

Dalhousie Univ. School of Architecture and Planning
ARCH 6504: Montage in Architecture
(ArchViz)

Class/Online/independent Time: TBA

Room: B102

Course Instructor: Ken Kam

Office: B101 (Ralph M. Medjuck Building)

Contact: *ken.kam@dal.ca*

Course Description

This course examines the history, concepts, and uses of montage in architectural representation. It also considers how digital photography and digital 3D technology can generate various forms of graphic montages and physical models for analyzing, representing, and developing architectural designs.

Additional Course Description

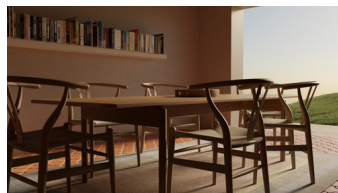
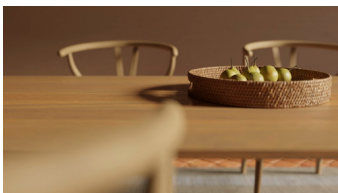
This course is a critical examination of montage/photomontage of architectural representation in the modern world. It develops the use of digital images in architectural design work. It also provides a detailed examination of current digital photographic equipment, software and practices, including capturing, editing, and manipulating images. Furthermore, students will research and examine how to use photographic elements to create a digital 3D model and environment.

Learning Objectives

1. Students will complete the course with a good understanding of the culture and history of photomontage.
2. 2) Students will learn how to print/use a 3D printer and understand its workflow.
3. Students will learn to use fragments of different landscapes, buildings, places, people, and environments to assemble a graphic illustration and/or digital 3D model. Students will also use their photographs, design, and 3D modeling skills to create a digital illustration.
4. Students will develop research, creative, and post-production skills through the use of different 2/3D software in their projects (Blender, Adobe Photoshop, etc....)

Sequence of Projects

1. Multiple images montage (exercise in perspectives and masking layers)
2. Digital montage/architecture visualization: Combining digital models with photographs.
3. Digital to physical model: experimentation in Blender's physical simulation properties, e.g. fluid/wind simulation, cloth, collision, rigid body simulation.



Digital illustration by: Ken Kam

1: Layer and Perspectives

Duration: 2 weeks

Part 1

Multiple images montage. This assignment is to get you thinking about the theory and practice of layers and perspectives.

Pre-visualizing an architectural space/idea is something that faces all students of architecture. Each medium and style option that you select will influence how your idea is seen and understood. For this project, create three digital photographic compositions of an environment, a space and/or an idea.

2: Architecture Visualization

Duration: 4 weeks

Part 2

Architecture Visualization: Digital Montage - Research and examine the theory/practice of 3D modeling, image texturing and rendering in a digital 3D environment.

What:

- Construct a digital three-dimensional model or scene that depicts or describes an idea, a landscape, an architectural structure/element or a fictitious scene.
- apply image texture
- render the image
- Using virtual camera to capture/render multiple images.

3: Architectural Model:

Duration: 4 weeks

Part 3

This assignment is to get you thinking about the process of transforming a two dimensional images into a physical three dimensional form.

What:

Construct a three-dimensional model or scene that depicts or describes an idea, a landscape, an architectural structure/element or a fictitious scene. It can be a static model or it can be interactive with moving parts. The primary aim is to create a physical model using 3D printers and laser cutter.

1: Layer and Perspectives

Duration: 4 weeks

Part 1

Multiple images montage. This assignment is to get you thinking about the theory and practice of layers and perspectives.

What:

The choice of medium for visualizing an idea is something that faces all students of architecture and urban design. Each medium and style option that you select will influence how your idea is seen and understood. For this project, create three digital photographic compositions of an environment, a space and/or an idea.

How:

You are to create (using Photoshop) :

1. A color extended street scape (a practice in perspectives and layers)
2. Switch objects and backgrounds (in color).
3. Three digital montages using different elements. (based on cinematic matte painting layers theory)

Material:

- You can download free and high resolution images from the Library of Congress website (<http://www.loc.gov/index.html>)
- You can scan new photographs
- Digital 3D models
- Photographs of your site

Format:

digital format



Digital illustration by: Ken Kam

2: Architecture Visualization

Duration: 4 weeks

Part 2



Digital Montage - Research and examine the theory/practice of image texturing and rendering in a digital 3D environment.

