Environmental DESIGN

architecture + landscape architecture + planning

Senior Research Studio in Architecture

EVDA 782.4. 03: 6 Units: F (0-8)
Winter 2018

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Office Location and Office Hours: TBD

A research oriented design studio in which students collaborate with faculty in projects exploring contemporary issues defining the built and natural environments. Students choose topics outlined by faculty expertise.

What they see: The Agency of Machine Vision

"To assume that the future will be like the present—only more so—is a risky bet. The historical evidence is against it. The value of emerging technologies may be less that they bring new solutions, but that they pose essential problems and questions: automation of what? Machine vision of what? Whose artificial intelligence about what? Who is included and excluded from the new norm; on what terms will we be included in each other's worlds, or not? We do not know what these technologies are for good for yet; they remain open to definition." (Benjamin Bratton)

This studio is as much a mapping of architecture's physical-virtual duality, as it is a sketch of an architecture to come, an architecture no longer physically constrained but freed through its digital footprint; an architecture that challenges the profession to jettison disciplinary anxieties around order, stasis, and materiality to better participate in the development and shaping of new technologies that (re)produce the ecologies of the city. It is a response to the realization that computation has become the logic of culture, and that through the mapping of virtual layers onto the physical city, computation and algorithms have transformed who and what constitutes a populace - collapsing the spatial and temporal dimensions of the city, and producing new forms of governance, control and consumerism. This studio focuses on the ability of machine vision to multiply and reanimate architecture's image, provoking new optical regimes that situate aesthetics at the forefront of how architecture is conceived and constructed.

Vision is an irreducible element of design, and the ability to see something new is the first step towards producing something new. As such, architecture has an extensive and intimate relationship with optical devices that mediate and manipulate our visual perceptions, exposing withdrawn characteristics that expand architectures' design space. Situating machine vision as an optical prosthetic within this lineage, this studio will explore techniques to mobilize its by-products to distort, destabilize and disturb our perceptions of the built environment. Through the shaping and designing of new vision technologies this studio will seek co-operations between human and machine perception to produce novel architectural representations that signal to new and speculative perspectives of objects, users and cities.

Objectives

- To demonstrate an understanding of the general principles, strategies and theoretical concerns of architectural design, and integrate said concerns into the design process.
- To acquire an ability to situate a critical research agenda and resulting architectural investigations within an established disciplinary lineage.
- To develop the skills to define, structure and execute a research methodology relevant to practical and theoretical issues of architectural design.
- To develop the skills and ability to utilize 2D and 3D, physical and analog representations as a tool for producing and communicating a critical narrative.
- To understand and develop algorithms as a series of simple sequential and related processes capable of producing complex and unexpected outcomes.
- To learn about the importance of vision and vision mediating devices within architectural conception and construction.

Additional specific objectives will be provided with each phase outline:

Teaching Approach

The Studio will be conducted utilizing a series of assigned readings, films, desk crits, design charrettes, informal and formal reviews. Detailed assignments with corresponding deliverables and deadlines will be disseminated at the beginning of each phase. Studio development will rely on the development and execution of phase specific methodologies, iterative exploration, observation, and critical reflection. Students are expected to produce new work in advance of all classes. Students should come to all scheduled meetings prepared to discuss their work and constructively critique the work of their peers.

Content: Topic Areas & Themes

Detailed class schedules, phase topics and project weighting will be provided at the start of each phase.

Phase One: Vision with New Lenses [January 8 – January 30]

Phase Two: From 3D to 2D to 3D [January 31 – February 13]

Phase Three: Fabricating Digital Objects [February 14 – March 6]

Phase Four: Making Sense of Data [March 7 – April 13] + Final Review (TBD)

Means of Evaluation

Specific deliverables and their corresponding due-dates will be provided at the commencement of each project phase. Students are expected to complete all required work by the assigned dates and show up to all scheduled desk crits, lectures and presentations on time and ready to discuss their work. Student work will be evaluated with respect to their digital and physical craft, conceptual development, completeness, design outcomes and overall professionalism.

Phase grading breaks down as follows:
Phase One: 20%
Phase Two: 20%
Phase Three: 20%
Phase Four: 40%

Grading Scale

Grade	Grade Point Value	4-Point Range	Percent	Description
A+	4.00	4.00	95-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	90-94.99	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	85-89.99	Very good performance
B+	3.30	3.15-3.49	80-84.99	Good performance
B	3.00	2.85-3.14	75-79.99	Satisfactory performance
B-	2.70	2.50-2.84	70-74.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	65-69.99	All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
C	2.00	1.85-2.14	60-64.99	
C-	1.70	1.50-1.84	55-59.99	
D+	1.30	1.15-1.49	50-54.99	
D	1.00	0.50-1.14	45-49.99	
F	0.00	0-0.49	0-44.99	

Notes:

- Final grades will be reported as letter grades, with the final grade calculated according to the 4-point range.
- All project phases will be evaluated by percentage grades, with their letter grade equivalents as shown.
- A student who receives a "C+" or lower in any one course will be required to withdraw regardless of their grade point average (GPA) unless the program recommends otherwise. If the program permits the student to retake a failed course, the second grade will replace the initial grade in the calculation of the GPA, and both grades will appear on the transcript.
- Students are expected to complete all course assignments on time. There will be no final exam. Students must obtain an overall passing grade to pass this course, however, if a student fails any phase of the course worth 30% or more they will fail the course. A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded may request to have the paper re-graded. The student shall discuss the work with the instructor within **fifteen days** of being notified of the mark or of the item's return to the class. More information can be found in the Graduate Calendar: http://www.ucalgary.ca/pubs/calendar/grad/current/gs-o.html

Readings

Bratton, B. 2015. *The Stack: On Software and Sovereignty*. Cambridge.

Bratton, B. 2015. *Machine Vision: Benjamin Bratton in Conversation with Mike Pepi and Marvin Jordan*.

Handlykken, A. K. 2011. *Digital Cities in the making: exploring perceptions of space, agency of actors and heterotopia*.

Kurgan, L. 2013. *Close up at a Distance: Mapping, Technology, and Politics*.

Leach, N. 1999. *The Anaesthetics of Architecture*.

Meisterlin, L., Varnelis, K. (2008) *The Invisible City: Design in the Age of Intelligent Maps.*

Morton, T. 2011. *Sublime Objects.*

Parisi, L. 2013. *Contagious Architecture Computation, Aesthetics, and Space*.

Shepard, M. 2011. *Toward a sentient city, in Sentient City Ubiquitous computing, architecture and the future of urban space*.

Wilkins, Gretchen. *Distributed Urbanism: cities after Google Earth*.

Young, L. (2015). *An Atlas of Fiducial Architecture*.

Additional required and suggested readings and resources will be provided with each phase of the studio.

Special Budgetary Requirements – please include these in the course outline.

EVDA 782 - Senior Arch. Studio (all sections) $150.00

CACB Student Performance Criteria:

The following CACB Student Performance Criteria will be covered in this course at a primary level:
A1: Critical Thinking Skills; A2: Research Skills; A3: Graphic Skills; B1: Design Skills.
Secondary Level: B3: Site Design; A6: Human Behavior.

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. 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

5. Emergency Evacuation/Assembly Points (http://www.ucalgary.ca/emergencyplan/assemblypoints)

6. Safewalk information (http://www.ucalgary.ca/security/safewalk)

7. 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/).