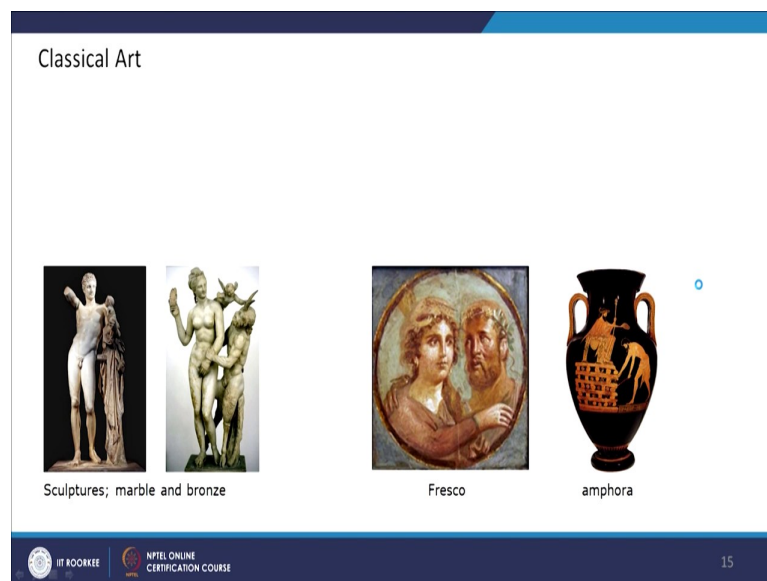


Now, after that there is a Neo-classical architecture, again less in ornamentation. So, if you look at, so Neo-classical architecture again goes back to the classical, so that is why, this is Neo-classical, which is etymologically, this is this means, the new form of classical. So, they went back to the classical architecture, which is again as we were discussing this is less in ornamentation. So, again you can see on the facade, it was again becoming less ornament... ornamental.

So, this if you look at, so they has lot of inspirations from the Classical, Greek, and Roman architecture. So, this Greek style of architecture was relooked, and new kind of vocabulary of a design evolved from the new... the reinterpretation of the classical architecture.

Andrea Palladio works are also falls under this category. So, here also if you look at, this is this is going this is emphasizing on the geometry. And this is again from two these two axis, this is symmetrical, which is also has a similarity with the Renaissance architecture, and because Renaissance also talked about the geometry. And here everything is similar, and these parts are actually quite it is a kind of a new way of replica, new kind of interpretation of Greek architecture. So, you can see this kind of pediment, and all these columns, these ionic columns are adding... added to also for four sides of facade.

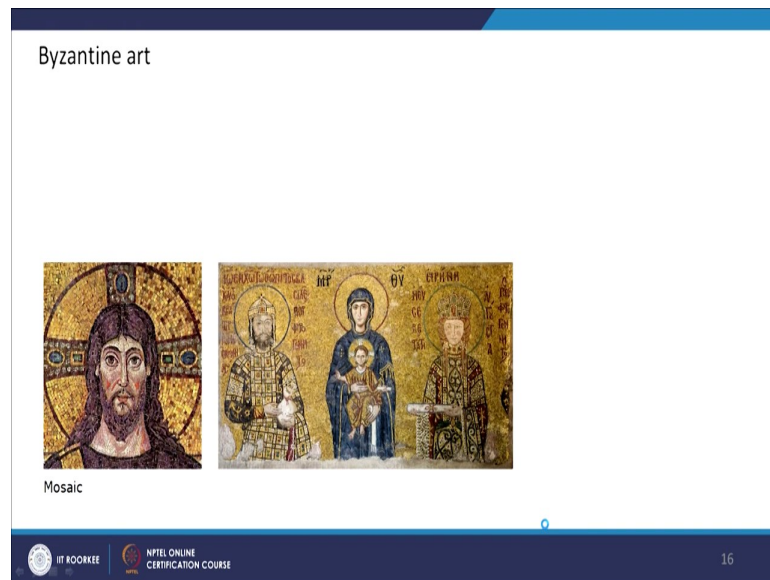
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So, after that we talk about the, what is happening in the art movement. So, this after Neo-classical architecture, industrial revolution started, and we start the modern era, and the contemporary era. So, Neo-classical was the last, and then the modern era started; then this after industrial revolution, which is a 1920s onwards. The modern architecture, which is to... the part is first part is modern, and then this post-modern together, this is a contemporary architecture together, we call it a contemporary architecture, or design this started.

