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

Matthew Ziff, M. Arch, Associate Professor, Interior Architecture Area Chair
School of Art
College of Fine Arts
Office: Grover Center W325
Office Phone: 740. 593. 2869
Email: ziff@ohio.edu
Office hours: MTWTH: 11:00 - 12:00, MW: 2:00 - 4:00

Study Guide for Exam 7: Friday, December 14: 10:10 - 12:20pm

Study for this exam. *It will be a lot like Exam 1 & 2 & 3 & 4 & 5 & 6. 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 7 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 lectures:

12. Composing With Materials: slides 89 - the end

slides 89, 90: know about Dale Chihuly, and be sure to watch the short video about him

slides 91 - 102: know the basic characteristics of each of these types of glass

slides 104 - 07: know that this is the Corning Museum of Glass

slides 108, 109: know that these metal connectors are called 'spiders', and that they are used to connect sheets of glass to a supporting, usually metal, structure, such as a column or a frame.

slides 110 -113: know that this place is the Toronto Galleria, designed by Santiago Calatrava, currently the world's most famous engineer

slides114 - 116: know that this night club interior in Switzerland was designed by Santiago Calatrava, and that it is especially interesting to us (designers) because Calatrava is an engineer who designs bridges and large structures, but he also designs small scale objects, such as furniture and window shutters.

slide 118: know that sand (silica) is the main ingredient in making glass

slide134: know that windows are defined as being either 'fixed', meaning that the do not open, or 'operable', meaning that they do open, and close.

slides 136 - 142: know that this building is the Leonardo Glass company building, in Germany, and that the design of the building makes use of bio-mimicry in that the interior columns and structure are shaped based upon force distribution in the same way that bones acquire their shape.

slides 143, 144: know that this is the Glass House, designed by Phillip Johnson, in 1949. It is famous for its all glass perimeter walls which make the boundary between inside and outside disappear.

slides 152 - 154: know that water weighs 62.4 pounds per cubic foot, and that granite weighs 166 pounds per cubic foot. (I know that this may seem silly to have to remember, but it will influence the way you see the world around you; trust me!)

slides 156 - 162: know that this small studio building uses Coreten steel for its exterior surface, and that Coreten steel is specially fabricated to rust, and then stop. This is actually a form of rust proofing, and it creates this specific red-ish colored surface.

13. Color and Light

slide 6: know that there are three basic sources of light on earth: Sunlight/Daylight, Combustion (fire), and Electrical (human created)

slide 8: know that in lighting terminology what we commonly call a light 'bulb' is called a 'lamp', and that the fixture a lamp is located in is called a 'luminaire'.
know that of the many light source properties, Initial Cost, Operating Cost, Lamp Life, and Heat Generated are typically the most important in making decisions for an architectural interior application.

slides 9, 10, 11: know that Incandescent lamps (what we usually think of as 'regular light bulbs') and fluorescent lamps (the tubes in classroom ceiling light fixtures) are the most commonly used.
Of these two types of 'lamps', incandescent typically last about 2,000 hours, while fluorescent typically last about 20,000 hours.

slide 10: know that an incandescent lamp (light bulb) only emit 10% of their energy as visible light, and that 90% is emitted as heat.

slides 13, 14: know that bioluminescence is is a naturally occurring form of chem-iluminescence where energy is released by a chemical reaction in the form of light emission.

slide 18 - 30: know that in terms of architectural interior lighting applications that lighting is classified as Ambient light, Task light, or Accent light. Know what each of these means and be prepared to identify, in one of these photographs, the lighting as accent, task, or ambient.

slide 31: know that these five factors are what make visual acuity, seeing clearly, possible.

slide 32: know that there are standard, recommended, lighting levels, expressed in foot candles (a measure of how much light is falling on a surfaces). The lower the foot candle level, the darker/dimmer the light level is.

slide 34: know that what humans see is only a small portion of the total range of emitted energy that is around us. The visible spectrum, for humans, does not include wavelengths that other creatures/animals are capable of seeing.

slide 35: know that ROYGBIV is short hand/acronym for the colors of the rainbow.

slide 36: know that the color wheel is a device for presenting/showing the relationships of colors to other colors. The color wheel is used by designers to establish color palettes of specific color relationships, such as complimentary, analogous, and triadic.

slide 38: know that a prism separates sunlight into its component wavelengths/colors.

