Faculty of Environmental Design | University of Calgary

Graphics Workshop II

EVDA 543 / ARST 453 . H(0-8) . Winter 2019

SCHEDULE (*lect*, tut)

WEEK 1
Course Intro/ Photogrammetry
WEEK 2
3D Modelling/ Maya I
WEEK 3
Rendering/ Rendering I
WEEK 4
Resolution/ Maya II
WEEK 5
Fabrication/ Fab. Modelling
WEEK 6
Review/ Revit I

BLOCK WEEK

WEEK 7
Info Modelling/ Revit 2
WEEK 8
Thinking BIM/ Revit 3
WEEK 9
Technical Doc/ Revit 4
WEEK 10
Technical Doc */ Review*
WEEK 11
Working/ Dynamo I
WEEK 12
Interim Review/ Dynamo II
WEEK 13
Work time / *Final Review*

Note*: course schedule is subject to change based on class progress.*

Instructors

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Teaching Assistants

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Days and Times

Mondays + Wednesdays 08:40 – 12:50 PF 2160

Related Courses

Prerequisite: EVDA 541 / ARST 451 (Graphics Workshop I)
Corequisite: EVDA 582 / ARST 444 (Studio II in Architecture)

Course Description

Graphics Workshop II expands on the foundational techniques introduced in Graphics I. The course works to build skill in modelling, visualization, and technical documentation, with a special emphasis on digital, information-driven workflows. Graphics II aims to build technical competency and intuition across a range of platforms, engaging students in contemporary modes of architectural production, analysis, and representation.

CACB Student Performance Criteria

At a primary level: A3 – Graphics Skills, C3 – Technical Documentation.
At a secondary level: B1 – Design Skills.

Resolution & Versioning

Resolution is a property of information; it describes the level of detail in a system (of sound, of time, of an image, of a database). You have likely encountered the term when shopping for a computer display, setting up a file to print, or scanning a photo.

Resolution is integral to the architectural design process and its outputs. Architects must manage detail (in concept, in construction documentation, in timeline, in cost estimation) to ensure that an appropriate level of resolution is passed forward to a client, to a contractor, or to the next stage of design. Too much or too little detail can cause issues in the clarity and efficacy of a design workflow.

In your studio, resolution is also an axis upon which your project travels. Broadly, your design goal is to produce, image, assess, and select from architectural possibilities. You do this to address a set of questions (about material, about space, about the city). As you iterate through your projects toward this end, you are also tasked with adding resolution.

Versioning relies on digital techniques to combine generative design, information modeling, fabrication, and assembly into 'loops' that inform iterations – each with a higher degree of resolution. Versioning integrates our conception and construction of space, structure, and objects throughout the design process (i.e. the process of resolution).

Course Objectives

Technique

Students will produce outputs that demonstrate proficiency in the use of design tools and awareness of how these tools can work together to produce design workflows.

Information

Students will produce outputs that are precise and show an appropriate amount of detail for their context.

Communication

Students will produce and present graphic and built outputs that demonstrate sensitivity to tone, hierarchy, the organization of pieces, and project narrative.

Craft & Completeness

Students will produce well-crafted outputs that demonstrate an attention to detail, material, and presentation.

Teaching Approach

The class will meet twice weekly for a mix of lecture, in-class activities, tutorials, and reviews. Lectures, reviews, new assignments, and discussion will usually happen on Mondays, and tutorials and workshops will usually happen on Wednesdays. As noted in the schedule outline on the cover page of the syllabus, each week has a theme that will influence both the lecture and tutorial work. Some of these are one-off exercises meant to explore a branch of the tree, where others are sequenced in a way that builds competency in core techniques.

Textbooks, Equipment, and Software

No textbooks are required for this class. Occasional readings may be assigned and PDFs will be made available. Students are expected to have their own laptop computers. Required software is listed below (additional plugins, as necessary, may be integrated into some exercises):

Digital Camera (mobile phone cameras OK)
Creative Suite
AutoCAD
Maya
Dynamo Studio
Revit
Dynamo for Revit

Course Modules

The course is organized into three modules, each of which will help you build resolution in your modelling practices and design work. They will all in some way deal with the production of technical documentation, visualization, and information-driven workflows.

1 | Generative Modelling	**2 | Building Information Modelling**	**3 | Computational Design**
Photogrammetry	Moving from 3D to BIM	Visual Design Logics
3D Interface	BIM Interface	The Parametric Canvas
Basic 3D Workflows	Basic BIM Workflows	Basic Parametric Workflows
Line Outputs	Revit Essentials	
Digital Fabrication I	Working Drawings	
Rendering I		

Assignment Weighting

A0 (participation) – 20%

A1 (module 1) – 30%

A2 (module 2) – 30%

A3 (module 3) – 20%

Means of Evaluation

Each assignment will include a rubric that reveals the method of assessment. While weighting between the below-listed sections will vary by project, all will be assessed per the following 4 criteria. This system will give you the opportunity to identify which elements of your work should receive your attention moving forward.

