



ARCH 5116.03 Social Theory and Design

This seminar course surveys contemporary theories of design from a social science perspective. It focuses on the literature of Actor-Network Theory, evidence-based design, appropriate design, spatial analysis, participatory design, technological innovation and the mapping of controversies. The student is asked to be familiar with the literature through seminar discussions and develop an argument for a particular aspect of theory.

Seminar format. Class time Thursday 2:30 pm - 5:30 pm — ted.cavanagh@dal.ca hours — by arrangement generally on Wednesday.

As an approach to thesis, consider the theoretical basis to your design work. This course looks at one possible approach emphasizing the consequences of architecture rather than intent, things rather than ideas. Two fields — design studies and technology studies — have huge potential for architects. They study what we do. This course introduces the theories of some who study what we do.

The emphasis is on theories about the act of designing and building, the process of architecture. Thus, it sets aside (valid) theories in architecture such as semiotics that deals with meaning, phenomenology that deals with perception, or the intellectual history of architecture with a capital “A”. Also, it sets aside theory based on the building program such as education for school buildings or ecology for landscape projects.

In part, this course focuses on Actor-Network Theory which emphasizes process and relationships by closing the subjective/objective distinction. Buildings are actors, they are both technical objects and subjective experience. They create hybrid relationships among them. Bruno Latour talks about things as actors, for example:

Let one of their representatives [of science or society] talk, for instance, about the ozone hole, another represent the Monsanto chemical industry, a third the workers of the same chemical industry, another the voters of New Hampshire, a fifth the meteorology of the polar regions; let still another speak in the name of the State; what



does it matter as long as they are all talking about the same thing, about a quasi-object they have all created, the object-discourse-nature-society whose new properties astound us all and whose network extends from my refrigerator to the Antarctic by way of chemistry, law, the State, the economy, and satellites.

In this course, we will explore the intuition that architecture is one of these subject/object networks and that the theories of ANT might align with our field in a way that is both insightful and useful.

Learning Objectives: Students learn about the relevance of the fields of design studies and technology studies. Through some of its leading scholars, this course introduces questions about architecture (and how architects operate) that are important to sociologists. Students learn how to unpack the implicit assumptions found in the design studio, and in architecture generally. The content and critical insights from this course are the first steps to formulate a design statement based in theory, a required part of your future architectural thesis.

Four topic areas:

Participatory and Appropriate Design: Design and construction operate in social contexts, conditioned by the circumstances of their development. This topic attempts to frame the politics of architecture by raising issues of participation, inclusion, initiation and consent. Who designs and for whom? This is a fundamental question behind universal, feminist, and ecological design. Further, answering this question defines what is meant by alternate design, participatory design, and appropriate design.

Situated Spatial Analysis and Evidence-based Design: Buildings operate in social contexts and create social circumstances. Science Studies have a foundation in analyzing laboratories to understand the social space of scientists. As such, and more generally, buildings are evidence of particular sets of relationships between individuals and between social groups. Evidence-based design assesses buildings in terms of social and physical performance with an aim to influence future design. Sociologists study the built object and architects can learn about the consequences of their work.

Technological Innovation and Making: Technology is socially constructed; innovation requires social acceptance. In other words, technologies might have been or could be otherwise. Since there is no predetermined, singular, right answer to a technological problem, then technology can be considered as alternate, appropriate, or participatory; and as situated or spatial. Further, what is innovation and what is maker culture? Are there persistent or transformative technological paradigms?

Design Communication and Mapping Controversies: There is a web of inter-connections between experts — architects, consultants, builders, and manufacturers — and between experts and the public. Architects are charged with leading or facilitating this web of oral, written or graphic communication. In moments of crisis and during controversies there is a heightened awareness of decisions being made. Design Studies has developed techniques to map and analyse roles and associations that occur on various issues.

summary of class meetings

Week 1 - Thursday, May 07
Week 2 - Thursday, May 14
Week 3 - Thursday, May 21
Week 4 - Thursday, May 28
Week 5 - Thursday, June 04
Week 6 - Thursday, June 11
Week 7 - Thursday, June 18
Week 8 - Thursday, June 25
Week 9 - Thursday, July 02
Week 10- Thursday, July 09