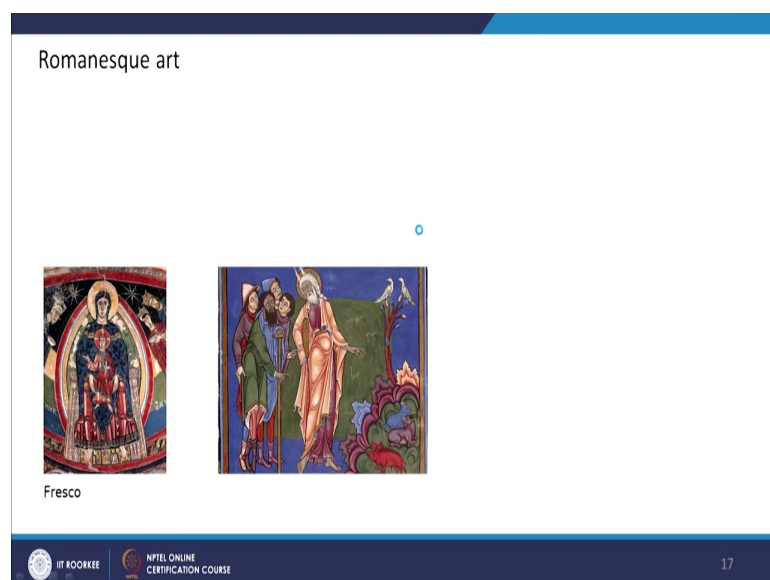
So, parallely what was happening in the classical arts. So, classical art in Roman and Greek style, which was mostly a marble, or bronze sculptures, and they valued the proportion, human proportion, and then ideal proportion of the figure. And then in Rome, we see a fresco work on the wall painting, and lot of paintings on the vases, in a case of Greek style.

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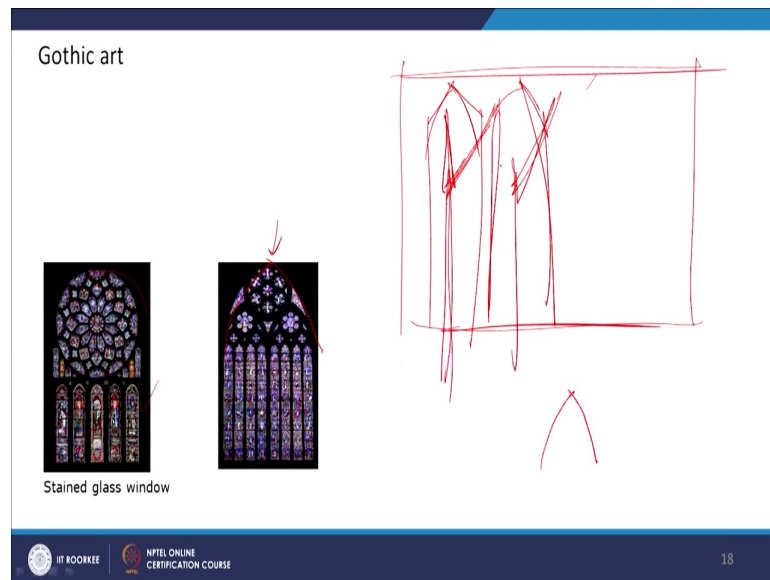
In the Byzantine style, the mosaic, glass mosaics are were very predominance. So, we see in the Byzantine architecture, within the interior of this Byzantine architecture, in Hagia Sophia, or Santa Sophia, or other examples of Byzantine architecture, this Byzantine glass mosaic... the work. So, these are the small glass different colored glass, and with these small pieces of glass, they made these murals.

