Refreshing a Curriculum in Systems Thinking and Social Systems Designing for Learners in a Graduate Program

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Abstract: Since 2009, the "Understanding Systems" course has been foundational in a master's program at OCAD University. Content incrementally progressed with the rise of Systemic Design as a field, benefiting from ongoing research by Peter H. Jones. The assignment of a new instructor for winter 2025 presented an opportunity to adjust direction. Recognizing the legacy of successes in prior years, the changing contexts for the university, students, and technologies in 2025 encouraged transitioning the style and content of the course. An approach of *Contextural Appreciative Learning* extends Contextural Action Learning, with Inquiring Systems, and Appreciative Systems.

Keywords: systemic design, systems thinking, design thinking, graduate program, artificial intelligence

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Keywords: systemic design, systems thinking, design thinking, graduate program, artificial intelligence

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1 Introduction

The Winter 2025 session of "Understanding Systems" (SFIN-6011) was the fifteenth time the course has been offered at OCAD University. Systems thinking has been core to the master's program in Strategic Foresight and Innovation (SFI) since courses commenced in 2009.

"Our strategic innovation model … illustrates the integration of design, business, and futures thinking through systems thinking. This integration allows our students to move through an iterative design thinking process, understand the business context to ensure viability and develop deeper insights into the challenges a sector or organization might be facing through futures thinking. Systems thinking and mapping locates these complex challenges in a larger system and makes clear the patterns and interconnectedness of the issues; and visual thinking ensures more effective communication of complex data" (Richards, 2015).

In the earliest days, there were two courses listed: (i) "Understanding Systems" in Year One, Winter semester, and (ii) "Social Systems" in Year Two, Fall semester.

> **SFIN 6B02 Social Systems**
>
> In this introduction to complex systems, students will examine the dynamic arrangement of three interconnected and adaptive human systems; social, market and political. Developing the essentials of a systems approach, students will study structure, evolution, patterns of behaviour, and the impacts of change in these systems through case study review and systems model analysis. ….
>
> **SFIN 6B04 Understanding Systems**
>
> In this second course on systems thinking, students will study non-human systems, specifically the ecosphere, biosphere and technosphere. Applying systems thinking approaches, students will compare these natural and man-made systems and discuss methods for understanding and respecting their interdependencies and interactions. The nature of adaptive life systems will be studied as well as examples of the unintended and often negative impacts of human action. Significant technological inventions and their impact on human and societal development and on the environment will be discussed. …. (Ontario College of Art and Design, 2011).

In 2011, the two courses were combined into one. Jeremy Bowes originally led "Understanding Systems" with Peter Jones. The content gradually evolved, through to 2021-2024 with Lorraine Randell leading the course, and then relinquishing her role as instructor. Stephen Davies, having previously taught at OCAD U until 2019, was offered the assignment to lead this course. In fall 2024, a course design was collaboratively considered.

2 Approach: Contextural Appreciative Learning extends Action Research

As a research approach, Contextual Appreciative Learning has its roots in Action Research.

Action Research was developed at the Tavistock Institute for Human Relations from WWII. This approach brought together: (i) the integration of medical and social science disciplines; (ii) operational research; (iii) group dynamics; and (iv) applied anthropology.

> Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework (Rapoport, 1970, p. 499).

The approach evolved from psychoanalytic ideas and methods transferred to the social context, to "social consultancy" with research and therapeutic aspects.

> … action research can also be viewed as a cyclical process with five phases: diagnosing, action planning, action taking, evaluating, and specifying learning. The infrastructure within the client system and the action researcher maintain and regulate some or all of these five phases jointly (Susman and Evered, 1978, p. 588).

Variants of action research include diagnostic action research, empirical action research, and participatory action research.

Following the trail of Eric Trist into Socio-Ecological Systems theory (Ing and Metcalf, 2023), Action Research advanced along two threads: (i) Action Learning associated with Causal Texture Theory into Strategic Reframing in the Oxford Scenario Approach (Ramirez, 1983; Ramirez *et al.*, 2008; Ramirez and Wilkinson, 2016); and (ii) Contextural Action Learning incorporating Future Search (Franklin, 1998).

