

ART280 NCH WORLD ARCHITECTURE

History of World Architecture is an exploration of the history, theory, and design of iconic spaces. Architectural theory and design skills are introduced. The course is organized into Residential architectures; Sacred & Contemplative architectures; Urban Design; and Recreational, Civic, Transportation, and Commercial architectures.

4.00 credits. (Non-Western Cultural Heritage Core course)

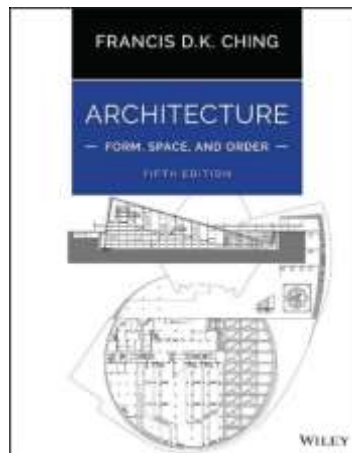
TIMES:

PROFESSOR

Joseph T. Wunderlich PhD,
Associate Professor of Engineering and Computer Science
Architectural Studies Coordinator
Cell: 717-368-9715, Email: wunderjt@etown.edu
[Website](#), [YouTube Channel](#)
[Architecture Portfolio](#), [Architecture Website](#), [CV](#)

TEXTBOOKS

- [1] *Buildings Across Time, an Introduction to World Architecture; ISE (International Student Edition)*, Michael **Fazio**, Marian Moffett, Lawrence Wodehouse, 6th Edition, April 20, 2022, McGraw Hill. (ISBN 1265219494)
- [2] *Architecture: Form, Space, and Order*, D.K. **Ching**, 5th Edition, 2023, WILEY. (ISBN: 9781119853374)



LEARNING OUTCOMES for Non-Western Cultural Heritage (“NCH”) Academic Unit (“AU”)

Students will be able to:

- Explain the importance of a specific aspect of Non-Western cultural heritage
- Describe the historical context of the subject under study
- Give an illustration of the complexity of the past and its relationship to the contemporary world
- Give an example of the way that knowledge can be subject to a variety of interpretations
- Analyze primary and/or secondary sources

GRADES

- | | |
|-----|--|
| 15% | Small assignments |
| 25% | Case-Study / Design-Project #1, Residential |
| 25% | Case-Study / Design-Project #2, Sacred and Contemplative |
| 25% | Case-Study / Design-Project #3, Urban Design, Recreation, Civic, Transportation, Commercial |
| 10% | Comprehensive Final Exam |

Course Grade:

(60-62)=D-, (63-67)=D, (68-69)=D+, (70-72)=C-, (73-77)=C, (78-79)=C+, (80-82)=B-, (83-87)=B, (88-89)=B+, (90-92)=A-, (93-100)=A
with any fractional part rounded to the nearest integer

COURSE OUTLINE

Readings in Purple Italics

RESIDENTIAL

ARCHITECTURE THEORY (*Ching Text CH3*) FORM & SPACE [YouTube](#) mp4 PPTX-w/audio pdf

EARLY HISTORY

NEOLITHIC (10,000 to 2000 BC): Mesopotamia/Iraq; CatalHuyuk Anatolia/Turkey; Banpo China; Skara Brae, United Kingdom; India Toda House; African Round Hut; Central Asian Yurt; Egypt. - 2000 BC to 1800'sAD: Beijing Courtyard House; Ancient Greece; Roman Atrium House; Native American Chaco Canyon Cliffhouses, New Mexico; Medieval Windsor Castle, England; Medieval Hohenzollern Castle, Germany; Fujian Toulou China; Medieval Half-Timber Houses; Native American Iroquois Longhouse; Highrise Houses, Yemen; Japanese Minka House; Palladian Villa Rotunda, Italy; Katsura Imperial Villa, Japan; Colonial American Spanish, English, German, and Dutch; Monticello, Virginia; Colonial American Swedish Log Cabin. [PPTX pdf](#)

MODERN

Fazio Text Ch.14,15,16. Victor Horta's Art Nouveau Houses; Gaudi's Casa Vicen, Casa Batlló, Casa Mila, Barcelona; Rietveld's Schroder House; Le Corbusie's r, Villa Savoye; Neutra's Lovell Health house, CA; Mies van der Rohe's Farnsworth House; Philip Johnson's Glass House, CT.; Gehry Residence, Santa Monica, Norton House, Venice, CA. – Post-Modern: Venturi House. [PPTX pdf](#)

STYLES COMMON IN AMERICA

Saltbox, Georgian, Federal, Greek Revival, Gothic Revival, Italianate, Queen Anne, Shingle, Richardsonian Romanesque, Folk Victorian, Colonial Revival, Cape Cod, Neoclassical, Tudor Revival, French Revival, Spanish Colonial Revival, Pueblo Revival, Craftsman, Modern, International, Post-Modern, Ranch. [PPTX pdf](#)

FRANK LLOYD WRIGHT

- *FLW, AGE 20 TO 33 (1887-1900)* [YouTube](#) PPTX-w/audio mp4 pdf - Louis Sullivan, Starting a firm, Begins organic architecture, Chicago
- *FLW, AGE 34 TO 41 (1901-08)* [YouTube](#) PPTX-w/audio mp4 pdf - Arts & Crafts, Prairie Style, Japan visit #1
- *Wunderlich Vlog of 31 FLW Chicago designs* [YouTube](#)
- Dr. W. upcoming book on Organic Architecture of Frank Lloyd Wright [YouTube](#) mp4 PPTX-w/audio pdf