slides 41, 42, 43: know that the traditional primary colors are red, yellow, blue. know that the secondary colors are those that are located between the primary colors on the color wheel.

slides 44, 45: know that a monochromatic color palette is created by using one hue, such as red, or yellow, and then adding white, called a 'tint', black, called a 'shade', or grey, called a 'tone' to that hue.

slides 47, 48, 49: know that these are specific color palettes, made up of specific color relationships.

slide 50: know that the fundamental language for beginning a discussion about color starts with Hue, Value, Intensity. Know what each of these means.

slide 51: know the concept of 'tint', 'shade', and 'tone'.

slides 52, 53: know that each of these is a way to create, combine, colors. RGB, additive color mixing, is when all the colors of light are brought together, resulting in white.

Subtractive color mixing is when all the colors, using ink, or paint, are brought together resulting in a near black (actually a muddy dark brown)

slide 57: know that RGB color processes (mixing light) is used for video projection and computer display, and that CMYK, (mixing ink or paint) is used for print material, such as magazines.

slides 58 - 61: know that Albert Munsell created a color system that is based on hue, value, and intensity, and that his system is intended to be a rational way to describe color, using numbers instead of names for specific colors.

slide 63: know that these are examples of the Munsell color book pages. be able to recognize them as such.

slide 91: know that Josef Albers was a Bauhaus teacher and artist, and that he is famous for his color study paintings, such as the "Homage To The Square" series.

slide 93, 94: know that Robert Swain is an artist who is famous for his color studies, such as those shown here. Be able to recognize these paintings as Robert Swain's.

slide 95: Be sure to read my web page article "My Understanding of Color" there will be two test questions based upon the points identified in this. This web page is really just a summary listing of points made by the authors of the book "Color" The Secret Influence".

slides 98 - 101: know that materials used in architectural interiors can be enhanced and emphasized by using light in a controlled, intentional way.

slide 107: know that it is the changing relationship of the sun to the place upon the earth's surface where we are located that determines how a building, such as a house, receives sunlight during any particular day, during the year. The diagrams on this slide show the extremes of winter and summer sun angles. This variation is the fundamental component that makes passive solar design useful.

slide 108: know that the seasons are caused by the changing tilt of the earth, and the resulting longer, or shorter path through the earth's atmosphere that the sun's light must travel.

slides 109 - 129: know that the quality of light in an interior environment depends upon the:

- placement of a building on a site
- which direction (north-south-east-west) the building faces
- upon the shape of the building
- upon the placement of windows and opening

slides 130 - 137: know that the selection of window size, shape, and operational type has a big impact on the light quality of an interior environment.

slides 147, 148: know that light can be used to reveal structure in an architectural interior, and that doing so makes a strong connection between the interior as a functional space and the building as physical construction.

slides 149 - 169: know that Steven Holl is a famous current American architect who bases much of his design work on the way light plays in spaces.
Be able to recognize these buildings and drawings as Steven Holl's

14. Sustainability and Environment

slides 2 - 7: know that these 10 listed environmental characteristics are each enormous problems that have a big impact on the condition of the world around us.

slide 8: know that the current population of the earth is approximately 7 billion, and that it was about 3.5 billion back in the late 1960's.

slide 11: know this definition of 'sustainable design'

slides 12, 13: know these points that describe 'sustainable architecture'

slides 14, 15: know these four principles of sustainable design: low impact materials, energy efficiency, quality and durability, and design for reuse and recycling

slide 17: know that the term 'carbon footprint' refers to the total amount of CO2 emissions that result from the uses of energy sources and processes that result from your activities each day.

slide 25: know that William McDonough is a very, very important person in the domain of moving environmental issues to the front of public discussion, and that he has had a very big impact on the way we understand environmental design, because of his successful large scale design projects, such as the Ford River Rouge factory.

slides 28 - 33: know that William McDonough wrote this "Bill of Rights for the Planet" I will not ask you about the specific points, but you should know that it presents essential ideas for creating a sustainable life support system on our planet in which all living creatures could survive and prosper.

slide 30: know that one of the most important, and interesting of William McDonough's ideas is "eliminate the concept of waste" and that this means that everything we use and produce, should be usable at the next stop in its journey on the surface of the earth, much the way animals and plants produce no 'waste' in the sense that everything in the animal and plant world is biodegradable, or edible to some other creature.