Paving an alternate path from Eric Trist, Contextural Appreciative Learning incorporates theories of (i) Inquiring Systems from C. West Churchman, and (ii) Appreciative Systems from Sir Geoffrey Vickers. Scenario planning and Future Search techniques are decoupled. For this scope, the redefinition of Contextural Appreciative Learning has five phases.

2.1 Recontextualizing

While Trist was a proponent of Open Systems Thinking, Churchman concurrently developed multiple perspectives inquiring systems that would sweep in additional knowledge (Churchman, 1971; Mitroff and Linstone, 1993). Organizations in turbulent fields may lag in their responsiveness or coupling to their environments. A recontextualizing phase aims to revisit the framing of the system of interest, and respond to both anticipated and unanticipated shifts in other influences.

2.2 Discerning

Vickers defined a human dynamic system where individuals continuously interpret, evaluate, and respond to their experiences. Three judgments are made in an appreciative field of settings in which individuals observe and communicate socially (Checkland and Cesar, 1986; Vickers, 1965).

> The exercise of appreciative judgment … has three components. The first is the making of reality judgments: those judgments concerning what is or is not the case -- ranging from basic cause-and-effect beliefs to more subtle and complex 'facts.' The second facet is the making of value judgments: those concerning what ought or ought not be the case -- including imperatives, wants and desires, prudential or self-interested considerations, and individual and collective goals and norms. The third is the making of instrumental judgments: those concerning the best means available to reduce the mismatch between is and ought -- including the personal resources of time, attention, intellect, passion, money, and power, along with those social resources that can be marshaled and applied (by influence or command) through communication, coalition, and access to social institutions (Adams *et al.*, 1995, p. xix).

The first of three settings comes through reality judgments. Discerning is a phase where the "state of the system" is judged on "facts" both through internal consistency and external validity.

2.3 Optioning

The second of three settings comes through value judgments. The decision to prioritize one option above another reflects human values in preferences, and faith that one combination of satisfactions can be enacted and governed.

> Reality judgments and value judgments are inseparable constituents of appreciation; they correspond with those observations of fact and comparison with norm that form the first segment of any regulative cycle, except that the definition of the relevant norm or complex of norms, like the identification of the relevant facts is itself a product of the appreciation. The relation between judgments of fact and of value is close and mutual; for facts are relevant only in relation to some judgment of value, and judgments of value are operative only in relation to some configuration of fact (Vickers, 1965, p. 54).

Policy making and execution may choose from a variety of features, solutions and/or time frames non-exclusively. Optioning is a phase where considerations of priorities are weighed, resulting in selection(s) or deselection(s).

2.4 Adapting

The third of three settings comes through instrumental judgments. The feasibility of "getting things done" involves balancing the variety of interests across multiple value systems. Know-how and know-when are expressed through expertise in gaining realistic appraisals of risks and limitations, integrating as solutions, and prioritizing to respond to needs in the present not self-defeating in a longer term. Adapting is a phase where willful action and/or patience for natural unfolding processes are exhibited.

2.5 Retrospecting

Reflecting on outcomes observed through Contextual Appreciative Learning incorporates the last two phases of the Action Research cycle: (i) *evaluating* collects the results of consequences of adaptive action; and (ii) *specifying learning* identifies findings that can become inputs to the next cycle.

A 2025 refresh of "Understanding Systems" is discussed below, in the phases of recontextualizing, discerning, optioning, adapting, and retrospecting.

3 Recontextualizing: Which influences might we attend to?

Systems thinking has been core to the SFI program since 2009. As a required foundational course, students have reported the experience as transformative and/or challenging. Without altering the course description for winter 2025, the immediate choices were (i) making minor increments to the legacy, or (ii) taking a discontinuous opportunity to restructure the content and sequencing.