MANSION-INSPIRED MODEST DESIGNS [YouTube](#) PPTX-w/audio mp4 pdf

SACRED & CONTEMPLATIVE

PYRAMIDS

Fazio Text Ch.1 Mesopotamian ziggurats; Egyptian pyramids: Djoser, Meidum, Bent, Red/North, Khufu, Khafre, Menkaure; Iran: Choga Zanbi; China: Li/Qin Shi Huang Mausoleum; Rome: Cestius. Ch.10 Mexico and Central America- Teotihuacan pyramid complex, Mexico; Mayan pyramids, Tikal, Guatemala; Cambodia: Prasat Thom. [PPTX pdf](#)

PHOENICIAN, GREEK, ROMAN

Phoenician: Temple of the Obelisks in Lebanon, Solomon's Temple in Jerusalem; *Fazio Text Ch.2: Greek and Roman "Orders"; mathematical basis of Greek aesthetics, Greek Archaic Period - Temple of Apollo Epicurius in Bassai, Greek Classical Period - Parthenon on the Acropolis in Athens;; Ch.5 The Roman World- Vitruvius and the first treatise on Architecture; Pantheon in Rome (first domed building).* [PPTX pdf](#)

EASTERN RELIGIONS: HINDUISM, BUDDHISM, SHINTOISM, TAOISM

Fazio Text Ch.3,4: Great Stupa Sanchi, India; Zhongyue Temple, China; Shinto shrines- Ise shrine Uji-Yamada, Japan; Cave Temple Karli, India; Lingaraja Temple, India; Horyuji pagoda and temple complex, Nara, Japan; Khajuraho temples, Tanjore India; Angkor Wat, Cambodia; Dazu Duobao pagoda, China; Fogong monastery pagoda, China; Gardens and shrines, Japan. [PPTX pdf](#)

JAPANESE CULTURE, ARCHITECTURE, and URBAN DESIGN [YouTube](#) PPTX-w/audio mp4 pdf

ABRAHAMIC RELIGIONS: JUDAISM, CHRISTIANITY, ISLAM

SYNAGOGUES: Diaspora synagogues; Dura Europa synagogue; Kfar Bar'am synagogue; Great Synagogue of Florence; Frank Lloyd Wright's Beth Shalom synagogue, Elkins Park, PA. MOSQUES: *Fazio Text Ch.7 Dome of the Rock, Jerusalem; Ka'ba, Mecca, Saudi Arabia; Prophet's House/Mosque, Medina, Saudi Arabia; Great Mosque, Samarra, Iraq; Great Mosque, Cordoba, Spain; Suleyman Magnificent, Istanbul, Turkey; Taj Mahal, Agra, India; Ch.10 Great Mosque of Djenné, Mali, Africa. CHURCHES: Ch.6 Early Christian and Byzantine Churches: Basilica of Trier, Germany; St. Paul's Outside the Walls, Rome; Santa Costanza, Rome; Hagia Sophia, Istanbul, Turkey; San Marco, Venice, Italy; Ch. 8 Romanesque- Pisa Cathedral; Ch.9 Gothic- Cathedral of Saint Dennis, France; Notre Dame Cathedral, France; Gothic Design; Ch.11 Renaissance – The Duomo, Florence, Italy; St. Peter's Basilica, Rome. St. Basil's Cathedral, Moscow, Russia. Protestant Colonial American meetinghouses. **Modernist:** Ch.14 Le Corbusier's Notre Dame- du Haut, Ronchamp, France; Philip Johnson's Crystal Cathedral, Orange County, CA; Gaudi's Sagrada Familia, Barcelona, Spain; Richard Meier's Jubilee Church, Rome, Italy.* [PPTX pdf](#)

- Roman Architecture & Engineering [YouTube](#) PPTX-w/audio pdf mp4
- Frank Lloyd Wright AGE 79 TO 91 (1946-58+) [YouTube](#) PPTX-w/audio mp4 pdf – **Sacred Spaces**, Civic Spaces, Urban Design

URBAN DESIGN, RECREATION, CIVIC, TRANSPORTATION, COMMERCIAL

ARCHITECTURE THEORY (*Ching Text CH4*) ORGANIZATION [YouTube](#) mp4 PPTX-w/audio pdf

URBAN DESIGN

6000BC Mesopotamian Uruk, Iraq; 3000BC Egyptian Thebes and Karnak; 1550-300'sBC Phoenician Carthage, Tunisia; *Fazio Text Ch.2,5,9,12,13: 800's-400'sBC Greeks – 446BC Hippodam's grid plan for Miletus, Turkey; 400'sBC Acropolis and Agora, Athens, Greece. 700'sBC-476AD Romans -- Forum in Rome; 100AD Roman castra grid plan, Timgad, Algeria. 800'sAD Piazza(square) San Marco, Venice; 1349AD Piazza(square) del Campo, Siena, Italy. 1400'sAD Piazza(square) Navona, Rome; 1471AD Piazza(square) del Campidoglio, Rome; 1612AD Place(square) des Vosges, Paris. 1667AD Piazza(square) San Pietro, Vatican City, Rome; 1682AD William Penn's Green Plan of Philadelphia; 1775AD Royal Salt Works, Chaux, France; 1791AD L'Enfant 's Plan of city of Washington (DC); 1807AD New York City/Manhattan Commissioners' Plan; 1817AD Thomas Jefferson's University of Virginia Academical Village; 1956AD Brasilia, Brazil; 1889AD Exposition Universelle (including Eiffel Tower), Paris, France; 1893AD World's Columbian Exposition, Chicago, Illinois; 1901AD Pan-American Exposition, Buffalo, NY; 1935AD Frank Lloyd Wright's Broad Acre City; 1967AD Expo '67 Montreal, Quebec. 1999-2011AD Elizabethtown College master plan.* [PPTX pdf](#)