slides 34 - 41: know that these are important design projects done by William McDonough's office. The Ford River Rouge project in particular, has been hugely influential and of high impact.

slide 43: know that roughly 40% of total US energy consumption in 2010 was by buildings.

slide 48: know that in one square meter of surface (such as a floor, or wall) direct sunlight produces 1,000 watts of energy; enough to power ten 100 watt light bulbs.

slide 50: know that the big three renewable energy sources are :

- solar energy: captured with active, or passive design strategies
- hydro power: flowing water, such as rivers
- wind power: captured by wind turbines or wind mills

slide 61: know that the two broad, fundamental, ways of using solar energy in architectural environments are :

- Passive solar design
- Active solar design

slide 62: know what Passive, and Active each mean in terms of solar design.

slide 63 - 67: know that photo voltaics are silicon cells that transform sunlight into electricity, and that panels that incorporate photo voltaic cells are known as 'active' solar devices.

slide 74: know that the three principles of passive solar design are Gain, Thermal Mass, and Insulation.

slide 88: know that this tank is a rainwater collection 'cistern.'

slide 93: know that this diagram of the sun's path in winter and summer is used to plan spaces and material applications in a context of passive solar design.

slides 94 - 110: know what Passive Solar design is about, and what the basic rules and requirements for employing it are.

slides 119 - 125: know what Active Solar design is about and how it works.

slides 126, 127: know what Geo Thermal heating and cooling are and how it works.

slide 131: know these five characteristics of sustainable design. Be able to recognize them as characteristics of sustainable design.

slide 132: know these 7 basic actions to achieve sustainable design.

slide 134: know what 'Greenwashing' means.

slides 142 & 146: know that the USGBC and its LEED program is a very influential non-profit organization promoting environmental awareness and action.

slide 147 - 150: know what LEED is and how it works.

slide 155: know that this presidential library building, the William J. Clinton Presidential Library, in Little Rock, Arkansas, is a LEED certified building; the first presidential library to be LEED certified.

15. Architecture and Aesthetics: Conclusions and Overview

slide 2: know that the Roman architect Vitruvius proposed Vitruvius that a good building should demonstrate three principles:

- Firmitas
- Utilitas
- Venustas

which translate roughly as –

Durability – it should stand up robustly and remain in good condition.
Utility – it should be useful and function well for the people using it
Beauty – it should delight people and raise their spirits.

slide 3: know that the drawing "The Vitruvian Man" by Leonardo da Vinci is based on the ideas of Vitruvius that ideal human proportions related to geometry.

slide 8: know that this very famous cathedral is Lincoln Cathedral, in England.

slide 16: know that this very famous villa designed by Andrea Palladio, is an intensely intellectual, formal, and rational work of design. Nothing in this building is the result of 'chance.'

slide 23: know that Louis Sullivan, American architect, designed the first sky scrapers, in the late 1800's, and is famous for promoting the idea of "Form follows function".

slide 27: know that Louis Sullivan is considered the 'Father of the Skyscraper.'

slides 30 - 32: know that mere construction is not sufficient for something to be considered 'architecture' because there must also be a creative interpretation of the setting and the form and construction of the building.

slide 37: know that Modern architecture, of the 1910 – 1915, was an avant-garde movement with moral, philosophical, and aesthetic underpinnings. It had a 'radical' character.

slide 40: know that these are the basic attributes of Modern architecture.

slide 47: know that these points describe the shift away from Modernism.

slide 49: know that these points describe Deconstructivism.

slides 52 - 56: know that this building designed by Frank Gehry is a good example of the ideas and visual form of a Deconstructivist building.

slide 57: know what Critical Regionalism is.

slide 58 - 62: know that this building is Thorn Crown Chapel, designed by American architect Fay Jones.

slide 66: know these attributes of Critical Regionalism.

slide 72: know what Blob-itecture is.

slide 73: be able to identify this building as a good example of Blob-itecture.

slides 79, 80: know that these ideas are central to the contemporary requirement that architecture and interiors address issues of sustainability.

slide 83: be able to identify this green exterior wall surface an an example of a 'living wall', and that it is made up of vegetation held in place on the vertical wall surface.

slide 86: know that the subject of aesthetics in the realm of architecture and interiors is complex, time and culture specific, multi-dimensional and not singular.

Exam 7 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.