(all 2:30 - 5:30 Atlantic Daylight Time)

introduction
discussion — be ready to present your bibliographic survey.
seminar on Participatory and Appropriate Design
seminar on Situated Spatial Analysis and Evidence-based Design
seminar on Technological Innovation
seminar on Mapping Controversies
workshop on relating class topics to design statements
Bring draft version of paper. Discuss and work on the paper in class.
Presentations of your paper are 20 minutes.
discussion — summary of the course

Note: For this 3-credit-hour course, an average of 9 hours per week is expected for all course-related activities, including classes. SRIs scheduled during class July 9.

This course is structured by a single research trajectory in three stages 1) survey all the topic areas, 2) develop proficiency in one topic area, and 3) explore, in essay form, a critical issue in the topic area.

1) **Write a report:** Using the four topic areas, write a bibliographic survey of the material, add a written review of the substance (arguments, issues, author networks, ...). One page for each topic plus bibliography. You can work in groups of two if you wish. Draft due May 14 for class, final report due Monday May 25.

2) **Lead a class seminar:** You will lead a one-hour topical seminar in one of four topic areas. Each topic may have multiple seminars. Readings are drawn from the course list and from the bibliographic surveys. The seminar analyzes all bold readings in the topic area + others from the list + reading footnotes. Then the seminar organizer leads the class in a discussion about a series of questions related to the topic area. At the seminar, distribute an updated bibliographic survey and submit your slide presentation on Brightspace. (see schedule)

3) **Write a paper:** Write a 3000 word essay, footnoted and with bibliography (tinyurl.com/dal-arch-writing). The topic should focus on one issue that is part of one of the four topic areas. One suggestion is to concentrate on one or two footnotes from one reading. Whatever the topic, develop the essay delving deeper into the topic; avoid papers based entirely on broad surveys or building descriptions. Argumentation should involve theory and attempt to advance a critical position while being grounded in architecture. Distribute an electronic copy to each classmate and instructor by 5pm, June 30 for response during presentations on July 2.

+ **Design statement workshop:** Bring in a current or past design project including design statement. Arrange for a classmate to review. In a 10 minute presentation, compare their design work with their design statement. State your theoretical position and critique both the statement and the work. Suggest modifications to their work or statement. Explain.

Late Submission An extension to a due date requires a Student Declaration of Absence (up to three days) or a medical note (more than three days); otherwise, a late assignment will be deducted a third of a letter grade (e.g., from A to A-) per weekday. Plagiarism software is used.

CACB Student Performance Criteria: The BEDS/MArch program enables students to achieve the accreditation standards set by the Canadian Architectural Certification Board. They are described at <https://tinyurl.com/cacb-spc-2017> (pages 14–17). This Dalhousie ARCH course addresses the CACB criteria and standards that are noted on the "Accreditation" page of the School of Architecture website: <https://tinyurl.com/dal-arch-spc>.

University Policies and Resources: Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people. This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate. See the School's "Academic Regulations" page (tinyurl.com/dal-arch-regulations) for links to university policies and resources:

- Academic integrity
- Accessibility
- Code of student conduct
- Diversity and inclusion; culture of respect
- Student declaration of absence
- Work safety
- Writing Centre https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html
- Copyright Office <https://libraries.dal.ca/services/copyright-office.html>
- Library <http://libraries.dal.ca>
- Study Skills/Tutoring http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Important Dates in the Academic Year (including add/drop dates) http://www.dal.ca/academics/important_dates.html

Sexualized Violence Policy https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html

Scent-Free Program <http://www.dal.ca/dept/safety/programs-services/occupationsafety/scent-free.html>

General Academic Support – Advising https://www.dal.ca/campus_life/academic-support/advising.html

Student Health & Wellness Centre https://www.dal.ca/campus_life/health-and-wellness.html

Indigenous Student Centre https://www.dal.ca/campus_life/communities/indigenous.html

Elders-in-Residence (program provides students with access to First Nations elders for guidance, counsel and support.) <https://www.dal.ca/academics/programs/undergraduate/indigenous-studies/a-day-in-the-life/elders-in-residence.html>

