Final

Integrated Computational Design Journal

Course: Arch 565 - Advanced Computer Applications II
Due Date: Wednesday, December 10
Weight: 25% of assignment grade

Overview

The final assignment for Arch 565 is a cumulative digital journal that documents your full semester of computational design work. The goal is to synthesize the methods, workflows, drawings, models, reflections, and renderings from Assignments 01 through 04 while expanding upon them with additional investigations undertaken throughout the course.

Your journal should present a clear narrative of your technical and conceptual development in computational design. It must not simply restate earlier submissions, but rather curate, analyze, and build upon them to demonstrate how your skills and architectural thinking have evolved. The journal should highlight your experiments, failures, iterations, breakthroughs, and insights as you engaged with parametric thinking, cross-platform interoperability, digital modeling, and real time visualization.

This is not a portfolio. It is a research document that traces how computational logics influence your design decision making, representation techniques, and digital craftsmanship. Additionally, your journal may include external links to sources and material that was helpful or will be helpful in your future explorations.

Journal Structure and Required Components

Your final journal must include the following four core sections corresponding to the earlier assignments, these may be revised, expanded, and critically annotated.

Submission: Uploaded final pdf.

Section 01: Parametric Sketching

Include the full set of nine sketches:

- Three parametric systems.
- Three time-based sketches for each system (10 min, 1 min, 5 sec).

Optional additions:

- Additional sketches developed after the initial assignment.
- A deeper reflection on how time, speed, and intuition shaped your understanding of parametric behavior.

- An analysis connecting your sketches to later computational work in Grasshopper, Rhino, Revit, or Twinmotion.
- A recollection of how parametric thinking evolved through the semester.

Section 02: Linking Programs and Software Interoperability

Present your Rhino to Grasshopper to Revit workflow and include:

- Cleaned and clarified workflow diagrams.
- Annotated screenshots of successful and unsuccessful transfers.
- Commentary on how data translation affected design outcomes.
- Identification of limitations, unexpected behavior, and opportunities for future expansion.
- A refined reflection on cross-platform workflows and their value for professional practice.

Optional additions:

- Experiments not included in the original submission.
- Alternative workflows using other plugins or computational tools.
- Notes on how BIM and parametric data structures influenced each other.

Section 03: Digital Design Model

Include:

- Revised parametric model diagrams.
- Additional iterations.

Optional additions:

- Updated Grasshopper definitions demonstrating improved organization or control.
- A critical discussion of how your design intent was sharpened or altered through parametric variation.
- Observations about parametric dependencies, constraints, and emergent geometric behaviors

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Section 04: Renderings

Include the three required renderings plus any additional test renderings or atmosphere studies completed after the assignment.

Optional Additions:

- How rendering choices communicate architectural intent.
- Lighting, atmosphere, material, entourage, and environment selections.
- Changes you made to your model after seeing initial render results.
- How real time visualization supports or challenges computational design workflows.

If appropriate, show render evolution through iterative screenshots.

Additional Explorations

Your journal may also include:

- Experiments with plugins (Kangaroo, Ladybug, Weaverbird, etc.).
- Unused or abandoned models with explanation.
- Studies of error states, geometry failures, or unexpected results.
- Critical comparison of hand sketches and digital representations.
- Notes on how you might expand your parametric model or workflow in future work.
- Any other exploration relevant to computational design practice.
- These additions should be clearly marked as supplemental investigations.

Format Requirements

- Journal must be compiled as a single pdf not exceeding 25 mb.
- Visuals must be captioned, dated, and labeled clearly.
- Include page numbers, section headers, and consistent graphic formatting.
- Use a clear, readable font with appropriate hierarchy.
- All diagrams, screenshots, and renders must be high resolution.

Evaluation Criteria (100 points)

1. Integration and Cohesion (25 pts)

The journal demonstrates a strong conceptual thread connecting all four assignments. The work shows evolution, depth, and internal consistency.

2. Technical Rigor (25 pts)

Parametric models, workflows, and renderings demonstrate high proficiency and improved craft.

3. Documentation Quality (25 pts)

Diagrams, sketches, workflows, and explanations are clear, well organized, and visually coherent.

4. Reflection and Critical Insight (15 pts)

Writing demonstrates awareness of computational design logic, design intent, and iterative learning.

5. Craft and Presentation (10 pts)

The journal is clean, professional, and curated.