ITALIAN ARCHITECTURE AND URBAN DESIGN [Six Trips](#)

ITALY, BELGIUM, ENGLAND URBAN DESIGN [PPTX pdf](#)

JAPANESE CULTURE, ARCHITECTURE, and URBAN DESIGN [YouTube](#) PPTX-w/audio mp4 pdf ← Rewatch for **PATHS, EDGES, NODES, LANDMARKS, DISTRICTS**

RECREATION

STADIUMS: *Fazio Text Ch.5: First Century Rebuild of Roman Circus Maximus, Rome; First Century Roman Hippodrome, Aphrodisias, Turkey; 80AD Roman Colosseum, Rome; 1936AD Berliner Olympiastadion, Germany; 1972AD Olympic Stadium, Munich; 1986AD Amsterdam Arena, Holland; Rungnado; 1989AD Estádio Municipal de Aveiro Stadium, Portugal; 1998AD Stadium Australia (ANZ), Sydney; 1999AD Olympic Sports Complex, Tokyo, Japan; 2001AD May Day Stadium, North Korea; 2008AD Beijing National Stadium; 2003AD Sapporo Dome, Japan; 2008AD CenturyLink Field Seattle, Washington; PERFORMANCE SPACES: 300'sBC Greek theatre at Epidaurus; 1585AD Teatro Olimpico, Vicenza; 1599AD Globe Theatre, London; 1857AD Academy of Music, Philadelphia; 1875AD Paris Opera House; 1959AD Sydney Opera House; 2000AD Experience Music Project, Seattle Center; 2003AD Disney Hall, Los Angeles. [PPTX pdf](#)*

EXHIBITION SPACES

1700'sAD Vatican Museum, Rome; 1753AD British Museum, London; 1870AD Metropolitan Museum, NY; *Fazio Text Ch.14,15,16: 1876AD Pennsylvania Academy of the Fine Arts, Philadelphia; 1898AD Secession Building, Vienna; 1898AD Glass Pavilion, Cologne, Germany; 1937AD National Gallery of Art, Washington, D.C.; 1959AD Guggenheim Museum, NY; 1967AD Montreal Biosphere; 1977AD Pompidou Museum, France; 1995AD Rick & Roll Hall of Fame, Cleveland; 1997AD Tjibaou Cultural Center, New Caledonia; 1997AD Guggenheim Bilbao Museum, Spain; 1997AD Getty Art Museum, Los Angeles; 1997AD Miho Museum, Shingara, Japan; 2000AD Rose Planetarium, NY; 2010AD China Pavilion, Shanghai; 2012AD Michigan State University Broad Art Museum; 2015AD Milwaukee Art Museum New Wing. [PPTX pdf](#)*

ARCHITECTURE THEORY (*Ching Text CH5*) Circulation [YouTube mp4 PPTX-w/audio pdf](#)

TRANSPORTATION ARCHITECTURE

Fazio Text Ch.14: 1852AD King's Cross Station, London; 1962AD Dulles Airport, VA; TWA Terminal, 1962AD JFK Airport, NY; 2000AD Bilbao Airport, Spain; Terminal Four, Madrid Barajas Airport; 2006AD Southern Cross Station, Melbourne; 2006AD Berlin Hauptbahnhof; 2008AD Incheon Airport, Seoul; 2009AD TGV Station, Liège, Belgium; 2010 AD Mestia Airport, Georgia (country); 2011AD West Railway Station, Tianjin, China; 2013AD Marrakech Menara Airport Terminal 1, Morocco; 2017AD Saint Exupery International Airport, Lyon, France; 2019AD Beijing Capital Airport new international terminal; [PPTX pdf](#)

SKYSCRAPERS

Fazio Text Ch.14,15: Home Insurance Building; Monadnock Building, Chicago; Reliance Building, Chicago; Rand McNally Bldg., Chicago; Wainwright Bldg., St. Louis, MI; Carson Pirie Scott Dept. Store, Chicago; Flatiron Bldg., NY; Woolworth, Chrysler, and Empire State Buildings, NY; Sears Tower, Chicago; Ch.16: Mies van der Rohe, Seagram Building, NY; Johnson's AT & T Building, NY; 30 St. Mary Axe (The Gherkin), London; Petronas Towers, Kuala Lumpur, Malaysia; Taipei 101, Taiwan; Burj Khalifa, Dubai; Gehry Spruce St. Tower, NY; CCTV Headquarters, Beijing. [YouTube PPTX-audio mp4 pdf](#)

SHOPPING MALLS

Newport Beach CA Fashion-Island Mall [YouTube PPTX-audio mp4 pdf](#)

CASE-STUDIES / DESIGN-PROJECTS

You will have three major assignments where you have a choice of doing one of the following for each:

- A. **CASE-STUDY RESEARCH PAPER** of an Architectural or Urban Design work. Upload in a single Word Document: to Canvas
 1. Three pages of double-spaced text including name(s), dates, architects or builders, location, building function(s), historical context, **Architecture Theory concepts**, and bibliography in MLA, APA, or Chicago style
 2. Additional page with an image of the building.
- B. **ORIGINAL DESIGN** for a building. Upload in a single Word document to Canvas:
 1. DRAWINGS of all floor plans, and Drawings of all four building Elevations (i.e., side views) OR two perspective drawings with each showing two sides of the building. They can be drawn by hand (neatly with strait lines, and proper perspective when applicable including proper vanishing points and foreshortening), or computer-generated.
 - i. OR, instead of Drawings, you may build a PHYSICAL MODEL out of balsa wood and upload photos of it; If you choose to do this, you will need to purchase your own materials including the proper glue and cutting tools on your own, from the Internet, or from a hobby shop; use very thin sheets of wood.
 2. Paragraph about building function, materials, inspiration, and the intended culture, inhabitants, and vernacular.