3.1 The nature of the course had evolved with program growth and experience

In 2011, the systems courses represented 3 of 45 credits required for program completion. In 2015, the count became 0.5 of 9 credits (Ing, 2025a).

The SFI program "is the largest graduate program at OCAD University with an ongoing enrolment of over 100 students" (Richards and Harfoush, 2016, p. 188). The program started in 2009 primarily for part-time students, with classes clustered on Thursdays and Fridays that might accommodate full-time interest. In 2013, a full-time cohort was added to parallel the part-time stream, each targeting an enrollment of 22 students. Courses for the full-time cohort were initially split over semesters, and then in 2016 recombined to match the design for part-time students (Ing, 2025a). Across all graduate programs at OCAD U, the proportion of international students has increased, from 2019-2020 at 22% (62 international to 215 domestic), to 2023-2024 at 48% (135 international to 135 domestic) (OCAD University, 2024).

In the Appendix, Table 1 lists week-by-week topics for the course in 2010, 2015, 2018, and 2020.

For SFIN-6011 in winter 2025, there were 24 registrants for part-time sessions on Monday evenings, and 17 registrants for full-time sessions on Wednesday mornings. The part-time cohort included students across all Canadian time zones. The full-time cohort meeting in-person, in Toronto, included more international students.

3.2 A post-pandemic return to normalcy coincided with a new course leader

From 2011 through 2019, the course was taught collaboratively by Jeremy Bowes and Peter Jones. In 2020, with Bowes taking a sabbatical year, David Ing and Lorraine Randell backfilled his role. Ing had prior experience in designing and delivering systems courses at Aalto University (Ing, 2011, 2016) and at University of Toronto (Ing, 2018). This 2020 opportunity encouraged including new systems research under active development (Ing, 2020a, 2020b, 2020c, 2020d). Ten of 13 weeks of instruction were delivered, with pandemic closures by the university resulting in final assignments to be

completed online. For 2021 to 2024, the course was led by Randell, in a return to the 2019 weekly course outline. Jones became loosely associated with the course, with a new focus on the Design for Health program.

The 2021 and 2022 sessions were conducted online. While Randell felt that the course deserved revising, workload precluded revising the prior course design. Gaining new employment in mid-2024 with a full-time professional role, she declined to continue teaching.

In fall 2023, Jones became a full-time distinguished professor at Tecnológico de Monterrey in Mexico. Prioritizing continuity in Design for Health, his involvement in the Understanding Systems course reduced to informally providing advice.

Between 2014 and 2019, Stephen Davies had previously taught Strategy Development and Business Model Innovation in the SFI program. He was offered the opportunity to take over the Understanding Systems course.

3.3 Resources for the university remain tight

From 2010 to 2019, the course was staffed by two professors, each in half-time assignment. With one professor on sabbatical leave in 2020, his course load was covered by two part-time adjuncts, so that responsibilities were shared across three instructors. From 2021 to 2024, the course was handled by a single instructor who followed the 2019 syllabus. While incremental improvements occurred through evolution, resources for a major restructuring have not been a priority for the program.

Of 22 publicly funded universities in the province of Ontario, OCAD U was one of 10 operating in a budget deficit in 2024-2025 (Chiem and Orsini, 2024). At 57% of the national average, the Ontario government provides the lowest per-student provincial funding. In 2019, the government imposed a 10% cut to domestic tuition fees, a level continuing as frozen. OCAD U receives a grant of $7,200 per student FTE (Full Time Equivalent) from the Province of Ontario (Audit, Finance and Risk Committee, 2024). This compares to the BC funding of Emily Carr University of Art and Design of $14,900 per FTE (Ministry of Post-Secondary Education and Future Skills, 2024), and the Nova Scotia grant of $9,200 (Minister of Advanced Education, 2025).

These conditions encourage kinetic inertia, deprioritizing effort beyond the historical trajectory.