Black Student Advising Centre https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre http://www.dal.ca/campus_life/student_services/international-centre.html

South House Sexual and Gender Resource Centre <https://southhousehalifax.ca/about/> -5-

LGBTQ2SIA+ Collaborative <https://www.dal.ca/dept/hres/education-campaigns/LGBTQ2SIA-collaborative.html>

Dalhousie Student Advocacy Services <http://dsu.ca/dsas>

Dalhousie Ombudsperson https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Human Rights and Equity Services <https://www.dal.ca/dept/hres.html>

Evaluation: Grading is done by the course instructor. All work is graded individually, including work in pairs. Response to seminars and draft papers is oral, in class, and response to final papers is written based on the rubric below. University grade standards and scale for converting numerical to letter grades (tinyurl.com/dal-grading). Participation will be judged on the seminar classes (not including the one you lead). Prepare for those classes, by becoming familiar with the argument and the abstract of five readings in the topic reading list.

| Component | 5 Points | 4 Points | 3 Points | 2 Points | 1 Point | 0 Pts | weight | Max. Pts |
|---|---|---|--|--|--|----------------------|--------|----------|
| bibliographic surveys [draft 5, final 5] and seminar presentations [30] (individual) | Content is complete, relevant & accurate. An exceptional command & depth of the material is presented in a logical & organized manner. More than one aspect of the content shows good critical thinking or an original perspective. Outstanding oral presentation skills and engagement of class. | Content is complete, relevant & accurate. A few minor pieces of information may be missing, but command & depth of the material is presented in a logical & organized manner. Some aspect of the content shows good critical thinking or an original perspective. Very good oral presentation skills and engagement of class. | Content is appropriate. Although some information may be missing, or irrelevant material included, adequate command of material is demonstrated. The content may lack or fail to maintain focus and may be disorganized. The content shows some thought about the information. Adequate oral presentation and engagement of class. | Some content is inappropriate. Marginally adequate command of the material is demonstrated. Important pieces of information are missing, or irrelevant material included. The content is disorganized and is not presented in a way that maintains focus. Weak oral presentation skills and engagement of class. | Content is weak because material is omitted, inaccurate or marginally relevant, demonstrating limited understanding of the material and/or limited ability to apply the material. Organization is a problem. Major deficiencies in oral presentation skills. Class is not engaged. | components absent. | 8 | 40 |
| individual participation in others seminars, workshops, and design statement discussion | Informational content, presentation style, level of engagement, quality of activities provided & class discussion were outstanding. | Informational content, presentation style, level of engagement, quality of activities provided & class discussion were very good. | Informational content, presentation style, level of engagement, quality of activities provided & class discussion were adequate. | Informational content, presentation style, level of engagement, quality of activities provided were weak. | Informational content, presentation style, level of engagement, quality of activities provided & class discussion had major deficiencies. | little participation | 2 | 10 |
| design statement workshop | outstanding ability to translate course theories into design, effective use of course material | full design possibilities of course theories were not realized, some misunderstandings | design possibilities of course theories were not realized, some significant misunderstandings | General misunderstandings and inability to translate theories into design | inadequate relationship between the course and the design statement | little attempt made | 2 | 10 |
| draft [10] and final [30] written paper (individual) | Content is complete, relevant & accurate. An exceptional command & depth of the material. Written in a logical & organized manner. Many aspects of the content show good critical thinking or an original perspective. | Content is complete, relevant & accurate. A few minor pieces of the argument may be missing, but command & depth of the material is presented in a logical & organized manner. Some aspects of the content show good critical thinking or an original perspective. | Content is appropriate. Although some pieces of the argument may be missing, or irrelevant material included, adequate command of the material is demonstrated. The content might fail in aspects of focus or logic and may be disorganized. | Some content is inappropriate. Marginally adequate command of the material is demonstrated. Important pieces of the argument are missing, or irrelevant material included. The content is disorganized and is not presented in a way that maintains focus. | Content is weak because material is omitted, inaccurate or marginally relevant, demonstrating limited understanding of the material and/or limited ability to apply the material. Organization is a problem. | components absent. | 8 | 40 |

Dalhousie Grading Practices Policy https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html Grade Appeal Process https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

Reading List: for seminar leaders — comprehensive understanding of bold entries is required, plus familiarity with argument and abstract of the others in the list (subject to change due to class numbers).

required text: ISBN: 978-1-444-35888-9 [ebook available at wiley.com]

Sismondo, Sergio. *An Introduction to Science and Technology Studies*, 2nd Edition. (Wiley Blackwell, Chichester UK, 2010).