ARCHITECTURAL DESIGN SKILLS

- Mandatory (6% of your course grade) Architectural Free-Hand **PERSPECTIVE DRAWING** Introduction [TUTORIAL](#)
- Optional Architectural COMPUTER RENDERING
 - [Revit vs SketchUp software](#),
 - REVIT TUTORIALS: [Intro](#), [Building Levels & Views](#), [Walls](#), [Library \(A, B\)](#), [Sweets Catalog](#)
 - [Revit Model of Past & Present Etown Campus, into Oculus Rift Virtual Reality](#)
 - Minecraft software
 - [CASE-STUDIES](#)
 - [TUTORIAL](#)
 - Unity Game Design Software
 - TUTORIALS: [1 pdf PPTX](#), [2 pdf PPTX](#), [3 pdf PPTX](#), [4 pdf PPTX](#), [5 pdf PPTX](#) [6 pdf PPTX](#)
- Optional PHYSICAL MODEL Building
 - TUTORIALS: : ["Tips & Tricks"](#) ["Material Selection"](#) ["Tools"](#) ["Model Bases & Scale"](#)

ARTIFICIAL INTELLIGENCE USE

"In this course, students shall give credit to AI tools whenever used, even if only to generate ideas rather than usable text or illustrations. When using AI tools on assignments, Add an appendix showing (a) the entire exchange, highlighting the most relevant sections; (b) a description of precisely which AI tools were used (e.g. ChatGPT private subscription version or DALL-E free version), (c) an explanation of how the AI tools were used (e.g. to generate ideas, turns of phrase, elements of text, long stretches of text, lines of argument, pieces of evidence, maps of the conceptual territory, illustrations of key concepts, etc.); (d) an account of why AI tools were used (e.g. to save time, to surmount writer's block, to stimulate thinking, to handle mounting stress, to clarify prose, to translate text, to experiment for fun, etc.). Students shall not use AI tools during in-class examinations, or assignments unless explicitly permitted and instructed. Overall, AI tools should be used wisely and reflectively with an aim to deepen understanding of subject matter." Source: <https://ctl.utexas.edu/chatgpt-and-generative-ai-tools-sample-syllabus-policy-statements>

RELIGIOUS OBSERVANCES

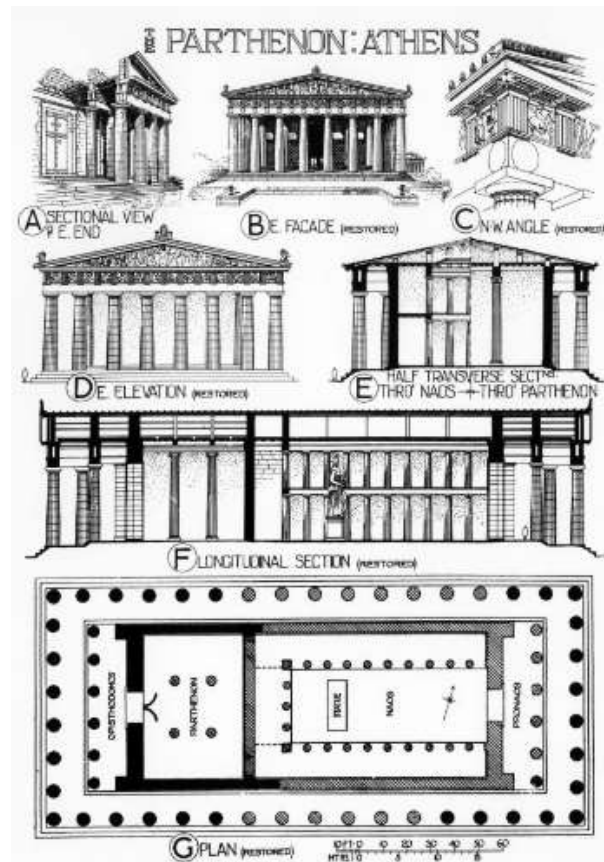
The College is eager to facilitate individual religious beliefs and practices whenever possible while retaining course student learning outcomes. It is your responsibility to meet with the class instructor in advance to request arrangements related to your religious observances that may conflict with this class, and to make appropriate plans to make up any missed work.

DISABILITY SERVICES

Elizabethtown College welcomes otherwise qualified students with disabilities and is committed to providing access for all students to courses, programs, services, and activities. If you have a documented disability such as a learning disability or chronic illness or a new circumstance such as a concussion and would like to request accommodations, please contact the Director of Disability Services by phone (717-361-1227) or e-mail (daviesl@etown.edu). The Office of Disability Services can provide resources to you and facilitate communication with faculty about reasonable accommodations. After meeting with the Office of Disability Services, please set up an appointment to meet with me, the instructor, to discuss the accommodations as they pertain to my class.