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After that the Romanesque art, again this is a wall fresco works, so which is there in the inside the cathedrals, and churches.

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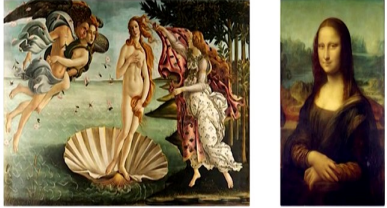


And the Gothic art mostly, we see the stained glass windows in the cathedrals. So this kind of stained glass windows, we see in the cathedrals like Notre Dame Cathedral of Paris. So, because of this huge windows, which has this Gothic glass painting, the fenestration, the amount of fenestration becomes very high.

And in Gothic architecture also, there is a Gothic arch, which is quite important, which is the style of Gothic architecture. So, this is the Gothic arch, and this is the rose window, and because of this fenestration this amount of a stone work becomes very less. And then that is why, they started making this flying buttresses, and on top of that this pinnacles, they started making.

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Renaissance art



Venus, Botticelli

Mona Lisa, Leonardo da Vinci


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The slide displays two iconic Renaissance paintings side-by-side. On the left is Sandro Botticelli's 'Primavera', depicting Venus seated on a seashell with other figures in a lush landscape. On the right is Leonardo da Vinci's 'Mona Lisa', a portrait of a woman with a subtle, enigmatic smile. The slide includes the IIT Roorkee and NPTEL logos at the bottom.

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Romanesque art



Fresco

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The slide shows two examples of Romanesque art. On the left is a fresco of the Virgin Mary and Child Jesus, with figures arranged in a flat, hierarchical manner. On the right is another fresco depicting a scene with several figures, also showing a lack of naturalistic perspective. The slide includes the IIT Roorkee and NPTEL logos at the bottom.

So, next is the Renaissance art. Renaissance art there is there is lot of change of paradigm started in Renaissance painting. So, before that the painting, if you look at here, there is no proper way of perspective was depicted. So, this figures, were juxtaposed on top of each other. And even in Byzantine, everybody's position was side by side on, or on top of each other. But, this is not clearly showing exploring the possibility of perspective.

So, here in Botticelli's work and Mona Lisa's work and many other Renaissance painters work. The perspective human eye point of view was explored in the first time. So, and if you look at, so this looks like a the way people... see. So, this is more like figurative approach of painting, before that this were a less figurative, and more abstract kind of painting.


In terms of sculpture, this were this were figurative, because this is one sculpture as you know, they are not making group of sculpture, and drawing... it drawing a perspective in the sculpture. And also in the walls sculpture, wall mural of a classical Greek and architecture from you were see this flat scenes of works. So, every the statues or the this stone works will be the figures will be beside each other. And so they did not explore perspective in detail.

And we see in the Renaissance painting lot of intricate way of drawing, and they have studied the human anatomy. And the way they are drawing the human figure was much more figurative, and much more matured than the previous style.

Now, after that this mannerism, so they again started ornamenting it. So, they studied the human anatomy, and the ideal proportions, and the body postures. And here they started exaggerating the posture, they are trying to break the proportion, and making it more abstract and ornate.

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Mannerism



Madona; Parmigianino

Samson Slaying a Philistine, Giambologna

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So, if you look at this proportion of Madonna, so you will see the length of the body was elongated. So, if you look at, she is extremely tall in compared to human body proportion, and if you look at, the neck is very long. And the this is becoming idealized, and in that way they are trying to make a abstract depiction of beauty.

