

Ecologies of Technologies: **Institute for Human Rights, Values & Vision**



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*"Things are going to slide, slide in all directions
Won't be nothing
Nothing you can measure anymore
The blizzard, the blizzard of the world
has crossed the threshold
and it has overturned
the order of the soul."
Leonard Cohen, *The Future*, 1992*

Instructors:

Dr. Brian R. Sinclair (Course Manager)
Professor Marc Boutin
Professor Keir Stuhlmiller
Professor Alan Collyer

Monday, Tuesday, Wednesday & Friday | 14:00-17:50

Preamble

*"In a world in which terms such as 'civilized' and 'civilization' have been monopolized and abused, why continue employing such concepts? In an age of globalization and clash of cultures, how can we distinguish between human rights and human wrongs, moral rectitude and technological supremacy? Finally, how can we build a global civilization that is inclusive rather than exclusive, unifying rather than divisive, celebrating diversity rather than homogenizing, upholding democracy rather than hegemony, promoting equity and justice rather than monopolies and exploitation?"
Dr. Majid Tehranian, *Informatic Civilization: Promises, Perils, Prospects*, 2002.*

Our modern world is highly complex, with countries and cultures routinely colliding with both positive and negative consequences. Resources are depleting, pollution is increasing, uncertainty is commonplace and crises are escalating (in frequency and severity). Our planet is now more urban than rural, with significant opportunities and spectacular obstacles falling onto the doorsteps and into the hands of environmental design professionals. The problems of our contemporary ethos are no longer the exclusive dominion of politicians, with growing responsibilities now shifting beyond formal governance mechanisms into realms of academia, the professions, non-governmental organizations and citizens. The pervasive spread of social media and the realities of a rapidly connecting world call for new, inventive and effective ways of tackling wicked problems. Architecture and design stand as viable vehicles for adding value to the mix. The need to move from a climate of conflict and the waging of wars into a culture of peace seems logical yet elusive. Cooperation is critical. Knowledge is needed. Wisdom is essential. Dialogue is vital. Design is potent. Education is empowering. H.G. Wells once noted that "Civilization is a race between education and catastrophe". The present studio calls for a dramatic [re]-consideration of civilization, including investigation into ways through which a more productive and demonstrable

Human Rights, Shared Values + Common Vision can transpire – physically, politically, psychologically, sociologically, culturally, spiritually, and so on. Civility, peace and accordance are key goals.

Humans employ a wide range of technologies and systems in their creation and modification of environments; included in this are the many technologies involved in the design, construction, and inhabitation of buildings and their related environments. In this studio, the design of a building and its systems, including interrelationships with context (site, climate, regulatory structures, customs, etc.), are explored through the comprehensive development of spatial, structural, enclosure, and environmental systems.

Providing for Human Rights, Shared Values and a Common Future

“The legal breakthrough for human rights treaties came in the last decade of the 20th century. Virtually every country in the world now has ratified at least one human rights convention and as a result human rights have become a universal legally binding concept.”

The Face of Human Rights, 2004

“The root cause of violence may be found in alienation, dualism, and antagonism generated by systemic marginalization of vast segments of the world population.”

M. Tehranian + D.W. Chappell, A New Peace Agenda for a New Millennium, 2002

The Comprehensive Studio in Winter 2018 considers the design of an innovative ‘think tank’ building that embodies and celebrates Human Rights, Values + Vision. The facility will be a 2000 m² ‘education, research, administration & cooperation|collaboration|conversation oriented architectural complex that brings together key players in a spirit of talking, learning, sharing and understanding. The non-profit centre will include a rich mix of uses, users, places and spaces, with key components including education, research, interpretation, communication, socialization and the promotion of peace. Located in Calgary, Alberta, Canada, a city characterized by its youthfulness, enthusiasm and innovation, the facility will prove a meeting place for dialogue, collaboration and invention. The architecture & design of the building must facilitate and promote the purposes and aspirations of the initiative while concurrently serving as a model of creativity, originality, integration and sustainability. Inciting provocation should be coupled with instilling cooperation.

Site & Program

The Institute for Human Rights, Values + Vision, an approximately 2000 m² (gross area +/- 10%) education, research, administration & think-tank facility, will be located in Calgary’s downtown area. This site was carefully determined to provide strong access to transit and the core, to afford rich opportunities for design exploration, and to offer possibilities for identity, branding and high exposure. The architectural programme for the facility acknowledges the importance of innovation, the potential of design + space to influence behaviour (e.g., catalyzing discussion), and the value of a diversity of both uses & users. This site, being intensely urban and undeniably connected to the heart of the city, demands resourcefulness, sensitivity and skill in order to achieve an ethos conducive to protecting human rights, promoting shared values and shaping future vision. Detailed site information and programmatic requirements for the facility will be distributed separately.