MENTAL HEALTH & COUNSELING RESOURCES

Counseling Services provides a broad range of counseling and mental health support services that facilitate our students' personal, social, and academic development. Our licensed mental health professionals provide short-term individual counseling, group counseling, crisis intervention, and consultation to currently enrolled students for no additional charge. Counseling services are provided in a confidential and diversity-affirming environment to help students address a variety of mental health, situational, and developmental concerns. Our office is located in the Baugher Student Center, Suite 216. Appointments can be made in person or by calling 717-361-1405. Urgent walk-in services are also available. To access our after-hours crisis services, please call the 24/7 Campus Security number of 717-361-1111. For more information, please visit www.etown.edu/offices/counseling



https://www.ribapix.com/parthenon-athens-plans-sections-and-elevations_riba100816#

ONE-POINT PERSPECTIVE

- Lines into distance converge at a **VANISHING POINT** ("F" in the image below) on the **HORIZON LINE**
 - Moving this point from side to side along the horizon line changes the viewer's lateral position within the drawing
- Horizontal and Vertical lines are parallel to the edges of the paper
 - **FORESHORTENING** means things closer to you seem bigger, so sequences of horizontal or vertical lines get further apart as they get closer
 - Use **diagonal lines** to help you with the spacing →

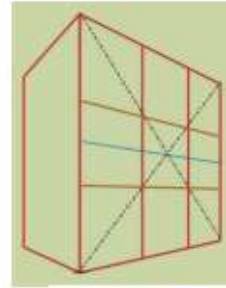
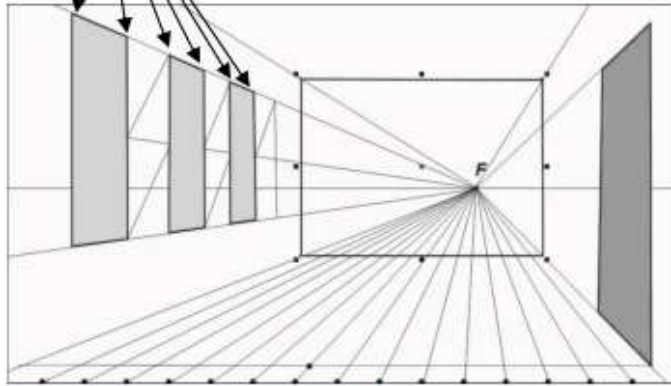


Image from: <http://aplanpointmaker.com/perspective/architecture>

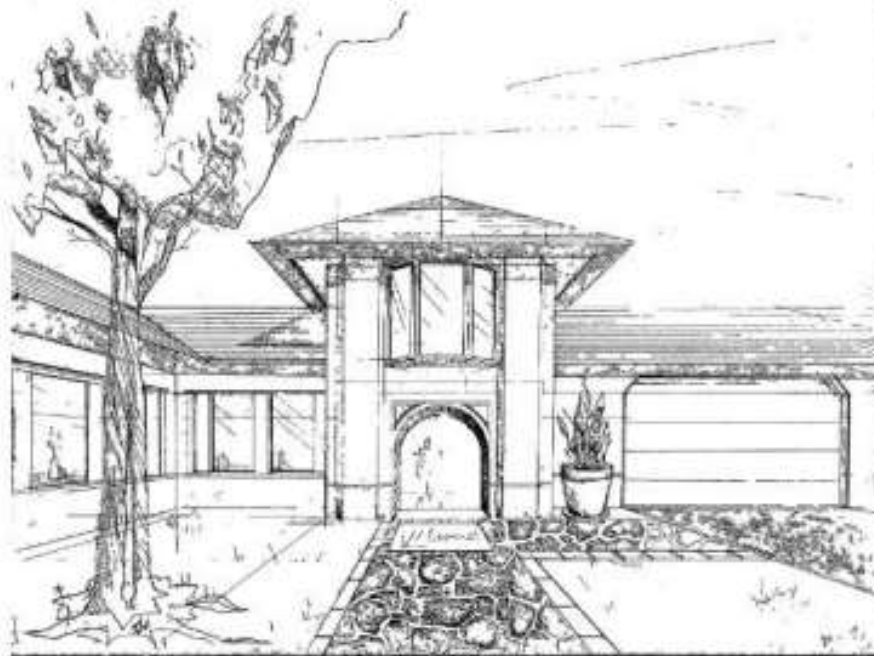
HORIZON LINE

This line will be higher in the drawing if the viewer's eyes are high above the ground

Watch **VIDEO** by others:

<https://www.youtube.com/watch?v=SgP9QsOBoqk>

<https://users.etown.edu/w/wunderjt/Architecture%20Lectures/Perspective%20Drawing%201.1.pdf>



Midwestern Villa 9x11"

ONE-POINT EXTERIOR PERSPECTIVES

by JJ Wunderlich IV

[2019 Portfolio](#)

TWO-POINT PERSPECTIVE

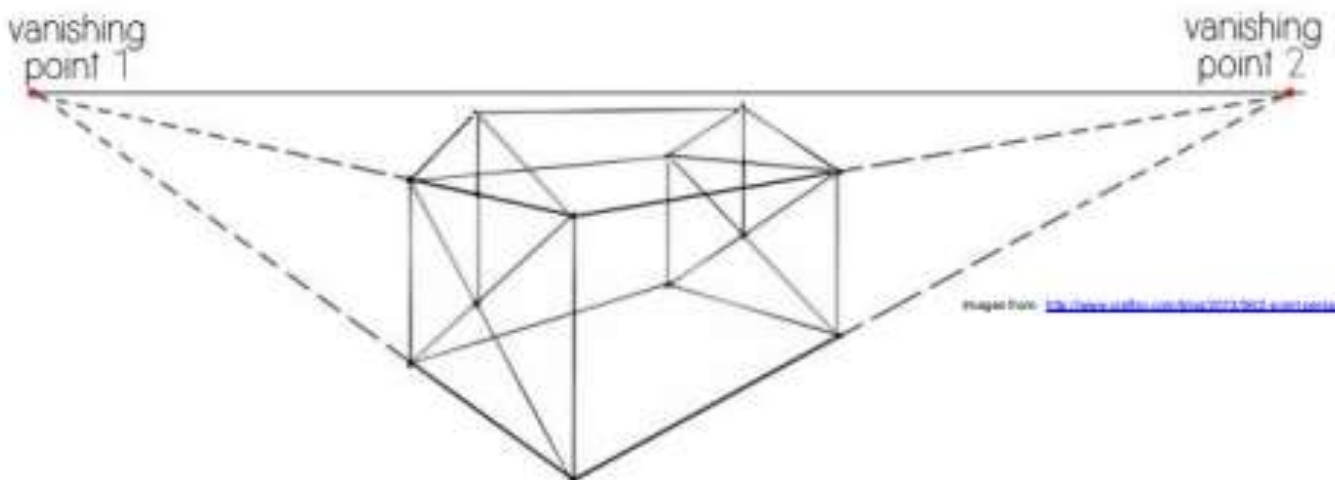
- Vertical lines are parallel to the edges of the paper
- Horizontal lines converge to two vanishing points on horizon line

