

# PROJECT 01

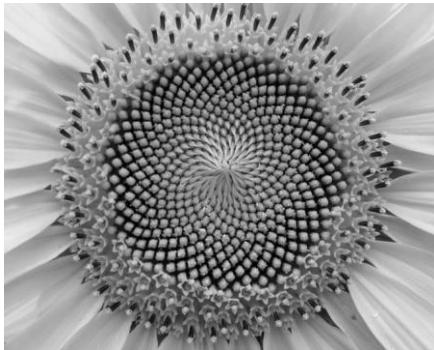
## ARCHETYPAL GEOMETRY

ARC 1010 | Classical Architecture Workshop | Prof. Brandon Ro, AIA, NCARB

### DESIGN BRIEF

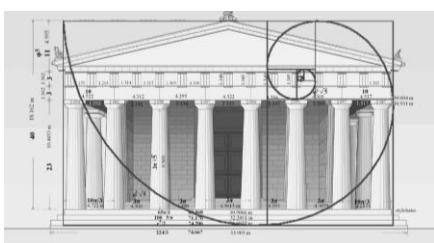
See course website via Canvas for additional info

#### TOPIC



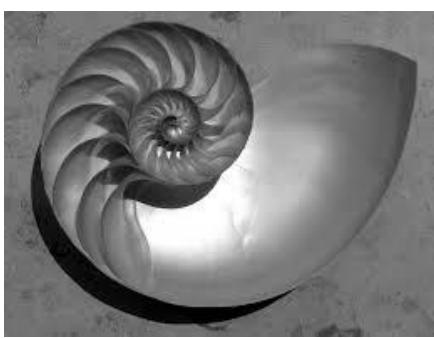
“Beauty is the sign of another and higher order... Beholding beauty with the eye of the mind, you will be able to nourish true virtue, become the friend of God, and become immortal if man may be.”

—Plato (428-347 BC)



“[Patterns] can be guides to a deep cosmic canon of design...Nature itself rests on an internal foundation of archetypal principles symbolized by numbers, shapes, and their arithmetic and geometric relationships...The ten numbers are a complete archetypal sourcebook. They are the original ten patents for designs found all through the universe...from the smallest subatomic particles to largest galactic clusters, crystals, plants, fruits and vegetables, weather patterns, and animal and human bodies.”

—Michael S. Schneider, *A Beginner's Guide to Constructing the Universe* (New York: HarperCollins, 1994), xx

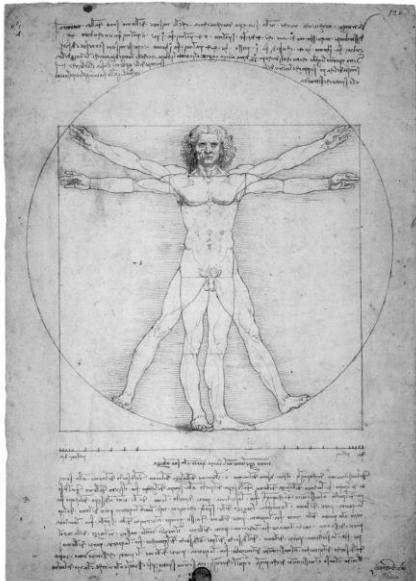


“I shall define beauty to be a harmony of all the parts, in whatsoever subject it appears, fitted together with such proportion and connection, that nothing could be added, diminished or altered, but for the worse.”

—Leon Battista Alberti, *The Ten Books of Architecture: The 1755 Leoni Edition* (New York: Dover, 1986), bk VI, ch II, p.113

“Reality is a function of the imitation of a celestial archetype.”

—Mircea Eliade, *The Sacred and the Profane; the Nature of Religion*. New York: Harcourt, 1987), 5



“The true work of art is but a shadow of the divine perfection.”

**-Michelangelo**

“Philosophy is written in this grand book – I mean the universe – which stands continually open to our gaze, but it cannot be understood unless one first learns to comprehend the language and interpret the characters in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word of it; without these, one is wandering about in a dark labyrinth.”