What:

- Construct a digital three-dimensional model or scene that depicts or describes an idea, a landscape, an architectural structure/element or a fictitious scene.
- apply image texture
- render the image
- Using virtual camera to capture/render multiple images.

How:

Using Blender along with other 3D software to create a model with image mapping technique.

Rules:

To be announced.

Objectives:

1. Learn how to use image mapping in Blender to enhance image quality.
2. Develop a further understanding of image fragmentation, assemblage, and composition
3. Express architectural ideas through digital media.



Digital illustration by: Ken Kam

3: Diorama/Architectural Model:
Duration: 4 weeks

Part 3

This assignment is to get you thinking about the process of transforming a two dimensional images into a physical three dimensional form.

What:

Construct a three-dimensional model or scene that depicts or describes an idea, a landscape, an architectural structure/element or a fictitious scene. It can be a static model or it can be interactive with moving parts. The primary aim is to create a physical model using Blender's Physical simulation (e.g. fluid/wind simulation, cloth simulation, force field etc...).

How:

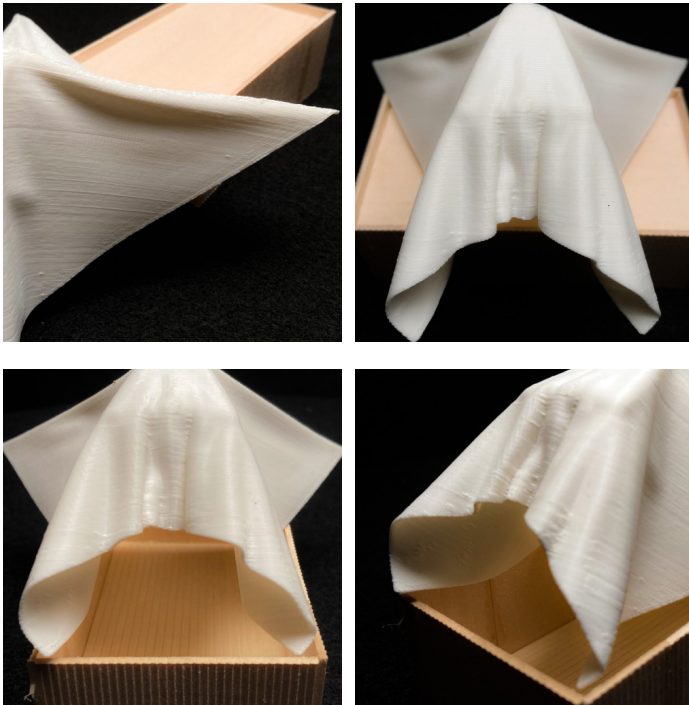
You are to use 3D printers (PLA), laser cutter/engraver, and 2D printers to build your model (please refer to images shown in class).

Rules:

Maximum volume size cannot exceed 125 inch³
(5 x 5 x 5 inches)