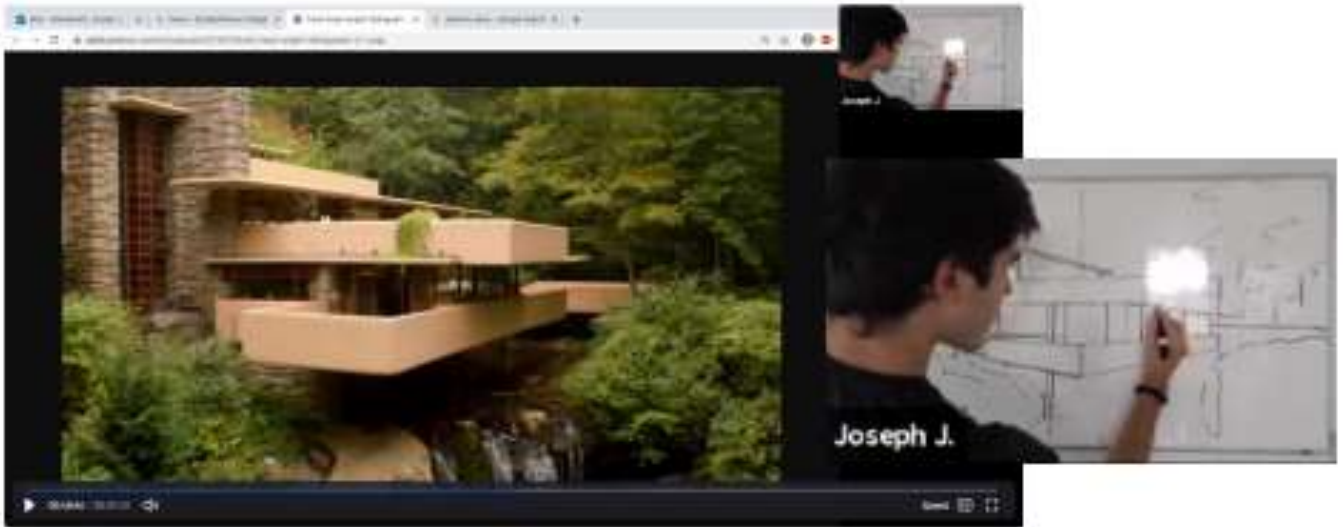
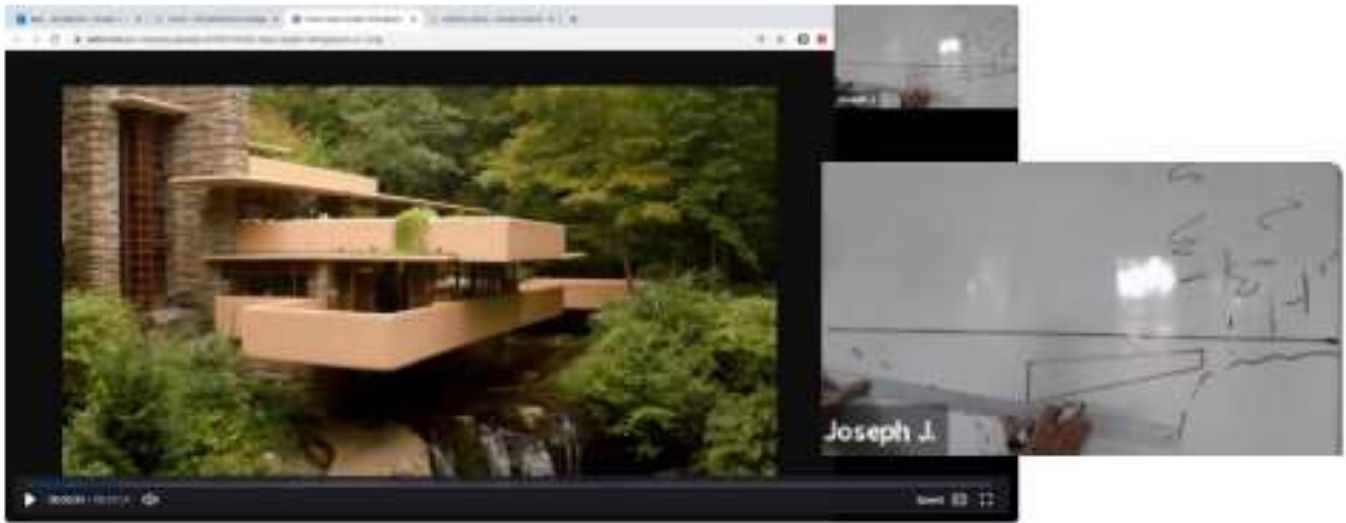
FORESHORTENING means things closer to you seem bigger, so sequences of horizontal or vertical lines get further apart as they get closer

- Use **diagonal lines** to help with things like finding the centers of windows, or the location of roof peaks on gables



