FALL 2019 CORE COURSES

Course Topic: Architectural Research and Analysis
Course Code: ARCH 610
Instructor(s): Robert Jan van Pelt & Jane Hutton
Day/Time: Tuesday 6:30-9:30pm ARC 1101

This course exposes students to research methodologies and diagrammatic strategies used for the analysis of works of architecture, approaches to design and key texts. These will act as case studies to learn about the conceptual ideas, formal/spatial principles, material systems and operative design strategies employed in the making of architecture while introducing students to analytical methods and processes considered integral to advanced research and design. The rigorous consideration of precedent and design research methods fosters a deeper connection of students’ work with the discipline, better enabling them to position their ideas within a larger conceptual discourse while giving them the methodological tools to prepare them for the undertaking of a research and design thesis.

Course Topic: Thesis Research and Design Studio I
Course Code: ARCH 692
Instructor(s): Philip Beesley, Adrian Blackwell, Jane Hutton, Marie-Paule Macdonald
Day/Time: Tuesday 9:30am-12:30pm & 1:30-5:30pm & Thursday 9:30am-12:30pm & 1:30-5:30pm

Graduate Thesis Research & Design Studio I guides students through the development of their thesis projects. Students may draw from a wide range of sources both within and beyond the conventional boundaries of the architectural discipline, using methods of exploration that may employ the tools of architectural production and critique, and that culminate in a written research document and/or design proposal. The goal of the Graduate Thesis is to make an active contribution to the field by opening up new ways of understanding an existing architectural topic. Students do not enroll in a studio section until studio assignments are finalized on September 5, 2019.

FALL 2019 ELECTIVE COURSES

Course Topic: Approaches to Architecture and Urbanism
Course Code: Arch 520 001
Instructor: Marie-Paule Macdonald
Day/Time: Wednesday 2:00-5:00pm ARC 2026

Graduate student spots: 10

The course provides a cross-disciplinary overview to approaches to architecture and urbanism. A series of topics are introduced, and students select, and/or combine approaches, to present seminars on selected topics, using a case study method and ideally linking the subject to an emerging master of architecture thesis in question. Reference to traditions such as illustration, serial comics and mass-printing methods help to link urbanism and architecture with other drawing and depiction modes and dissemination of information. The final submission will take form similar to a short graphic novel illustrating an array of design principles. The work of contemporary architects, designers and artists, ranges from Canadian artists such as Seth or Marcel Dzama’s storyboards for filmmaking, to graphic novelists Julie Doucet of Montréal, or Chicago-based Chris Ware, to designers, sometimes of cartoon-like architecture, such as Archigram, BIG, Cedric Price, Neuteling (of Neutelings Riedijk) OMA, Superstudio, to drawn ink work by artists such as Raymond Pettibon. Cartoon-style drawing and storyboard will be referenced as prototype and precedent for the final submission.

Course Topic: Russian Avant Grade
Course Code: Arch 540 001
Instructor: Elizabeth English
The merging of rational and non-rational modes of thought in the architectural design process is a theme that has long been an important area of speculation among architectural theorists. An investigation into 19th c. Russian avant-garde architectural theory yields insights into how the highly synthetic architectural design process may be conceptualized and theorized in ways that are fundamentally distinct from the practices of Western architectural culture. In brief, the Enlightenment has considerably less impact in Russia than in western Europe. As a result, Russian culture did not fully absorb the Cartesian privileging of the rational and devaluing of the non-rational that occurred in the West. The non-rational ways of knowing truth in the world were highlight valued by the Russian Slavophile philosophers, by whom they were identified as intuition, creativity and spiritual understanding. The Slavophile also held an appreciation for the edinstvo (unity, or literally “one-ness”) of all aspects of existence, rather than the Cartesian predilection for differentiating, categorizing and separating. Slavophile philosophy therefore us able to provide a conceptual basis for a different approach to the relationship between design and technology: having not suffered the separation experiences in the West, there exists, in this light, no inherent gap between “design thinking” and “technological thinking” to bridge.

One of the major contributions to the Russian architectural avant-garde to Western modern architecture was the incorporation of a particularly abstract form of dynamism, the explicit expression of motion, in architecture. The experiments of the Russian “Rationalists” were a primary source for this, derived from individual and collective attempts to manifest the mnimosti (“imaginarness”) of the space of the higher consciousness located in the non-Euclidean space, in the fourth dimension of the time, and to find ways of expressing, if not incorporating, this space in architecture. These experiments may also be described as seeking in architecture the space of the synthesis of the rational and non-rational modes of thought, the space where the edinstvo of science and spirituality can be made manifest through art. These explorations of the spiritual/mystical content, or mnimosti, embodied in art and architecture were part of the larger quest to harness the invisible energies of dynamism to forge a socially-based higher cosmic unity-of-being on earth. This revolution in art would in turn, they believed, ignite the social and spiritual world transformation they so deeply desired. Instead, their experience was not a revolution in art but of politics, that brought with it not salvation but suppression.

