

# Graphics Workshop II

EVDA 543 / ARST 453 H(0-8)

Winter 2015

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## **Instructors**

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Matt Knapik

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Joint TA E-mail

to be announced

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## **Teaching Assistants**

Brett Sanderson

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Matt Stewart

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Kristine Vodon

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## **Days & Times**

Mondays + Wednesdays

09:00 - 12:50

PF2160

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## **Prerequisite**

ARST 451 / EVDA 541

(Graphics Workshop I)

## **Corequisite**

ARST 444 / EVDA 582

(Studio II in Architecture)

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## **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 (additional plugins, as necessary, may be integrated into some exercises):

- Adobe Creative Suite, minimum CS5 (Indesign, Illustrator, Photoshop)
  - Rhinoceros 5 for Windows
  - Grasshopper Plugin for Rhinoceros 5 (latest version)
  - Autodesk Maya (for Windows or Mac)
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## **Course Description**

In Graphics Workshop I, students explored how architectural ideas can be expressed and manipulated through various modes of production and representation. Graphics 2 will approach this relationship from the other direction, exploring how the methods of production and representation can themselves host architectural ideas. The course will focus on digital modes shaping contemporary architectural research and design, and the significance these modes hold for possibility, complexity, and the designer's role in evaluation.

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### **Course Objectives**

1. Apply techniques that produce possibilities within the design process, through workflows that engage graphic elementals, simulation, parametrics, fabrication and visualization.
  2. Integrate workflows to iterate, evaluate, and select design possibilities and produce design composites.
  3. Engage in critical conversations about the designer's position relative to (i) the production of design possibilities and (ii) the criteria against which these possibilities are evaluated.
  4. Use sophisticated concepts and language to describe and assess design workflows.
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### **Course Modules**

#### **MODULE 1 - ELEMENTAL WORKFLOWS**

The purpose of module 1 is to assess the class skill level in the basic suite of softwares, their familiarity with orthographic projections, and their overall sense of form and composition. Skills will focus on moving types of graphics between types of software, on sculpting form within digital space, and on graphic composites.

#### **MODULE 2 - SIMULATION WORKFLOWS**

Module 2 asks students to explore how digital tools can be deployed to evaluate design possibilities. Students will be exposed to techniques that measure a family of geometry (surface and volume) according a range of criteria, including but not limited to mass, shading, insolation & solar radiation, surface area, curvature, edge length, thermal performance, etc. The focus will be on using quantitative techniques to generate information and diagrams that assist in the selection of design iterations.

#### **MODULE 3 - PARAMETRIC WORKFLOWS**

Module three introduces students to the potentials of parametric modelling, both as a means to generate opportunity and possibility, and as a means to model within defined constraint. Exercises will creating a range of outputs, from 'parametricist' component-based systems (that prioritize similarity and continuity) to predefined constraint-based systems (responding to preexisting limitations or policies). Parametric will be framed as 'designing relationships between geometries and information'.

#### **MODULE 4 - FABRICATION WORKFLOWS**

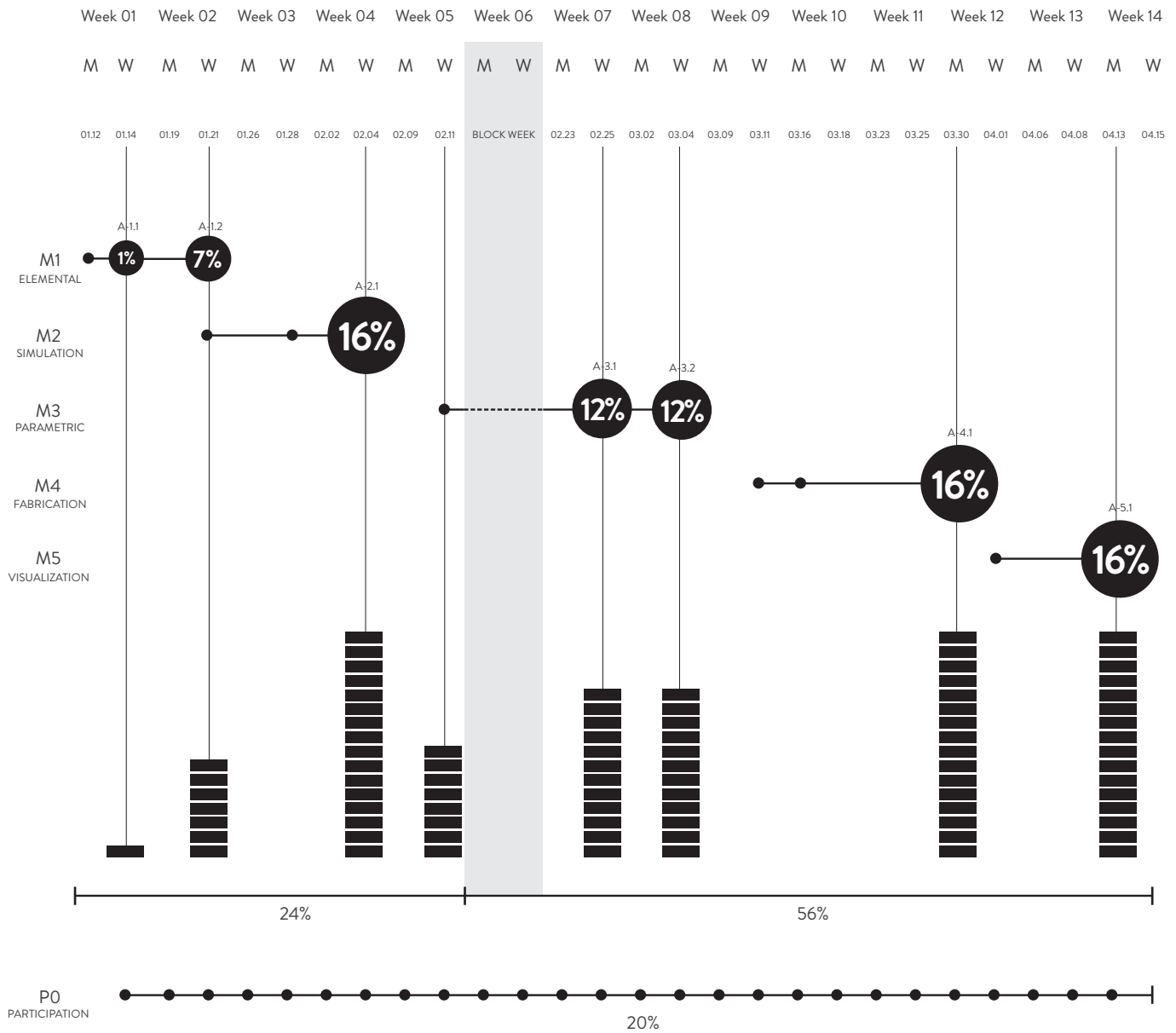
Module four examines material logics through the fabrication of prototypes, with an emphasis on digital modes of production. Through a series of exercises, students will explore the translation of geometry from digital to physical space using a range of techniques, including unrolling, unfolding, nesting, subdivision, labelling etc. The second, and more extensive, part of the module will produce multi-material composites as a means of exploring process, relationships, tectonics, and material affect.