Image from <http://www.illustrationbusiness.com/Doc/201>



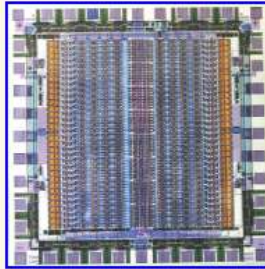


TWO-POINT PERSPECTIVE
by JJ Wunderlich – Campus Dormitory Building (2020)
Tutoring 20 Freshman FYS100 Conceptual Architecture students
Watch JJW VIDEO #4: (MP4, YouTube)

CompEng & Robotics
Architecture
Personal

Syllabi
Contact
CV
YouTube Channel
HOME

00044629
since 1/1/00



Computer Engineering & Robotics



Architecture



Personal

NEWS:

- 2021 Student Evaluations & Comments
- 2021 "Intro to Machine Intelligence" (part of ongoing BOOK draft) now into courses other than these designated for AI: 1, 2, 3, 4, 5
- 2021 Continue BOOK-draft on Frank Lloyd Wright... See FLW lecture series
- 2021 Best Computer Engineering Projects, by Jonathan Freaney: CPU-Design GPU-Design, and by Mario Caniglia: Automated Fish-Feeder
- 2021 7th year-end **Architecture Crit**
- 2021 Beginnings of **WunderTown Railroad**, a Digital & Embedded-Systems initiative
- 2021 Annual "Skyscrapers" and "Frank Lloyd Wright research summary" invited talks
- 2021 continued beginnings of our 9th generation robot: E-bot9

- 2020 11-minute Christmas Concert for students (by *JWIV*); 50-minute version for another group
- 2020 **COVID Mitigation Lectures** into "EGR353 Green Architectural Engineering", "FYS100 Organic Design & Frank Lloyd Wright", and "ART371 Architectural Materials&Methods" (See:1,2,3,4)
- 2020 Graduates: 6 in Architecture and 7 in Computer Engineering (special Virtual-Commencement recognition)
- 2020 Sample first online lectures: "Lab&Studio" "Neural Net Chips" "Humanity?" "Shell A&E" "Cache Design" "Interiors" "Frank Lloyd Wright's Formative years" "A&E Lighting"
- 2020 Updated A&E PORTFOLIO to include Hi-Tech
- 2020 First Etown **Virtual Reality** (by *JWIV*) as part of 6th year-end **Architecture Crit**
- 2020 \$XX,000 of Phoenix Contact electronics (and Germany webinars)
- 2020 Visited 11 Arizona Frank Lloyd Wright sites (incorporated into 2018 FLW lecture series, and upcoming FLW BOOK)



STUDENT DESIGNS



STUDIO



VIRTUAL REALITY



2020 Graduates



2019 Architecture Theory
LECTURE SERIES
pdf PPTX
YouTube



2018 Frank Lloyd Wright
LECTURE SERIES
pdf PPTX-w/audio YouTube
Upcoming Book Excerpt



2019 Frank Lloyd Wright
31 sites visited
in Chicago-Land
YouTube



2013 Japanese Urban
Design and Architecture
pdf PPTX-w/audio
MP4 YouTube



Skeleton Beneath
The Skin
pdf PPTX-w/audio
MP4 YouTube



Lighting Design
pdf PPTX-w/audio
MP4 YouTube



Skyscrapers
pdf PPTX
MP4 YouTube



2006-2015 Intro
to Architecture Theory
pdf, PPT



JT Wunderlich
Italy Travels
(six trips)



JT Wunderlich Portfolio
pdf, PPTX-w/audio
MP4, YouTube



Field Trip to Frank
Lloyd Wright's Falling
Water and Kentuck Knob



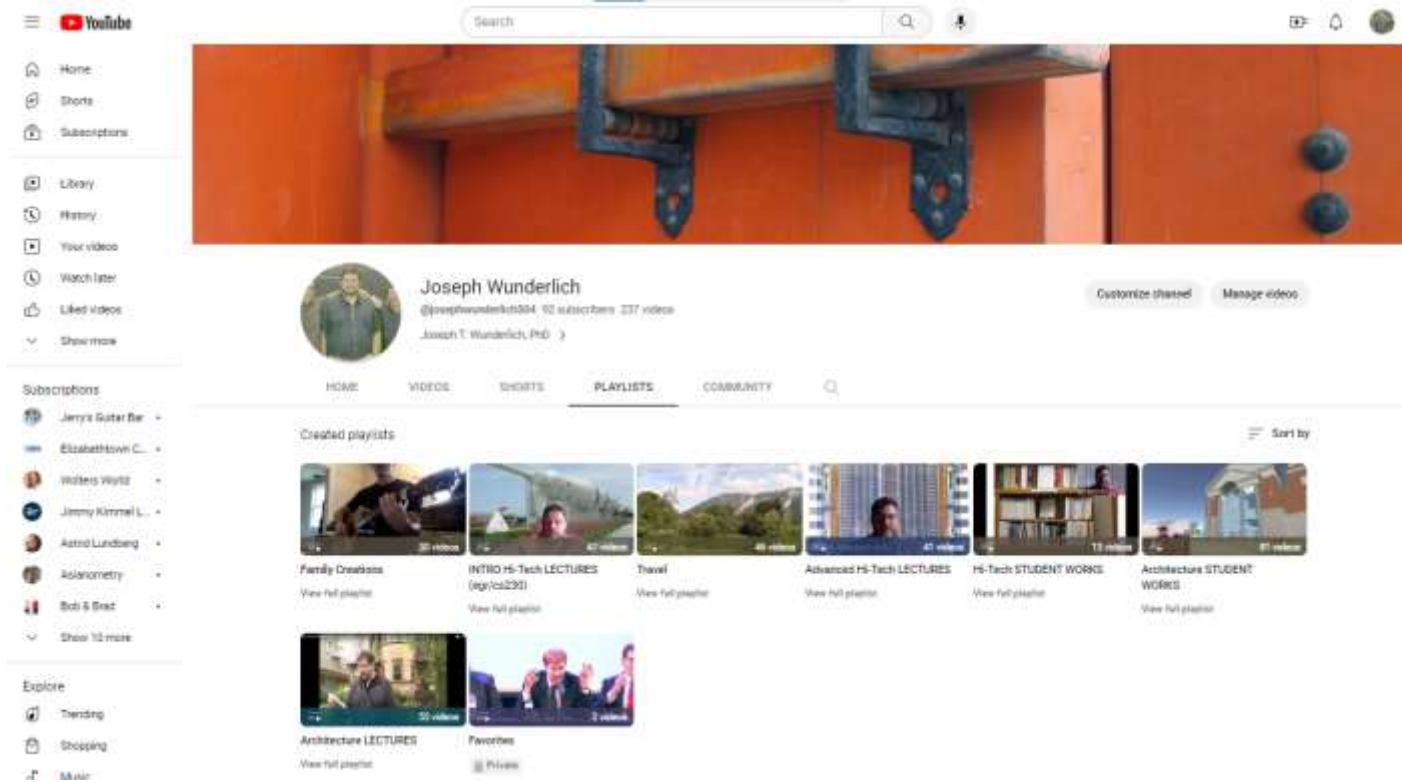
Mansions & Inspirations
pdf, PPTX-w/audio
MP4, YouTube