It is an explicit intention of the course that each student’s work for the term be an individual exploration of course-related themes that will in some significant way contribute to his/her thesis research development. Class discussions and projects will be situated within the larger context of exploring relationships among culture, technology and design thinking.

Course Topic: Architectural Steel Design
Course Code: ARCH 570 001
Instructor: Terri Boake
Day/Time: Wednesday 2:00-5:00pm ARC 1101
Graduate student spots: 10

Using an international database of case studies this course examines in detail the architectural design, specification, fabrication and construction process for Architecturally Exposed Structural Steel (AESS). It references the standards that were developed by the Canadian Institute of Steel Construction. Lectures will address topics including, the AESS Category Approach, fabrication standards and practices, project communication, tensile structures, diagrid structures, curved steel, castings, pedestrian bridges, steel with glazing, steel with timber. The work of the term will use current steel based competitions to explore detailed design application of the material.

Course Topic: Human Experience Design Methods for Architecture
Course Code: ARCH 570 002
Instructor: Jonathan Enns
Day/Time: Friday 10:00am-1:00pm ARC 1101
Graduate student spots: 20

Towards an Open Architecture 2: Architecture for Aging.
Human experience design (hx) methods in architecture provide frameworks for understanding problems, finding design opportunities, and building testable solutions for current & critical challenges in our built environment. The fundamental purpose of this course is to teach reusable innovation methods that will allow the rapid translation of ideas into reality through ‘experiential prototyping’ for user testing, resonance, and insight identification with target audiences in the span of a semester.

“Statistically, one of us will die in the next 10 years. Then, statistically, the other will remain in this big house for another 10 years, increasingly dependent on our children and the government. Then one day, the children will become impatient...and they’ll find a more institutional setting for us where we’ll have ‘company, support, and attention’, but it won’t necessarily be what we want. And by that time, we’ll be too weak and tired of burdening our children to object to whatever they come up with. And we’ll live out our lives there, dependent and unhappy.”


This semester we look deeply at the links between aging and architecture. We will read and understand references that frame this problem and analyze existing disciplinary ideas and solutions. We will generate a problem statement as a class that identifies gaps for design. We will speak to people who understand this problem intimately. We will generate solutions and build them at 1:1. We will test these on experts and those that might benefit - for impressions of feasibility and desirability. We will listen to what they say & present insights on a future architecture for aging.

Course Topic: Design Build Workshop
Course Code: ARCH 570 003
Instructor: John McMinn
Day/Time: Wednesday 2:00-5:00pm LOFT GALLERY

Graduate student spots: 10

The First Nations / University of Waterloo Design Build program (Grand Studio) engages with the cultural history of the Grand River valley and the relationship to land, natural habitat and the cultural heritage of the Anishinaabe peoples whose territory this has been for millennia, as well as the Haudenosaunee peoples who have lived here since the late 18th century. The courses offered in the program provide an opportunity for students to work directly with Indigenous communities, collectively developing a design, carrying it through to completion of construction documents, then subsequently testing and refining the project through prototyping, final prefabrication and on-site construction of a full scale permanent structure. Most projects run with a two-part course sequence in Fall and Spring terms, with Fall being dedicated to design and prototyping, and Spring term dedicated to pre-fabrication of structural elements within the School, followed by on-site construction within the given First Nations community.

During this course, for the Fall term 2019, students will be involved with the second phase of our work with the Mississaugas of the Credit First Nation, near Hagersville Ontario. We will be developing a Masterplan for a new Green Willow Cultural Site, that will incorporate a Cultural Interpretation Centre, a re-created historic Woodland Village and a new enlarged Pow Wow Grounds, along with tenting, ‘glamping’ and RV campground, as well as site service buildings, store, dining facilities and a band shell stage facility. We will also be working in conjunction with Engineering graduate students who will be responsible for the structural design of the 40’ diameter pow wow arbor, and prototyping digitally fabricated parts of the grid shell lamella structure of the pow wow arbor will be incorporated into the course program. The term will start with a Community Engagement Charrette, assisted by graduate students in the UW Department of Planning learning about community objectives for the new Green Willow Cultural Site.

Both the School of Architecture building in Cambridge and the University of Waterloo main campus, sit within the Haldimand Tract, which extended 6 miles on either side of the Grand River, from Lake Erie to its headwaters, ceded to the Haudenosaunee confederacy in 1784. The remaining territory of the Haldimand Tract is the Six Nations of the Grand River reserve. In the complex evolution of treaty lands, the Mississaugas of the Credit First Nation who we’ll be working with for the duration of this course, have shifted locations during the last century and now reside adjacent to the Six Nations Reserve near Hagersville on a small portion of the original Haldimand Tract.

Design Build allows us to explore how architectural design and building can play a role in strengthening the growth and goals of communities and cultures. Despite surrounding us, First Nations culture remains elusive from every day experience for many of us. The Design Build program responds, in addressing our situation of occupying treaty lands, taking on the opportunity of working
with First Nations community groups, contributing to the momentum of the reconciliation movement and offering students the opportunity to participate in the design and construction of a full scale permanent building, that contributes to local First Nations community infrastructure.