**-Galileo**

“Images, archetypes and metaphors structure our perceptions, thoughts and feelings, and they are capable of communicating messages of deep time as well as mediating epic narratives or human life and destiny...The aspiration to fuse the cosmic and the human, divine and mortal, spiritual and material, combined with the use of systems of proportion and measure deriving simultaneously from the cosmic order and human figure, gave architectural geometries their meaning and deep sense of spiritual life.”

**-Juhani Pallasmaa, *The Embodied Image: Imagination and Imagery in Architecture* (Chichester, United Kingdom: John Wiley & Sons, 2011), 23**



“More than ever before, the ethical and humane task of architecture and all art is to defend the authenticity and autonomy of human experience, and to reveal the existence of the transcendental realm, the domain of the sacred.”

**-Juhani Pallasmaa, "Existential Sacredness — Light, Silence and Spirituality in Architecture and Art," in *Transcending Architecture* (Washington, DC: Catholic University of America Press, 2014), 32**

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## OBJECTIVE

Classical architecture is a pattern language. Students begin to explore this language by learning from different types of ordering systems. This first project is aimed at introducing students to the “quadrivium” principles that inform classical architecture which are found in the order, proportion, archetypal geometry, and patterns found in nature and the cosmos.

## ASSESSMENT

The weight of the project and sub-assignments will be broken down as follows:

<b>PROJECT 01: Archetypal Geometry</b>	<b>10%</b>
Part A – Geometry sketches #1-4	10 pts
Part B – Geometry sketches #5-8	10 pts
Part C – Geometry sketches #9-12	10 pts
Part D – Archetypal Geometry Final Drawing	70 pts

## COURSE SCHEDULE

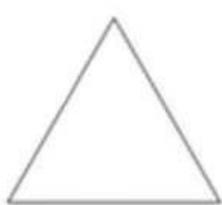
See a detailed week-by week schedule in the syllabus.

## RELATED READING / VIDEOS

\*=available in library

- Bass, Steve. *Beauty, Memory, Unity: A Theory of Proportion in Architecture and Design*. New York: Lindisfarne Books, 2019.
- Martineau, John, ed. *Quadrivium: The Four Classical Liberal Arts of Number, Geometry, Music, & Cosmology*. New York: Bloomsbury USA, 2010.
- Schneider, Michael S. *A Beginner's Guide to Constructing the Universe: The Mathematical Archetypes of Nature, Art, and Science*. New York: HarperCollins, 1994.\*
- Lisa DeLong, “Geometry Hidden in Plain Sight” <https://youtu.be/ePbgGkhLBho>
- Lisa DeLong, “The Nature of Shape and the Roots of Proportion” <https://youtu.be/IFE2H0lZSqI>
- Joseph Brickey, “From One to Oneness: The Compass, The Cubit and Archetypal Anatomy” [https://youtu.be/\\_xZc755qieU](https://youtu.be/_xZc755qieU)
- Brandon Ro, “Templum Dei: Exploring the Language of Sacred Architecture” <https://youtu.be/4wFF9BHihf4>