Technique

(project demonstrates proficiency in the tools; correct tools are used to solve problems)

Information & Precision

(project demonstrates rigour, clarity, accuracy and shows an appropriate amount of detail)

Communication

(project is sensitive to story-telling, hierarchy, tone, and overall coherence)

Craft & Completeness

(project deliverables are present, outputs are well-crafted, overall care is evident)

Grading Scale

A+	95 – 100	4.0
A	90 – 94.99	4.0
A-	85 – 89.99	3.7
B+	80 – 84.99	3.3
B	75 – 79.99	3.0
B-	70 – 74.99	2.7
C+	65 – 69.99	2.3
C	60 – 64.99	2.0
C-	55 – 59.99	1.7
D+	50 – 54.99	1.3
D	45 – 49.99	1.0
F	00 – 44.99	0.0

Note

All final grades below B- are indicative of failure at the graduate level and cannot be counted

Resolving Questions

To make it easier for you to get answers to your questions, and to help us all manage the curve balls that life throws our way over the term, we have created a series of quick resolution guides. These should be pursued in order, from left to right, to make sure all avenues are adequately explored.

A. Technical Questions – i.e. how do I create a family in Revit?

Help files > Classmates > Google > TAs > Find another way

B. Course Organization & Evaluation Questions – i.e. how will this assignment be evaluated?

Course outline & assignment briefs > Matt and Branko

C. Theory / Concept Questions – i.e. what do you mean by aggregation?

Classmates > TAs > Matt or Branko

D. Production Questions – i.e. how do I use this tool properly / why is the laser cutter on fire?

Shop manuals & guides > Nathan & shop assistants > Don't do it

Safety

Participation in this course will involve the use of shop tools, including blades, grinders, lasers, robotic arms, and other Bond villain devices. We shouldn't have to tell you to be safe around lasers, but here it is: improper use of this equipment can result in serious injury and/or damage to the equipment. For detailed information and certification required before using the shop, please refer to the EVDS website:

evds.ucalgary.ca/content/workshop

Students are required to have completed EVDS shop training to use the shop facilities. Please contact the head shop technician (evdsshop@ucalgary.ca) for details about training schedules and other requirements.

SAFE USE OF SHOP EQUIPMENT WILL ALWAYS TAKE PRECEDENCE OVER COURSE REQUIREMENTS. DO NOT DRIVE OR USE SHOP EQUIPMENT IF YOU HAVE MISSED A NIGHT OF SLEEP.

The course will also involve intensive use of software, which can at times entail long stretches in front of a computer. Please be conscious of ergonomic practices in your workspace habits. Take frequent breaks, drink lots of water, and change your scenery every now and again. The following website, published by Cornell University, offers some good advice about the ergonomics of notebook computer use:

ergo.human.cornell.edu/culaptoptips.html

Course Expectations

Students are expected to:

- Prepare for, attend, and participate in all class sessions.
- Demonstrate graduate-level discourse, in rigour of thought and quality of execution.
- Post or submit assignments on time. Late assignments will be docked half of a letter grade per day.

Extensions and Other Issues

To notify the instructors of an issue impacting your ability to complete coursework on time, or to request an extension, please send an e-mail containing the information in the bullets below. Submission of an e-mail does not guarantee an extension. The instructors commit to responding to e-mail within two week days; please plan accordingly. In your message, please include:

- Your full name & student number.
- A brief explanation of the issue.
- Your proposed solution to the issue (i.e. if requesting an extension, suggest a suitable replacement deadline).

Other Notes

1. Written work, term assignments and other course related work may only be submitted by e-mail if prior permission to do so has been obtained from the course instructor. Submissions must come from an official University of Calgary (ucalgary) email account.
2. Academic Accommodations. Students who require an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to their Instructor or the designated contact person in EVDS, Jennifer Taillefer (jtaillef@ucalgary.ca). Students who require an accommodation unrelated to their coursework or the requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Vice-Provost (Student Experience). For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/
3. Plagiarism - Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Most commonly plagiarism exists when:(a) the work submitted or presented was done, in whole or in part, by an individual other than the one submitting or presenting the work (this includes having another impersonate the student or otherwise substituting the work of another for one's own in an examination or test),(b) parts of the work are taken from another source without reference to the original author,(c) the whole work (e.g., an essay) is copied from another source, and/or,(d) a student submits or presents work in one course which has also been submitted in another course(although it may be completely original with that student) without the knowledge of or prior agreement of the instructor involved. While it is recognized that scholarly work often involves reference to the ideas, data and conclusions of other scholars, intellectual honesty requires that such references be explicitly and clearly noted. Plagiarism is an extremely serious academic offence. It is recognized that clause (d) does not prevent a graduate student incorporating work previously done by him or her in a thesis. Any suspicion of plagiarism will be reported to the Dean, and dealt with as per the regulations in the University of Calgary Graduate Calendar.
4. Appeals: If a student has a concern about the course, academic matter, or a grade that they have been assigned, they must first communicate this concern with the instructor. If the concern cannot be resolved with the instructor, the student can proceed with an academic appeal, which normally begins with the Faculty: http://www.ucalgary.ca/provost/students/ombuds/appeals
5. Information regarding the Freedom of Information and Protection of Privacy Act (http://www.ucalgary.ca/secretariat/privacy) and how this impacts the receipt and delivery of course material
6. Emergency Evacuation/Assembly Points (http://www.ucalgary.ca/emergencyplan/assemblypoints)
7. Safewalk information (http://www.ucalgary.ca/security/safewalk)
8. Contact Info for: Student Union (https://www.su.ucalgary.ca/contact/); Graduate Student representative (http://www.ucalgary.ca/gsa/) and Student Ombudsman's Office (http://www.ucalgary.ca/ombuds/).