Participatory and Appropriate Design

Andersen, Lars, Peter Danholt, Kim Halskov, Nicolai Brodersen Hansen & Peter Lauritsen "Participation as a matter of concern in participatory design," *CoDesign* 11,3-4 (2015): 250-261.

Bossen, C., Dindler, C., Iversen, O.S., 2010. User gains and PD aims: assessment from a participatory design project. In: Proceedings of the 11th Biennial Participatory Design Conference, 141–150.

Binder, Thomas, Eva Brandt, Pelle Ehn & Joachim Halse "Democratic design experiments: between parliament and laboratory," *CoDesign* 11,3-4 (2015): 152-165,

Cherkasky, Todd, "Design Style: Changing Dominant Design Practice," *Design Issues* 20,3 (2004): 25-39.

Fortun, Kim, "Environmental Information Systems as Appropriate Technology," *Design Issues* 20,3 (2004): 54-65

Guy, Simon and Elizabeth Shove, *A Sociology of Energy, Buildings and the Environment: Constructing Knowledge, Designing Practice* (London: Routledge, 2000).

Halskov, Kim, Nicolai Brodersen Hansen The diversity of participatory design research practice at PDC 2002–2012 *International Journal of Human-Computer Studies* 74(2015) 81 – 92, p.87.

Howard, Jeff, "Toward Participatory Ecological Design of Technological Systems," *Design Issues* 20,3 (2004): 40-53.

Lindström, Kristina & Åsa Ståhl, "Figurations of spatiality and temporality in participatory design and after – networks, meshworks and patchworking," *CoDesign* 11,3-4 (2015): 222-235.

Luck, Rachael. "Dialogue in Participatory Design." *Design Studies* 24 (2005):523–35.

Moore, Steven and Andrews Karvonen. "Sustainable Architecture in Context: STS and Design Thinking." *Science and Technology Studies* 21,1(2008): 29–46.

Nieusma, Dean, "Alternative Design Scholarship: Working toward Appropriate Design." *Design Issues* 20,3 (2004): 13-24.

Schoffelen, Jessica, Sandy Claes, Liesbeth Huybrechts, Sarah Martens, Alvin Chua & Andrew Vande Moere "Visualising things. Perspectives on how to make things public through visualisation," *CoDesign* 11,3-4 (2015): 179-192.

Schuler, Douglas and Aki Namioka, eds. *Participatory Design – Principles and Practices* (Hillsdale, NJ: Lawrence Erlbaum Association Publishers, 1993).

Tatum, Jesse S. "The Challenge of Responsible Design," *Design Issues* 20,3 (2004): 66-80.

Situated Spatial Analysis and Evidence-based Design

Galison, Peter & Emily Thompson (eds.) *The Architecture of Science* (Cambridge MA: MIT Press, 1999).

Gieryn, Thomas, "Instrumentalities of Place in Science and Art," in Helmar Schramm, Ludger Schwarte and Jan Lazardzig (eds), *Instrumente in Kunst und Wissenschaft: Zur Architektonik kultureller Grenzen im 17. Jahrhundert* (Berlin: Walter de Gruyter, 2005).

Ingram, Jack, Elizabeth Shove, and Matthew Watson, "Products and Practices: Selected Concepts from Science and Technology Studies and from Social Theories of Consumption and Practice." *Design Issues* 23,2 (2007): 3–16.

Johnson, Jim. "Mixing Humans and Nonhumans Together: the Sociology of a Door-Closer." *Social Problems* 35,3 (1988): 298–310.

Latour, Bruno and Steve Woolgar, *Laboratory Life: The Construction of Scientific Facts* (Sage, Beverley Hills, 1979).