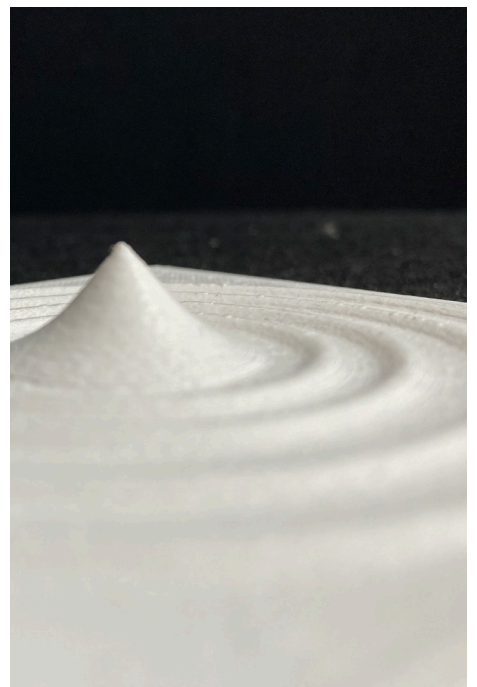
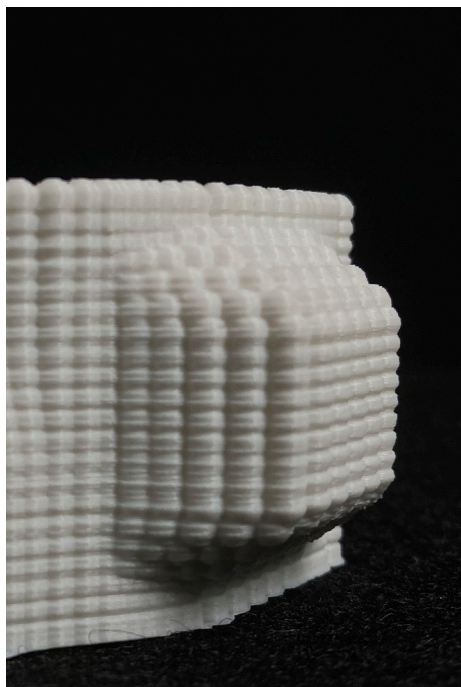
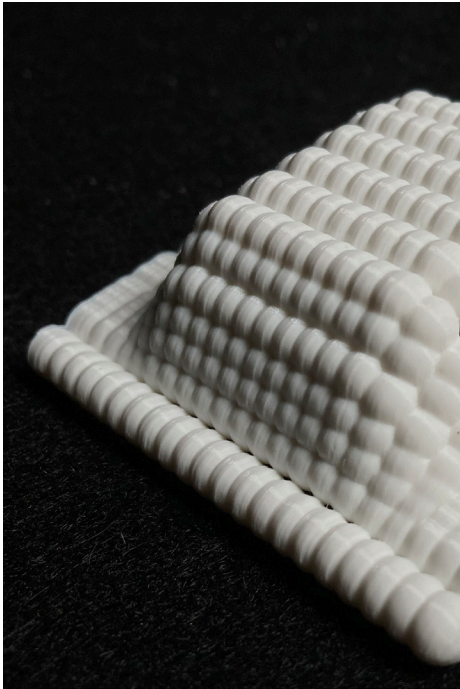
Objectives:

1. Develop a further understanding of digital translation from two-dimensional drawing to a three-dimensional model/diorama.
2. Develop a further understanding of image fragmentation, assemblage, and composition.
3. Express architectural ideas through digital media.



*3: Diorama/Architectural Model:
Duration: 4 weeks*

Part 3



Schedule

Part 1

Part 2

Part 3

Week	Date	Topic	Due
1	Jan. 8	Lecture: Perspective and Layers in Photomontage. Intro to Project 1. In class activities.	
2	Jan. 15	NO Class - professional practice	
3	Jan. 22	exercise due Lecture: Panorama/Cinematic Matte Painting	
4	Jan. 29	project 1 "process" presentation - Intro. to Proj. 2 (Intro. to 3D printing + displacement in Blender)	Project 1 due/Blender tutorial due.
5	Feb. 5	short assignment due / progress report due / first 3D printing test	
6	Feb. 12	Student Presentation - "work in progress".Intro. proj. 3 (3D printing, Laser cutter, & 2D printer)	
7	Feb. 19	No Class - study break	
8	Feb. 26	Student Presentation - Project 2 Lecture: 3D printers.	
9	Mar. 5	second 3D printing test, progress report/presentation for project 3	Project 2 due
10	Mar. 12	presentation of 3D models (digital and physical), Cinematic Matte illustration.	
11	Mar. 19	NO Class - Thesis exam week	
12	Mar. 26	Students Exhibition	Project 3 due
13	Apr. 2	No Class	

References

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- T. H. M. Siddique, I. Sami, M. Z. Nisar, M. Naem, A. Karim and M. Usman, "Low Cost 3D Printing for Rapid Prototyping and its Application," 2019 Second International Conference on Latest trends in Electrical Engineering and Computing Technologies (INTELLECT), Karachi, Pakistan, 2019, pp. 1-5, doi: 10.1109/INTELLECT47034.2019.8954983.
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- A. Raza, S. Farhan, S. Nasir and S. Salamat, "Applicability of 3D Printed Fighter Aircraft Model for Subsonic Wind Tunnel," 2021 International Bhurban Conference on Applied Sciences and Technologies (IBCAST), Islamabad, Pakistan, 2021, pp. 730-735, doi: 10.1109/IBCAST51254.2021.9393214.
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- G. Fazzini et al., "Print On Air: FDM 3D Printing Without Supports," 2019 II Workshop on Metrology for Industry 4.0 and IoT (MetroInd4.0&IoT), Naples, Italy, 2019, pp. 350-354, doi: 10.1109/METROI4.2019.8792846.
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Assessment