Roman A&E
pdf, PPTX-w/audio
MP4, YouTube



Present
Pennsylvania Architecture



NEWER COURSES:

1. EGR/ART 495(499A) **"Architectural Design Studio I"** *Etown* ([RESULTS](#))
2. EGR/ART 496(499B) **"Architectural Design Studio II"** *Etown* **SLE Signature Learning Experience** ([RESULTS](#))
3. A EGR200 **"Engineering Research" in Architecture** (2 credits) *Etown* ([RESULTS](#))
4. B EGR280 **"Engineering Research" in Architecture** (4 credits) *Etown* ([RESULTS](#))
5. EGR/CS434 **"Robotics & Machine Intelligence"** *Etown* (FINAL EXAM [2017 2019](#))
6. EGRxxx PhD Course **"Advanced Robotics with Applications to Space Exploration"** U. Trento, Italy
7. EGR/CS485 **"Independent Study in Robotics and Artificial Intelligence"** *Etown*
8. EGR/CS 430/433 **"Parallel Processing /Advanced Computer Engineering LECTURE & LAB"** *Etown* (FINAL EXAM [2022](#))
9. EGR401(491),402(492),CS490 **"Engineering (and Computer Science) Senior Project"** *Etown*
10. EGR280 **"Engineering Research" (General)** (0 to 4 credits) *Etown*
11. HONxxx **"Honors Thesis"** *Etown*
12. EGR400 **"Engineering Portfolio" (Old Version)** *Etown*
13. ART370 **"Architectural Design Theory"** *Etown*
14. ART371 **"Architectural Materials & Methods"** *Etown*
15. ART/SOC371 **"Frank Lloyd Wright"** *Etown*
16. EGR343/353 **"Green Architectural Engineering"** *Etown* (Fall 2014 SFW Center & Africa Health Clinics): ([RESULTS](#))
17. EGR/CS330 **"Digital Design and Embedded Systems LECTURE & LAB"** *Etown* BY INTENSELY COMBINING:
18. EGR/CS333 **"Digital Design II, Assembly Language, and Interfacing LECTURE & LAB"** *Etown* (FINAL EXAM [2017 2019](#))
19. EGR/CS332 **"Digital Design I"** *Etown*
20. ART280 **"World Architecture"** *Etown*
21. EGR/CS230 **"Computer Architecture and Hi-Tech Fundamentals"** *Etown* (FINAL EXAM [2017 2019 2022-PDF,MP4](#))
22. CS170 **"Game Design and Virtual Reality"** *Etown*
23. FYS100 **"Organic Architecture and Frank Lloyd Wright"** *Etown* (Conceptual Architecture)



OLDER COURSES:

24. EGR494 **"Computer Engineering Senior Project"** *Etown*
25. EGR/CS434 **"Artificial Intelligence and Robotics"** *Etown* (FINAL EXAM [2009](#))
26. EGR396 **"Spring Seminar"** *Etown*
27. CS375 **"Artificial Intelligence"** *Etown*
28. CS344 **"Simulation"** (Modeling Physical Systems) *Etown*
29. CS120 **"Microcomputer Applications"** *Etown*
30. CS110 **"The Internet and the World Wide Web"** *Etown*
31. FYS100 **"Conceptual Architecture; from Habitats to Humanoids"** *Etown*
32. FYS100 **"Scientific Modeling for Sport"** *Etown*
33. FYS100 **"The Limits of Machine Intelligence"** *Etown*
34. EET497 **"Senior Project Design II"** *Purdue*
35. EET496 **"Senior Project Design I"** *Purdue*
36. EET480 **"Professional Engineering Issues"** *Purdue*
37. EET231 **"Electrical Power and Controls"(and Motors)** *Purdue*
38. EET205 **"Microprocessors and Microcontrollers"** *Purdue*
39. EET159 **"Digital Design I"** *Purdue*
40. EET107 **"Analog Circuits I"** *Purdue*
41. CPEG202 **"Digital Design"** U. Delaware TA and Guest Lecturer
42. ASTR116 **"Astronomy Laboratory and Planetarium Lectures"** *San Francisco State*