4 Discerning: Why is a factor now drawing attention?

Davies was previously an SFI instructor, but on courses parallel to the Understanding Systems course. Having received direct mentorship from Stafford Beer, his knowledge of management cybernetics is strong. However, SFIN-6011 has traditionally covered a broader range of alternative systems approaches, and involved guiding the visual design of Synthesis Maps that have become a renowned output from the course.

Based on prior experience from teaching the course in 2020, Ing volunteered to help shape the course. In fall 2024, the two met on a few afternoons to discuss options and alternatives for a major revision.

4.1 Contemporary Systems Research encourages multimethodology

Informal polling of SFI alumni on their memories of systems education recalled only (i) causal loop diagrams, and (ii) the leverage points of Donella Meadows. The domain has much greater breadth and history. A general criticism of 21st systems thinking practices is that they're stuck in the 1980s, while systems research has continued to advance (Ing, 2013).

Authentic approaches to systems recognize variety of perspectives, and methods embracing pluralism. Defining a system of interest typically involves boundary critique (Midgley, 2001; Ulrich, 2005). Recognizing the uniqueness of a situation and/or intervention in the wealth of systems approaches may call for a multimethodological approach (Jackson, 2019). A good introductory course should lead to an appreciation of the systems sciences with an explicit pluralistic stance, framed across multiple types of systems and multiple branches of sciences.

4.2 Systemic Design has evolved with RSD

In 2009, design thinking was posed as shifting along a complexity scale, from content towards process (VanPatter, 2009). Graduate design education had not yet adopted a post-disciplinary collaborative design skill for visual sensemaking. In 2019, 90% of methods were still being framed as design thinking were described as Design 1.0 (small-scale challenges, e.g. logos, posters, packaging) or Design 2.0 (medium-scale challenges (e.g. products, services, experiences) (VanPatter, 2020). Emerging practices are still needed for Design 3.0 (larger-scale challenges of organizations, systems, and industries) and Design 4.0 (giant-scale challenges of communities, countries, and/or planet).

The first Relating Systems Thinking and Design (RSD) symposium was convened in Oslo in 2012 (Sevaldson, 2012). Proceedings of the RSD4 conference in Banff were formalized into a Systemic Design book (Jones, 2018). OCAD U hosted RSD5 in 2016, with a return for RSD14 to Toronto for fall 2025. The community became formally incorporated in 2018 in Norway as the Systemic Design Association. Multiple streams and styles at the intersection of systems and designing have emerged since SFI was started in 2009.

Core to the development of systemic design has been visualization. Gigamaps are methods for Systems Oriented Design, encompassing multiple layers and scales to reveal relationships and interconnections more deeply (Sevaldson, 2011, 2018). Synthesis maps represent and analyze complex systems by integrating diverse perspectives and evidence into a cohesive narrative (Jones and Bowes, 2017). Each of these mapping approaches has developed from unique heritages, applying different research techniques.

The SFI program at OCAD U was an early adopter of the Systemic Design Toolkit, as its methods evolved in practice. Pilot testing was conducted at RSD5 in 2016, leading to an official release at RSD7 in 2018. Publication of a short boot culminated step-by-step guides (Jones and van Ael, 2022).

On a separate track in the UK, the Design Council published the Double Diamond in 2003, expressing common practices often applied in service design. Acknowledging the work of the Systemic Design Association and the practice of Transition Design, conversations were convened about transformational changes (Drew *et al.*, 2021). This led to a Framework for Innovation to tackle more complex social, economic, and environmental problems (Design Council (UK), 2023a). Their Systemic Design

Framework expands the Double Diamond for a methodology for Design for Planet (Design Council (UK), 2023b). This framework includes an alternative Systemic Design Toolkit.

The SFI program has been immersed in the progress of a major strand of systemic design. Alongside OCAD U, a large community of educators has developed alternative and complementary approaches with design courses strongly advancing systems thinking (Dubberly and Pangaro, 2023).