Livingston, David, *Putting Science in its Place: Geographies of Scientific Knowledge* (Chicago University Press, 2003).

Technological Innovation and Making

Callon, Michel. "Techno-Economic Networks and Irreversibility." In *A Sociology of Monsters? Essays on Power, Technology and Domination*, edited by John Law, 132–161. London: Routledge, 1991.

Callon, Michel, "Society in the Making: The Study of Technology as a Tool for Sociological Analysis" in *The Social Construction of Technological Systems: New Directions in the ...* 1987): 77-98.

Harty, Chris, "Implementing innovation: designers, users and actor-networks," *Technology Analysis & Strategic Management* 22,3 (2010): 297-315.

Harty, Chris, "Implementing innovation in construction: contexts, relative boundedness and actor-network theory," *Construction Management and Economics* 26 (2008):1029–1041.

Harty, Chris, "Innovation in construction: a sociology of technology approach," *Building Research & Information* 33,6 (2005): 512-522.

Laurent, Brice & Martin Tironi, "A field test and its displacements. Accounting for an experimental mode of industrial innovation," *CoDesign* 11,3-4 (2015): 208-221.

Slaughter, E. Sarah. "Models of Construction Innovation." *Journal of Construction Engineering and Management* 124,3 (1998): 226-31.

Mapping Controversies

Kaarholm, Mattias. "Interobjectivity in Architectural Research and Theory: towards a meta-theory of materiality and the effects of architecture and everyday life" *Journal of Architecture* 19,1 (2014): 64 -80.

Latour, Bruno. *Science in Action: How to follow scientists and engineers through society.* (Harvard University Press, Cambridge MA 1987)

Steven Moore 1997. "Technology and the Politics of Sustainability at Blueprint Demonstration Farm," *Journal of Architectural Education* 51:1, 23-31.

Venturini, T. 2009. "Diving in Magma: How to Explore Controversies with Actor-network Theory." *Public Understanding of Science* 19 (3): 258-273.

Venturini, T. 2010. "Building on Faults: How to Represent Controversies with Digital Methods." *Public Understanding of Science* 21 (7): 796-812.

Yaneva, Albena, *Mapping Controversies in Architecture* (Ashgate, 2013).

General

_____, Special session "Doing Architecture, Accounting Society: Social Studies of Architecture Practices," EASST 2002, York, UK.

Akrich, Madeleine "The De-description of Technological Objects" in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Wiebe E. Bijker and John Law, eds. (Cambridge, MA: MIT Press, 1992): 205-224.

Callon, Michel, 'Le travail de la conception en architecture', *Situations Les Cahiers de la recherche architecturale* 37,1 (1996): 25- 35.

Fallan, Kjetil, "Architecture in action: Traveling with actor-network theory in the land of architectural research," *Architectural Theory Review* 13,1 (2008), 80-96.

Farias, Ignacio and Bender, Thomas, *Urban assemblages : how actor-network theory changes urban studies.* 2010 <<https://play.google.com/books/reader?id=F2P0TYWNZKUC&hl=en&pg=GBS.PA18.w.1.0.100>>

Gieryn, Thomas, "What Buildings Do," *Theory and Society* 31,1 (2002): 35-74.

Gieryn, Thomas (2006) 'City as Truth-Spot: Laboratories and Field-Sites in Urban Studies', *Social Studies of Science* 36(1): 5-38.

Latour, Bruno. 2008. "A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk)." In *Networks of Design*. Cornwall.

Law, John (1992). Notes on the theory of the actor-network: ordering, strategy and heterogeneity. *Systems Practice* 5(4): 379-93.

Storni, Cristiano, Thomas Binder, Per Linde & Dagny Stuedahl "Designing things together: intersections of co-design and actor-network theory," *CoDesign* 11,3-4 (2015): 149-151.

Storni, Cristiano, "Notes on ANT for designers: ontological, methodological and epistemological turn in collaborative design," *CoDesign* 11,3-4 (2015): 166-178.

Yaneva, Albena, *The Making of a Building: a pragmatic approach to architecture.* (Peter Lang, Bern, 2009).