Objectives

The emphasis of the comprehensive design studio is especially on the cultural and environmental (i.e. sustainability) potential of novel design and building technologies. The studio will explore the relationships between architectural form, its tectonic and material articulation, its cultural resonance and its environmental impacts. The basic curricular objective is the overall formal, spatial, and tectonic resolution of a moderately complex building (Institute of Human Rights, Values + Vision) of approximately 2000 m², situated in an urban context, including appropriate allocation of the program, resolution of circulation and proper means of egress, as well as a basic articulation of building structure, environmental systems, assembly, and envelope, and adherence to the building codes. Equal consideration will be given to user needs and human dimensions, including environmental perception, symbolism and meaning, ergonomics and adaptability, cultural sensitivity and place-making.

This studio will operate in parallel and will be closely coordinated with the building technology courses. Beyond designing and representing a building, students are expected to develop fully integrated building systems and learn the basics of technical documentation. Building structures, construction assemblies, environmental systems, and energy and resource use will be an important part of research and experimentation in the studio. It is expected that some form of performance feedback will be part of the design explorations.

Requirements

In addition to normative drawings (plans, sections, elevations) and digital 3D models and renderings, various physical scale models may, at the instructor's discretion, be expected at specific stages. In addition to a developed design of the project's spaces and areas, its structural and environmental systems will have to be sufficiently articulated and adequately documented. A selected segment of the building's envelope will be developed and modeled in greater detail. Landscape is an integrated component of the project.

Grading

Reviews will occur at the end of each assignment and grades will be given at each of those points. Grades will be cumulative through the semester, and will count according to time allotment for each assignment. Students are expected to meet all requirements for each assignment to receive a passing grade. In general grades will be based on the following (depending on the topic and the assignment): development (process) 30%, conclusion (product) 30%, presentation 30%, attendance and participation 10%. Final grades will be reported as letter grades, with the final grade calculated according to the 4-point range.

NOTE: If a student receives a grade less than B- for any assignment worth 30% or more, the student will receive an F grade for the course.

| 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: 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>

Schedule

Weeks 1 – 4 Conceptual Design (including site analysis, interpretation & planning)

February 02 (F) Review (10% of the final grade)

Weeks 5 – 8 Design Development

February 19-23 Family Day and Block Week (no studio)

March 02 (F) Mid-term Review (25% of the final grade)

Weeks 9-11 Design + Integration of Building Systems

March 28 (W) $\frac{3}{4}$ Review (25% of the final grade)

Weeks 12-13 Technical Documentation (Final Documentation)

April TBD Final Review (40% of the final grade)

Note: The schedule is subject to change. All review dates are tentative. Various phases of the project will be completed according to a closely coordinated schedule with building technology classes.

CACB Student Performance Criteria

The following CACB Student Performance Criteria will be covered in this course at a primary level (other criteria will be covered at a secondary level): A5: Collaborative Skills; B1: Design Skills; B2: Program Preparation; B3: Site Design; B4. Sustainable Design; B5. Accessibility; B6. Life Safety; B7: Structural Systems; B8. Environmental Systems; B9. Building Envelope; B10. Building Services; B11. Building Materials; C1: Detailed Design Development; C2. Building Systems Integration; C3. Technical Documentation; C4. Comprehensive Design. (see CACB SPC matrix for further details)

Recommended Textbooks

Pallasmaa, Juhani. *The Thinking Hand: Existential and Embodied Wisdom in Architecture*. (AD Primers Series). John Wiley & Sons: West Sussex, UK. 2009;

Allen, Edward and Iano, Joseph. *The Architect's Studio Companion: Rules of Thumb for Preliminary Design* (Fourth Edition). New York: Wiley, 2006.

Human Rights:

Kalin, Walter, Muller, Lars and Wyttenbach, Judith (Editors). *The Face of Human Rights*. Lars Muller Publishers: Switzerland. 2004.

Supplementary Reading

The City:

Biswas, Ramesh Kumar (Editor). *Metropolis Now! Urban Cultures in Global Cities*. SpringerWein: New York, 2000.

"Metropolis Now". *Foreign Policy: Global Politics, Economics & Ideas*. September/October 2010. Especially article: "Beyond City Limits" by Parag Khanna. Pp 120-128.

Bridge, Gary and Watson, Sophie (Editors). *The Blackwell City Reader (2nd Edition)*. Wiley-Blackwell Publishing: West Sussex, UK. 2010

Clear, Nic (Editor). "Architectures of the Near Future". *Architectural Design*. September/October 2009. Profile No. 2010. John Wiley & Sons: West Sussex, UK.

Lahoud, Adrian, Rice, Charles and Burke, Anthony (Editors). "Post-Traumatic Urbanism". *Architectural Design*. September/October 2010. Profile No. 207. John Wiley & Sons: West Sussex, UK.

Knox, Paul L.. *Cities and Design: Critical Introductions to Urbanism and the City*. Routledge: New York, 2011.

Mostafavi, Moshen and Doherty, Gareth Editors | Harvard University Graduate School of Design). *Ecological Urbanism*. Lars Muller Publishing: Baden Switzerland. 2010.

