

ART 1600, The Aesthetics of Architecture, Interiors, and Design
Fall Semester 2012
Grover Center W115 M,W,F: 12:55 - 1:50

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Office hours: MTWTH: 11:00 - 12:00, MW: 2:00 - 4:00

Study Guide for Exam 6: Monday, November 19: 12:55 - 1:50pm

Study for this exam. *It will be a lot like Exam 1 & 2 & 3 & 4 & 5. Be sure to go over the lecture/slide sets at least one full time. Be sure to watch the short videos as well. This is not an especially 'difficult' class, but you will need to study to do well on the exams.*

Exam 6 will cover everything that has been presented in class on the power point slide image sets, including the videos that I showed, and everything that I have stated in lecture and discussion.

This includes:

10. Concepts in Architecture & Design: Nature and Design

slides 2 & 3: know what a 'concept' in design is.

slides 4 & 5: know that a 'philosophy' is a larger, overarching, design orientation, and that it is bigger than a 'concept'

slide 6: know what 'biomimicry' is, and that it is a current, and internationally popular, way to approach the design of the built environment, at any scale, such as furniture, rooms, buildings, or even whole city plans.

slides 7 - 45: know that these are all examples of natural forms and systems, either biological, or botanical, and that designers use these kinds of shapes and systems as models for their design work.

slide 46: know the definition of 'biomimicry'.

slide 47: know that designers view Nature as a constant reference point for basing their own work upon.

slides 49 - 70: I will not ask you to identify any of these works specifically, but I will expect you to know that all of these are examples of biomimicry in action; that the designers have based the design of these works upon a natural form, material, or concept.

11. Concepts in Architecture & Design: Geometry and Design

slide 1: know that geometry is important in design because it can be a visual characteristic, and it can be a tool, a method, for designers to create.

slide 3: know that the simple act of 'lining things up' can be a part of creating a sense of order, or intention, of purpose, and of good design.

slides 5 - 7: know that this building in Singapore is a good example of a fairly straightforward 'grid' being used to organize the elements that make up the facade of the building, and that the protruding rectangular box shaped pieces are coordinated with the grid of the facade.

slide 8: an example of things lining up as a way to create a sense of order.

slide 11: know that the little holes in the concrete wall are the places where the steel ties were located in the formwork. When the formwork is stripped off of the hardened concrete wall, the ties are left inside and the little holes are where the tip of the steel tie was cut off. Architects like to leave these holes visible, rather than filling them in and covering them up, because it represents the way the concrete wall was actually constructed.

slide 12 - 14: know that this interior is carefully laid out and organized, and that geometry is involved in how that is being done.

slides 15 & 16: know that the exterior of this house is a good example of a geometrically developed facade.

slide 17 - 23: know that the interior of this house is a very good example of geometry in action; that the interior elements, such as the vertical wall in slide 17 & 19, are all sized, shaped, and proportioned by using the rectangular geometry that we see.

slides 24 - 26: know that these furniture pieces are good examples of geometry based design.

slides 27 - 37: know that each of these buildings is a good example of geometry based design.

slides 38 - 40: know that this is the famous Habitat building, located in Montreal, Canada, and was designed by the Israeli-Canadian architect Moshe Safdie, in 1967, for the Expo '67 event.

slides 41 - 43: know what a geodesic dome is.

slide 44: know who Buckminster Fuller was, to the degree that I described him in class and on this slide.

slides 45 & 46: know that this is the Dymaxion Car, designed by Buckminster Fuller in 1933.

slide 48 & 49: know that this is the Dymaxion House, designed by Buckminster Fuller in the early 1940's, and that he intended it to be able to be easily disassembled and moved, and that he wanted it to be mass produced, hygienic, and able to stand up to the winds of a tornado.

slide 54: know that a geodesic dome has the properties listed on this slide.

slides 56 - 62: know that these basic geometric shapes and objects are all potentially useful in designing objects and spaces.

slide 63: know what a 'catenary' curve is.

slide 64: know that the famous St. Louis Gateway Arch is an inverted catenary curve.

slides 65 - 98: know that these are all examples of geometry based design. I will not ask you to identify any of these specifically

slides 108 - 113: know that each of these naturally occurring crystals are good examples of geometry in the natural world.

slides 114 - 117: know that this building is the National Museum of Qatar, designed by French architect Jean Nouvel, and that the overall form of the building is based upon a 'desert rose', shown in slides 112 & 113.