Course Topic: Amphibious Architectures  
Course Code: ARCH 570 004  
Instructor: Elizabeth English  
Day/Time: Wednesday 6:30-9:30pm ARC 2026

Graduate student spots: 10

There is increasing awareness that traditional flood-mitigation strategies that alter the environment and create concentrations of risk, such as building dams, dikes and levees, only increase the probability of catastrophic consequences of failure in the long run. Amphibious architecture is a strategy that can reduce the hazard vulnerability of flood-prone regions and increase their long-term disaster resilience, with minimal adverse environmental impact.

Amphibious architecture refers to buildings that sit on dry land like ordinary buildings except when there is a flood, in which case they are capable of rising and floating on the surface until the floodwater recedes. This is a strategy that has already been applied successfully to housing in the Netherlands and in rural Louisiana. Current investigations are underway to assess its potential as a superior flood mitigation strategy for coastal Louisiana, Jamaica, Vietnam and northern Canadian First Nations. These sites are all either deltaic or riverine locations where occasional flooding is anticipated to worsen with the rising sea level and increasing weather intensity that are expected to accompany global climate change. We will be exploring the use of amphibious housing as a possible flood mitigation strategy for locations around the world where floods, be they coastal or riverine, affect vulnerable low-income populations.

Students will engage in a sequence of background readings followed by research/design projects that involve the development of site-specific, culturally appropriate amphibious housing designs for locations around the world where flooding events may be habitual and debilitating and/or rare but catastrophic. Term project requirements will include research, design development, class presentations and project documentation.

Course Topic: MATERIAL SYNTAX – 3D Clay Printing of experimental façade components  
Course Code: ARCH 684 001  
Instructor: David Correa  
Day/Time: Wednesday 6:30-9:30pm ARC 2008

Graduate student spots: 20

"Through most of history, matter has been a concern of metaphysics more than physics, and materials of neither. Classical physics at its best turned matter into mass, while chemistry discovered the atom and lost interest in properties . . . [In both metaphysical speculation and scientific research] sensitivity to the wonderful diversity of real materials was lost, at first because philosophical thought despised the senses, later because . . . the new science could only deal with one thing at a time. It was atomistic, or at least, simplistic, in its very essence." Cyril Stanley Smith. Matter Versus Materials: A Historical View. In A Search for Structure. (MIT Press, 1992). p. 115

Building from the micro-structure of material, the process of materialization to the functioning form, this course will challenge students to design an experimental façade building component at full scale. Conceived of as a hands-on concise design project of a façade element (3DP masonry component), the course will look at Making as an emergent and non-linear design process through direct engagement with additive material processes.

"In biology material is expensive but shape is cheap. As of today, the opposite was true in the case of technology." Julian Vincent

Operating as a small experimental micro-studio, the course will consist of introductory/foundational lectures followed by weekly design crits and hands on experimentation with digital clay 3D printing. Due to equipment and material limitations, students are required to work in groups. No previous experience with 3D printing or digital fabrication is required. This course has been developed as part of a research collaboration with MasonryWorx into innovative masonry components.
Interest in materials to inspire curiosity and a strong interest in challenging design boundaries are assets for this course.

**Course Topic: Inner Architecture**  
**Course Code:** ARCH 684 002  
**Instructor:** Andrew Levitt  
**Day/Time:** Wednesday 9:30am-12:30pm ARC 2026

Graduate student spots: 20

The built world and the inner world are linked, and have the potential to touch us through the act of design. The inspiration, creativity and meaning we need as architect’s is readily available, but we have not always been given the inner tools to help us bring them into the built world. The purpose of this elective is to connect designer’s with new pathways and creative tools for bringing creative instincts, empathy and architectural imagination into the world. In particular, cognitive strategies that focus on creativity and imagination will be explored. A primary goal of this course is to present a psychological view of the built world in order to help architects understand the wisdom of their dreams, shadows and body during the process of design. Its in-depth approach allows the student architect to experience the act of design as a process inseparable from enriching the self.

**Course Topic: Competitions in Architecture**  
**Course Code:** ARCH 686  
**Instructor:** Terri Boake

This course provides an opportunity for the student to independently engage in the respected tradition of the Architectural Competition. The competition entry and accompanying research paper must focus on the use of architectural precedents as the basis for the creation of typologically based propositions. Submission to the external competition is mandatory, the timing and detailed requirements of which will determine one part of the academic requirements for this course. A student must develop a course outline, consisting of an outline for the research paper (including a preliminary bibliography), and the competition brief. Both the professor in charge, and the Graduate Officer, must approve the outline in advance of the term in which a student plans to take the course. Once approved a permission number will be provided for enrolment. For various competitions and further information visit [http://www.tboake.com/384-comp.html](http://www.tboake.com/384-comp.html)