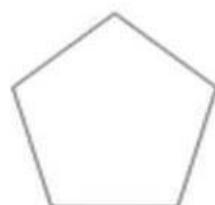
## POLYGONS



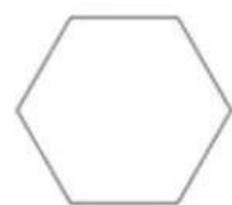
Triangle – 3 sides



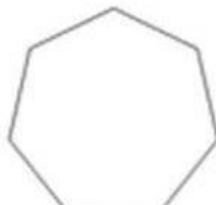
Square – 4 sides



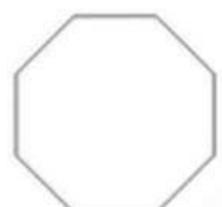
Pentagon – 5 sides



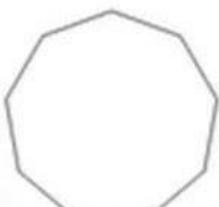
Hexagon – 6 sides



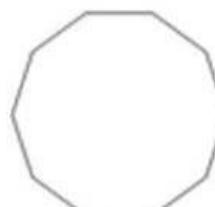
Heptagon – 7 sides



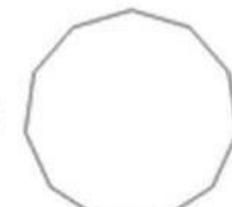
Octagon – 8 sides



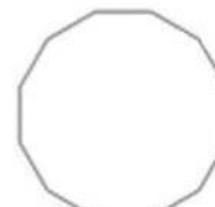
Nonagon – 9 sides



Decagon – 10 sides



Hendecagon – 11



Dodecagon – 12

## PART A – GEOMETRY SKETCHES #1-4

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### DRAWINGS REQUIREMENTS

Using a compass and straight edge as demonstrated in class, sketch the geometrical shapes (polygons) associated with numbers 1-4 in your sketchbook (e.g., 1=circle; 2=vesica pisces; 3=triangle, 4=square). Take a photo of your sketches and upload them to Canvas by the deadline for credit.

### READING

Martineau, p.11-19; Supplementary reading Schneider, p.1-95

### VIDEO TUTORIALS

Vesica pisces - <https://youtu.be/mTbzakLku3w>  
Triangle - <https://youtu.be/MbUlShaj52Y>  
Square - <https://youtu.be/e-i64DkVFC0>

## PART B – GEOMETRY SKETCHES #5-8

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### DRAWINGS REQUIREMENTS

Using a compass and straight edge as demonstrated in class, sketch the geometrical shapes (polygons) associated with numbers 5-8 in your sketchbook (e.g., 5=pentagon; 6=hexagon; 7=heptagon, 8=octagon). Take a photo of your sketches and upload them to Canvas by the deadline for credit.

### READING

Martineau, p.20-27; Supplementary reading Schneider, p.96-300

### VIDEO TUTORIALS

Pentagon - <https://youtu.be/9NmO1Bq-oWg>  
Hexagon – <https://youtu.be/shVumum36k4>  
Heptagon – <https://youtu.be/cErccoHui9g>  
Octagon – <https://youtu.be/7Y2ngw0UPo8>

## PART C – GEOMETRY SKETCHES #9-12

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### DRAWINGS REQUIREMENTS

Using a compass and straight edge as demonstrated in class, sketch the geometrical shapes (polygons) associated with numbers 9-12 in your sketchbook (e.g., 9=nonagon; 10=decagon; 11=hendecagon, 12=dodecagon). Take a photo of your sketches and upload them to Canvas by the deadline for credit.

### READING

Martineau, p.28-35; Supplementary reading Schneider, p.301-346

### VIDEO TUTORIALS

Nonagon – <https://youtu.be/3tqwPJsyRqM>  
Decagon – <https://youtu.be/MSvsqGmkwpA>  
Hendecagon – <https://youtu.be/R2zSqw8weU>  
Dodecagon – <https://youtu.be/ahtDAvGKpeg>

# PART D – ARCHETYPAL GEOMETRY DRAWING

## DRAWINGS REQUIREMENTS

Using an 11"x17" Tabloid sheet of vellum or watercolor paper, each student will select a natural form and a manmade form to study. Four analytical drawings will be made for each object that is chosen. In total you will have eight drawings on a single sheet as illustrated in the layout below. Each object will be studied via the following drawings:

1. Figure-ground drawing showing the outlined form
2. Simplified line drawing of object
3. Simplified line drawing of object with polygon geometrical construction lines overlaid in red
4. Polygon geometrical construction lines by themselves

Submit physical drawing by due date for credit.

NATURAL FORM		MANMADE FORM	
FIGURE GROUND	SIMPLIFIED DRAWING	FIGURE GROUND	SIMPLIFIED DRAWING
DRAWING W/GEOMETRY	GEOMETRY	DRAWING W/GEOMETRY	GEOMETRY
<b>ARCHETYPAL GEOMETRY</b> STUDENT NAME			
UTAH VALLEY UNIVERSITY ARCHITECTURE & ENGINEERING DESIGN		PROFESSOR RO EGDT 2740 MONTH 2020	