12. Composing With Materials

slide 1: know that Form, Material, and Color are the three fundamental 'tools' that designers have available to create physical, built, environments.

slide 2 & 3 4: know that the Same-ness or Difference that exists within a space, or object, is a characteristic that is under the control of the designer, and that the degree to which Same-ness or Difference exists in a work can be controlled by using the Color, Form, and Material that the object, or space, is made out of.

slide 6: know that these are all qualities of materials that designers use to create intended characteristics in their work.

slides 14 & 15: know that this floor material is Terrazzo.

slide 16: know that terrazzo is a poured, concrete like, material that contains small pieces of marble, or glass, or other colorful materials, and that the areas of color are divided by metal divider strips that are put down before the terrazzo is poured.

slide 17: know that this floor, in the Clay Center for the Arts and Sciences, in Charleston, West Virginia, is terrazzo.

slides 18 - 21: know how terrazzo is installed and finished, as described in class, and in these slides.

slide 23: be sure to watch the Terrazzo Floor Video: there will be at least one question based on this video.

slide 25: know that there are no Good, or Bad materials, but rather it is in the way that they are used that results in good, or bad, design.

slides 26 & 27: know that these are all good ways to help create 'good' design; each of these is a 'strategy' that can be useful in creating interesting, good, design.

slides 28 - 37: know that each of these images is an example of a good way to create something interesting, 'good', in the design of a space, or object. Remember, these images are all about Composing with Materials, meaning the making of good design, using the qualities of specific materials in an interesting, expressive, revealing, way.

slides 41 - 46: know that the current popularity of concrete counter tops has produced a great variety of well thought out, well designed, versions of counter tops, as shown in these images.

slide 42: know roughly how Portland Cement (the main ingredient in concrete) is made. Watch the How Portland Cement is made Video. There will be at least two questions based upon this video.

slide 42: as I discussed in class, know that concrete IS an 'eco' material in the sense that once it is poured, hardens, and is functioning, it is a clean material that does not OFFGAS (know that 'offgas' means the releasing of toxic, or unhealthy, chemicals from a product, such as new carpet, or newly painted surfaces) but that concrete IS NOT an 'eco' material in the sense that it takes a tremendous amount of energy to manufacture the Portland cement that goes into concrete, as shown in the video.

slides 47 & 48: know that these two furniture pieces are made using concrete

slides 49 - 52: know that this table, the 'Arc' table, was designed using complex mathematical models and that its final shape is an expression of the careful refinement of these models. This table did not simply come about from a casual sketch.

slides 53 - 57: know that these are all examples of good ways to use materials to create good design effects.

slides 58 - 60: know that these glass mosaic tiles are the products of the Italian company called Bisazza, one of the best known glass tile companies in the world.

slides 62 - 65: know the concept of 'standard sizes' in terms of materials. know that many, many building products, such as those listed in slide 64, are manufactured in standard sizes, and that using these standard sizes is a very good way to save money, and time, in the construction of spaces, buildings, and objects such as furniture.

slides 67 - 69: be sure to watch the CNC Machine Makes A Wood Cabinet video. there will be at least one question based upon this video.
know that CNC machines have taken the place of human hand cutting in the making of a great many products, and that CNC machine are able to produce both amazing accuracy and amazing form, including complex curves, angles, and other shapes that would be very difficult to manufacture otherwise.

slides 70 & 71: know that both these buildings, designed by Frank Gehry, used computer software in the design of the buildings, and required computer, CNC, machines in the manufacturing of components used to build these buildings.

slides 73 - 76: know that reclaimed, and recycled, materials are today widely used to make new products, such as furniture. know that the items shown in these images are examples of reclaimed and recycled materials being used to make new products.

slides 78 - 82: know that this house is a good example of using the characteristics of wood for the structure of the building, much of which is exposed, and expresses itself through the shapes and sizes of the wood components, and for the finished interior surfaces of the rooms.

slide 88: be sure to watch the PPG Glass Manufacturing Video (the 4 minute video). know roughly how 'float glass' is manufactured, as I discussed in class, and is shown in this video. there will be at least one question based upon this video.

This Exam only covers up to slide 88 of 'Composing With Materials'

Exam 6 will be multiple choice, approximately 50 questions. Each student will have a paper copy of the exam and a scantron answer sheet.

Bring a pencil for the exam.

Be sure to fill out your name and your PID number on the scantron sheet.