4.3 Interest in systems thinking continues to be locally strong

In addition to formal OCAD U activities, Toronto has a legacy of researchers and practitioners in the arts and sciences of systems. Systems Thinking Ontario, founded in 2012, continues to convene monthly meetings that connect both experts and novices in a welcoming atmosphere. Hosted primarily at OCAD U, the group was initiated with cooperation from faculty at York University and University of Toronto. Meetings in 2020 moved online due to distancing restrictions, reconvening in 2024 to in-person attenance.

SFI students have historically shared their learnings on synthesis maps in the summer months. Alumni, consultants, and curious learners are regular attendees. These events complement the formal university program with opportunities to explore methods and ideas at a deeper level.

5 Optioning: Which priorities are to be weighed?

Having decided for 2025 to redesign the course in a break from its longer history, many constraints surfaced. This introductory course on systems can lead to mindset shifts amongst students, within a term of only 13 weeks. In a similar program in Finland, systems thinking was covered in three courses over two years (Laurila, 2011, 2015). Reading week scheduled midway through the term gives students only a moment to catch a breath before resuming. While the capstone synthesis map is the primary deliverable by the end of the course, students require interim grading to ensure they're on track. Assignment due dates for parallel courses across SFI may be staggered so that students are not overloaded. Threading through these constraints was visualized as sticky notes on a wall, with options juggled and topics resequenced.

5.1 Systems foundations emphasizing articles were sequenced earlier, with toolkit later

In order to complete synthesis maps by the end of 13 weeks, students have to acquire skills both on systems techniques and visual designing. One approach would be to entangle the learning of systems and the learning on visual designing simultaneously. The other approach would be to learn systems first, and subsequently stage to learn visual designing later.

In 2015, OCAD U Graduate Studies declared "Five reasons a Master's in Strategic Foresight and Innovation is the new MBA" (OCAD University, 2015). In 2009, less than half of the students would have had undergraduate courses in design. In 2025, the probability of a student team including a trained designer could be less than 20%.

Designers do not necessarily have an advantage in the class, though, as they may not have gained the experiences of reading journal articles and writing briefs as have humanities graduates. Assigning students to work in teams encourages a potential mixture of skills for successful completion of a synthesis map and the accompanying design brief.

Systems thinking involves systems theory, systems methods, and systems practice. A work product approach puts deliverables on frontstage, with techniques backstage (Cameron, 2002). For a master's program in design, systems learning can be sequenced as: (i) artifacts firstly; (ii) methods secondly; and (iii) theory and history as supplemental. With a variety of systems approaches to be critically considered, the first half of the course was weighted towards learning systems. An assignment with lighter weighting at midterm would provide interim grading. In the second half of the course, toolkits from the systemic design community could be reviewed. This sequence appears in Table 1.

Table 1 Winter 2025 Understanding Systems

Week	*Topic*
1	Introduction to Complex Problems and Systems Thinking
2	History and Evolution of Systems Thinking
3	Systems Approaches: System Dynamics
4	Systems Approaches: Soft Systems Methodology
5	Systems Approaches: Viable System Model & Team Syntegrity
6	Reading Week
7	Project 1 Presentations
8	Systemic Design – Introduction to Synthesis Mapping
9	Systems Approaches: Critical Systems Practice (Explore)
10	Systems Changes Learning
11	Cybernetics & Action: Conversations for Design
12	Synthesis Map Studio Workshop
13	Synthesis Map Presentations & Critiques

Week 1 introduced the variety of approaches to systems thinking, wicked problems, and the polycrisis.

The following four weeks covered four different approaches to systems thinking. As a thread through 20th century histories, the Systems Thinkers reader from instructors at the Open University (Ramage and Shipp, 2020) profiles key figures in about 5 to 6 pages. Week 2 introduced the Idealized Design approach of Russell Ackoff and Socio-Technical Systems studies of Eric Trist and Fred Emery. Week 3 covered System Dynamics of Jay Forrester, Donella Meadows, and Peter Senge. Week 4 outlined the Soft Systems Methodology of Peter Checkland. Week 5 detailed the Viable Systems Model and Team Syntegrity of Stafford Beer.

