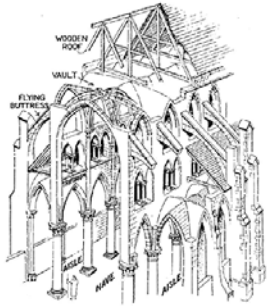


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## DESCRIPTION

Design requires a constant oscillation between 2d and 3d processes, between drawing projections and models. Digital techniques have combined these methods and have evolved them into something far beyond the digital pencil. If designers learn to grasp the precise logic behind the basics and explore the extremes of digital processes they can unleash a flurry of creative possibilities, however, if designers fail to grasp the elegance of digital modeling than the computer will feel like a constraint rather than an enabler.

Assignment 2 asks you to study design systems from a historic architectural style – the Gothic – and interpret the inherent formal, structural, and/or ornamental systems into a new 3D 'digital prototype'. You will produce:

1. A digital 3D 'module' which is based on geometric systems derived from the Gothic architectural style.
  - The module should consist of a **'surface/skin'** geometry and **'structure'** geometry.
  - The module should interpret some aspect of Gothic geometry.
2. The module must be capable of 'tiling' 3D space using transformations: move, rotate, mirror, scale, etc.
3. Your final product will be a prototypical module and an 'aggregation' to demonstrate systemic behavior.
4. The final submission will be 'assembly instructions' composed of 2D and 3D renderings and drawings.

At times the complexity inherent within the architectural style and the ambiguity presented in the open ended design problem will make modeling difficult. The real challenge will be to critically assess the architectural style and reinterpret into a new digital system with its own defined rules and behaviors.

## OBJECTIVES

Upon completing this assignment students should:

- Creatively and critically assess a modeling strategy for interpreting design logic.
- Be able to translate a set of rules and ordering systems into a 3D prototype and assemblage.
- Be able to model complex geometric relationships with precision and efficiency using 3D NURBS.
- Be able to efficiently compose rule-based systems using 3D transformations such as copy, rotate, mirror, and scale.
- Be able to manage files and rework models to operate within appropriate file sizes
- Have an understanding and ability to extract two dimensional orthographies from 3D models
- Have an intermediate understanding and ability to render three dimensional models
- Have a basic understanding of raster, vector and page layout manipulations
- Have a basic understanding of graphic design principles for non-graphics majors
- Have an ability to post-process 2d output
- Have an ability to manage a collection of files into a coherent presentation

## SUBMISSION REQUIREMENTS

### PIN-UP (minimum requirements)

- 1 preliminary 36" x 60" (horizontal or vertical (depending on project)) with drawing and image layouts (must be printed). Must be prepared for the drawings to be written on and marked up if necessary. The panels will contain vector drawings with line-weights and post-produced rendered perspectives.
- The boards should read as 'Assembly Instructions' showing the geometry construction of the 'module' and how the module assembles itself to an aggregate form. The 'Instructions' should contain a mix of...
  - A graphic analysis of the Gothic style to communicate your geometric concept.
  - A composite 'ghost diagram' showing the rendered component module and possible relations as hidden line.
  - 1 systematic 'exploded diagram' showing the component parts of the module.
  - 1 main rendered perspective showing the overall assemblage of modules.
  - 3-4 smaller perspectives showing spatial quality at the 'eye level', 'interior', and 'detail'.
  - 2 (or more) 2D Plans of the aggregated assembly.
  - 2-4 2D Elevations of the aggregated assembly.
  - 1-2 2D Sections (with annotations / references.)
  - A narrative explaining your modeling technique and the assembly 'rules'.

**FINAL SUBMISSION** (minimum requirements)

- **Final 36x60 Printed Layout. PRINT on quality paper.** (Horizontal or Vertical) with drawing and image layouts (must be printed). The panels will contain vector drawings with line-weights and post-produced rendered perspectives. The elegance of design, layout, and communication of the panels will form part of your final grade. Note: do not make your font sizes too big (this is a very common mistake)
- **Final 24 x 36 Digital Copy in 2 formats:** PDF Digital Copy (300 dpi) and 1 - JPG Digital Copy (200 dpi);
- **Final Rhino Model.**
- **Digital file to be uploaded to the University File Server.** Filenames:
  - ARCH223\_F12\_LastnameFirstname.3dm
  - ARCH223\_F12\_LastnameFirstname.pdf
  - ARCH223\_F12\_LastnameFirstname.jpg
- **TITLE BLOCK** on the board includes: Your Name, TA Name, Lab Time & Section Number, and Professor. Please use Ariel 9-14pt font with 3 different sizes (max) OR as instructed by your lab instructor. All work must be pinned up BEFORE the start of Lecture.