#### **MODULE 5 - VISUALIZATION WORKFLOWS**

Module five explores advanced visualization techniques, with an emphasis on design narrative. Students will pursue rendering and animation techniques as tools in the design process and as presentation outputs. Tutorials will focus on techniques in lighting, compositing, motion, framing, and integration with other types of graphic outputs. Students are encouraged to explore these tools through the lens of their studio projects, culminating in the creation of a cornerstone visualization deliverable.

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**Schedule**



**Assignment Weighting**

P0	20%	Participation
M1	8%	Module 1 - Elementals
M2	16%	Module 2 - Simulation
M3	24%	Module 3 - Parametric
M4	16%	Module 4 - Fabrication
M5	16%	Module 5 - Visualization

### **Means of Evaluation**

Projects generated in this class will be evaluated according to the categories outlined below. Weighting among these sections will vary between assignments, but the sections themselves will remain consistent. Individual assignment briefs will contain rubrics outlining the weighting at the outset of each module.

**CONTENT** – *Content* refers to the sophistication of the submitted work's subject matter. Does the final product demonstrate how technique can host an architectural idea? Is it interesting?

**COMPOSITION** – *Composition* refers to the arrangement of parts in the submitted piece. Do the elements tell a coherent story? Does the tone suit the content?

**COMPLETENESS** – *Completeness* refers to whether or not a submitted piece has met the requirements outlined in the assignment's deliverables (content types, formatting, dimensions, etc.)

**CRAFT** – *Craft* refers to the quality of assembly and presentation in the chosen media. Does the final product demonstrate competence of the techniques used in the module? Is it presented with care?

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### **Grading Scale**

<b>Grade</b>	<b>Grade Point</b>	<b>Percent Grade Range</b>
A+	4.0	95-100
A	4.0	90-94.99
A-	3.7	85-89.99
B+	3.3	80-84.99
B	3.0	75-79.99
B-	2.7	70-74.99
C+	2.3	65-69.99
C	2.0	60-64.99
C-	1.7	55-59.99
D+	1.3	50-54.99
D	1.0	45-49.99
F	0.0	0-44.99

**Note**

All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.

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### **Resolving Issues**

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.

A. *Technical Questions* – i.e. how do I create a new layer in Photoshop?

**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 Jodi**

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

**Classmates > TAs > Matt or Jodi**

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**

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## **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. For detailed information and certification required before using the shop, please refer to the EVDS website: [evds.ucalgary.ca/content/workshop](http://evds.ucalgary.ca/content/workshop). Students are required to have completed EVDS shop training in order to use the shop facilities. Please contact the head shop technician ([evdsshop@ucalgary.ca](mailto: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](http://ergo.human.cornell.edu/culaptoptips.html).

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## **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 (i.e. B+ to B)

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## **Solving Problems**

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).

**PLEASE COPY BOTH INSTRUCTORS ON ALL E-MAIL COMMUNICATION.**

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### **Academic Honesty**

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.

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### **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. The Academic Accommodations Policy can be found at: <http://www.ucalgary.ca/access/accommodations/policy>. It is the students' responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodations and have not registered with Student Accessibility Services, please contact them at 403.220.6019. Students who have not registered with Student Accessibility Services are not eligible for formal academic accommodations. More information about academic accommodations can be found at [www.ucalgary.ca/access](http://www.ucalgary.ca/access). You are also required to discuss your needs with your instructor no later than fourteen (14) days after the start of this course.
  3. 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
  4. Emergency Evacuation/Assembly Points (<http://www.ucalgary.ca/emergencyplan/assemblypoints>)
  5. Safewalk information (<http://www.ucalgary.ca/security/safewalk>)
  6. Contact Info for: Student Union (<http://www.su.ucalgary.ca/page/affordability-accessibility/contact>); Graduate Student representative (<http://www.ucalgary.ca/gsa/>) and Student Ombudsman's Office (<http://www.su.ucalgary.ca/page/quality-education/academic-services/student-rights>).
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