So, this is not human proportion, and they are changing the proportion. Even in the sculpture, the posture of the sculpture is very is like it is it is not natural way of posture. So, every hand movement, and this posture is very dramatic in nature. So, this kind of change of... this is not very natural posture of two people. So, this is this is lot of drama going on in the posture.

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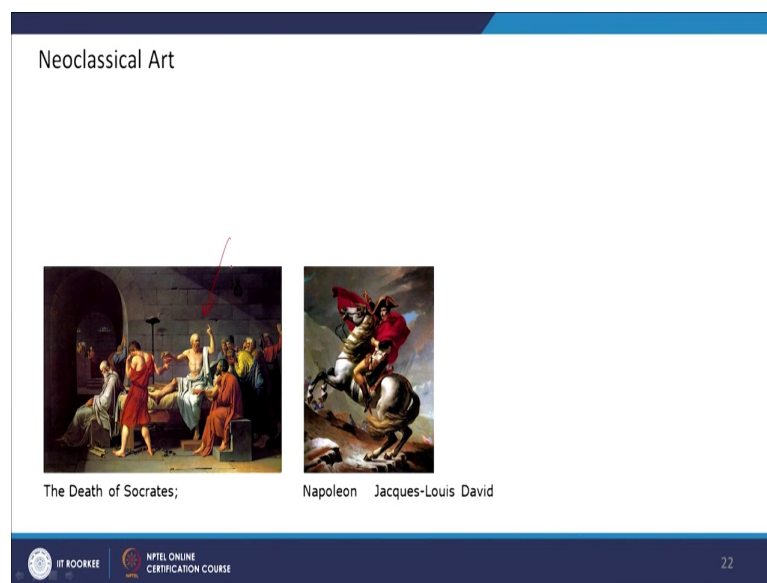
So, same thing started getting exaggerating in the Baroque and Rococo. So, the one style in art is chiaroscuro, so this is juxtaposition of light and shadows. So, if you look at, so in this Vermeer's painting of girl with a pearl earring. So, here there is a lot of light, and just here is a very dark background. So, there is a lot of contrast going on in the very adjacent vicinity. So, which was not there in the previous style, so they started exploring with the contrast.

Similarly, in the Velazquez, Las Meninas, you can see this sleet of line, which is where light is following. And here you can see, this part of the human figure, only this part is illuminated. And then only this few part of the faces illuminated, even the king, when

king is coming. So, the king's silhouette is showing, and from behind this is the vibrant light. So, this is the juxtaposition of light and shadow that was there.

And even, when they are working on the architecture, this is all intricate floral patterns, and the filigree works. They also give this juxtaposition of light and shadow, when the light sunlight or the other kind of illumination will fall on top of this work. They will also create this juxtaposition of light and shadow, which is very... which has high attraction value.

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Now, in the Neo-classical style, again they started exploring the classical postures. And here, again the postures were quite like statue. And so this is the death of Socrates, and Napoleon by Jacques-Louis David. And here also if you look at this position, this looks like it is inspired from this marble statue, which was there in the Classical, Greek, and Roman art that was there, which is like the marble statues were there. And these paintings are something like inspired from this marble statue, even their draperies, and the postures are kind of mimicked from other statues. And this also has an unnatural way of the settings, and it looks like everybody's posing for this particular effect. And which was not there, in the Renaissance, and other styles. So, gradually in the Mannerism it was there, and then Baroque and Rococo was quite different, and then again Neo-classical was again different. So, after that Neo-classical movement mostly, it is industrial revolution. And in after industrial revolution, totally the paradigm of architecture and art changed.

And there was two different school of thought, which is which went for the machine, because industrial revolution is the age of machine started there. So, one group of architects and designer thought, we should embrace the machine aesthetics. And another group of designer and architect thought that we should go with the traditional style, which is against the machine. And then, the two opposite pole of school of thought started, and emerged. And from there, the modern journey of contemporary architecture, and design, or the modernism started. So, we will discuss about the industrial revolution in the next class.

Thank you.