Evaluation

Project 1 - 20%

Project 2 - 40%

Project 3 - 30%

Attendance & Participation - 10%

University Standards for Individual Assignments

- Excellent: A+ (90–100%), A (85–89%), A– (80–84%): Considerable evidence of original thinking; outstanding capacity to analyze and synthesize; outstanding grasp of subject matter; evidence of extensive knowledge base.
- Good: B+ (77–79%), B (73–76%), B– (70–72%): Evidence of grasp of subject matter, some evidence of critical capacity and analytical ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.
- Satisfactory (C–, C, C+): Evidence of some understanding of the subject matter; ability to develop solutions to simple problems; benefiting from his/her university experience.
- Marginal pass (D): Evidence of minimally acceptable familiarity with subject matter, critical and analytical skills.
- Inadequate: F (0–69%): Insufficient evidence of understanding of the subject matter; weakness in critical and analytical skills; limited or irrelevant use of the literature.

As this is a graduate course, a final grade below B– will be recorded as an F. The instructor will grade the assignments. Written comments will be provided.

Common evaluation criteria for each project and its process are based on (but not limited to):

- preparation for class presentations, contribution to class discussions based on your work and own experience.
- proper citation and usage of reference material. (Guidelines for citing sources - tinyurl.com/dal-arch-writing)
- use of reference material from the course outline and other sources

Submissions:

All projects will be submitted digitally on Brightspace and/or uploaded to Instructor's dropbox.

Submissions

All projects will be submitted digitally on Brightspace and/or uploaded to Instructor's dropbox.

Due Dates and Late Submissions

Deductions for late submissions encourage time management and maintain fairness among students.

	<i>Due date</i>	<i>Is a late assignment accepted?</i>	<i>If so, what is the deduction per weekday?*</i>	<i>Is there a final deadline for a late submission?</i>	<i>What happens after that?</i>
<i>Project 1</i>	<i>Jan. 29</i>	<i>y</i>	<i>TBA</i>	<i>TBA</i>	<i>TBA</i>
<i>Project 2</i>	<i>Mar. 5</i>	<i>y</i>	<i>TBA</i>	<i>TBA</i>	<i>TBA</i>
<i>Project 3</i>	<i>Mar. 26</i>	<i>n</i>			

* For example, if an assignment is evaluated at 75% before applying a 3%-per-weekday deduction, it would receive 72% for being 1–24 hours late; 69% for 25–48 hours late; etc.

NOTE: The following University or School policies take precedence over course-specific policies:

- No late assignments are accepted after the last day of weekly classes (the Friday before review week).
- With a Student Declaration of Absence (maximum two per course), an assignment may be submitted up to three weekdays late without penalty. An SDA cannot be used for the final assignment.
- With a medical note submitted to the School office, a course assignment (including a final assignment) may be submitted more than three weekdays late without penalty. The number of weekdays depends on how long you were unable to work, as indicated in the medical note. If more than one course is affected, you should consult with the Undergraduate/Graduate Coordinator to set a new schedule of due dates.
- A student with an accessibility plan that allows for deadline extensions does not need to submit an SDA.

Faculty Policy

Equity, Diversity, and Inclusion

The Faculty of Architecture and Planning is committed to recognizing and addressing racism, sexism, xenophobia and other forms of oppression within academia and the professions of architecture and planning. We, the faculty, are working to address issues of historic normalization of oppressive politics, segregation, and community disempowerment, which continues within our disciplines today.

University Policies and Resources

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate. See the School's "Academic Regulations" page (tinyurl.com/dal-arch-regulations) for links to university policies and resources:

- Academic integrity
- Accessibility
- Code of student conduct
- Culture of respect
- Equity, diversity, and inclusion
- Student declaration of absence
- Recognition of Mi'kmaq territory
- Work safety
- Services available to students, including writing support
- Fair dealing guidelines (copyright)
- Dalhousie University Library