Theory, Practice & Process:

Reiser, Jesse and Umemoto, Nanako. *Atlas of Novel Tectonics*. New York: Princeton Architectural Press, 2006.
 Sakamoto, Tomoko, Ferre, Albert and Kubo, Michael (Editors). *The Yokohama Project*. Barcelona: Acta, 2003.
 Sinclair, Brian R. Culture, Context, and the Pursuit of Sustainability: Contemplating Problems, Parameters, and Possibilities in an Increasingly Complex World. In *Planning for Higher Education*, Ann Arbor: Oct.-Dec. 2009. 38-1, pp. 6-22.
 Sinclair, Brian R. Integration | Innovation | Inclusion: Values, Variables and the Design of Human Environments. *Cybernetics and Systems: An International Journal*, 46:6-7, pp 554-579, 2015.

Design | Construction Methods, Delineation & Communication:

AIA, *Architectural Graphic Standards* (11th edition). New York: Wiley, 2007.
 Allen, Edward and Iano, Joseph. *Fundamentals of Building Construction: Material and Methods* (Fifth Edition). New York: Wiley, 2009.
 Brock, Linda. *Designing the Exterior Wall: An Architectural Guide to the Vertical Envelope*. New York: Wiley, 2005.
 Brookes, Alan and Grech, Chris. *The Building Envelope and Connections*. Butterworth, 1996.
 Ching, Francis DK. *Architectural Graphics* (5th edition). John Wiley: New York 2009.
 Ching, Francis DK. *Architecture: Form, Space & Order*. (3rd edition). John Wiley: New York 2007.
 Ching, Francis DK. and Winkel, Steven. *Building Codes Illustrated: A Guide to Understanding the 2006 International Building Code* (2nd edition). New York: Wiley, 2006.
 Ching, Francis DK. and Adams, Cassandra. *Building Construction Illustrated* (3rd edition). New York: Wiley, 2003.
 Hegger, Manfred et al. *Construction Materials Manual*. Basel: Birkhauser, 2006.
 Hegger, Manfred et al. *Energy Manual: Sustainable Architecture*, Basel: Birkhauser, 2008.
 Herzog, Thomas, *Façade Construction Manual*. Basel: Birkhauser, 2005.
 Kaltenbach, Frank. *Detail Practice: Translucent Material: Glass, Synthetic Materials, Metal*, Birkhauser, 2004.
 Knack, Ulrich et al, *Facades: Principles of Construction*. Basel: Birkhauser, 2007.
 Lechner, Norbert. *Heating, Cooling, Lighting: Sustainable Design Methods for Architects*. New York: Wiley, 2008.
 Oesterle, Eberhard. *Double-Skin Facades: Integrated Planning*. 2001.
 Schittich, Christian. *Glass Construction Manual*. Basel: Birkhäuser, 1999.
 Schittich, Christian. *Steel Construction Manual*. Basel: Birkhäuser, 2000.
 Schittich, Christian. *Building Skins: Concepts, Layers, Materials*. Basel: Birkhäuser, 2001.
 Sinclair, Brian R. Devising Design: Agility, Aptness, Equilibrium, Imperfection. Pp 41-58. In: *Building Dynamics: Exploring Architecture of Change* (Editors: B. Kolarevic + V. Parlac). Routledge: London, 2015.
 Weller, Bernhard et al. *Glass in Building: Principles, Applications, Examples*. Basel: Birkhauser, 2009.
 Wiggington, Michael. *Intelligent Skins*. Architectural Press, 2002.
 7group and Bill G. Reed. *The Integrative Design Guide to Green Building: Redefining the Practice of Sustainability*. New York: Wiley, 2009.

Special Budgetary Requirements

Special budgetary requirements are limited to the optional purchase of course readings and, in specific courses, mandatory supplementary fees to cover certain expenditures, such as field trips. Mandatory supplementary fees must be approved by the University prior to implementation.

Optional: For certain courses students may be given the option of purchasing course readings. In these cases the cost of the reading package should be stated in the course outline. When course readings are available for purchase, a minimum of two copies of the readings must be made available at the EVDS Reception.

Mandatory: The University has approved supplemental fees for the following courses:

2017/2018 SUPPLEMENTARY COURSE FEES

| | |
|---|----------|
| ARST 484/EVDA 580 - Studio I Design Thinking | \$150.00 |
| ARST 444/EVDA 582 - Studio II in Architecture | \$150.00 |
| EVDA 682.02 – Intermediate Studio | \$150.00 |
| EVDA 682.04 - Comprehensive Arch. Studio | \$150.00 |
| EVDA 782 - Senior Arch. Studio (all Calgary sections) | \$150.00 |
| EVDL 667 – Landscape Architecture Studio I | \$150.00 |
| EVDL 668 – Landscape Architecture Studio II | \$150.00 |
| EVDL 777 – Senior Research Studio in Landscape Architecture | \$150.00 |
| EVDS 620 – Urban Design Studio | \$150.00 |
| EVDS 640 – Regional Planning Studio | \$90.00 |
| EVDP 626 – Landscape Planning and Ecological Design | \$100.00 |
| EVDP 644 – Advanced Professional Planning Studio | \$150.00 |

Important 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/>).

Contact & Office Information

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Please contact instructors with any questions or concerns. Meetings by appointment.



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