Completeness would have included more systems approaches. Weeks 2 to 5 were sufficient to give awareness of the breadth of systems content familiar to most audiences. Non-essential to the production of synthesis maps were two topics later in the course. Week 9 explicitly surfaced Critical Systems Practice, with the Explore stage of the EPIC framework by Michael C. Jackson. While a deductive course style might have sequenced

Critical Systems Practice first, positioning later in the course inductively appreciates the history that led to multimethodology. Week 10 introduced the Systems Changes Learning approach that has been in development since 2019 with a spin-off group from Systems Thinking Ontario. Week 11 surfaced the Language Action Perspective of Fernando Flores.

Regrettably omitted from the course was Panarchy by C.S. Holling, and the subsequent Social Ecological Systems. In the priority of content to be covered, this would have required another week. Concurrent with the learning systems methods in weeks 2 to 5, student groups were encouraged to select a system of interest (i.e. case study) on which their learning could be exercised. At Week 7, the groups did 20-minute presentations for grading.

Week 12 dedicated classroom time for collaborative studio work, with instructors roaming across teams for coaching. Week 13 reviewed presentations of group work-in-progress. The final synthesis map and brief were due a week later, so that grading could be completed to close out the term. In addition, the assignment of a short reflection paper on course experience encouraged individuals to look back on highlights (and stumbles) of the 13 weeks.

This sequencing of topics for 2025 is compared to four other previous years in Table 2 in the Appendix.

5.2 Graduate students can learn as peers in groups from leading methods talks

In a graduate program at a design school, hands-on learning by students is preferred over professors lecturing. In an "inverted classroom" approach, students study readings and watch videos prior to intensive discussion in class. "If there were no questions, the instructors would not lecture" (Lage *et al.*, 2000). Peer learning enables students to become co-constructors of their learning process, developing metacognitive skills in critical thinking (Carvalho and Santos, 2022). Consistent with Seneca the Younger (4 BCE – 65 CE), *homines dum docent discunt* translates as "people learn while teaching" (Schafer, 2011).

For method talks facilitating learning for the entire class, students were asked to self-organize into teams of 3 to 5 individuals. This formed 4 groups in the full-time class, and 6 groups in the part-time class. An ideal method talk would include a concrete example of a system of interest, typical artifacts created, and methods applied. Some exercise time for other class members would deepen their appreciation. Theoretical foundations of systems luminaries can be deprioritized, as readings are available outside of class time.

A skill to be developed in critical thinking is selective reading. If members of a student group approach a list of references as divide-and-conquer, conversations can enrich the union set of their learning. With open access to online journal articles in the university library and streaming media on the Internet, each student can sample content to find styles with which he or she resonates. The domain of systems thinking is so broad that no individual can become a master in a timespan of weeks. In addition, not all system techniques are useful to any given profession, or the situations immediately at hand.

5.3 Generative AI might augment literature reviews

The popularization of Generative AI (Gen AI) in 2023 presents both opportunities and challenges for educators. Redesigning the course in late 2024 came with a choice between (i) updating content with a laisser-faire tolerance of students adopting Gen AI, or (ii) anticipating Gen AI use, towards establishing some baseline capabilities across students. With an expectation that the 2025 course revisions would persist into future years, class time was allocated in review some alternative Gen AI engines available free-of-charge on the Internet.

An online Systems Thinking Ontario session in January 2025 foreshadowed class preparation, with reviews of OpenAI ChatGPT, Microsoft Copilot, Mistral LeChat, Anthropic Claude, Google NotebookLM, and Perplexity.ai (Ing, 2025b). Building on that, the Week 2 lecture was derived (Ing, 2025c).

Students were advised to try out Gen AI as a learning activity. Using Gen AI was not a requirement, but instead an experimental use. For written assignments, appropriate acknowledgements following the OCAD U code of conduct were expected.

6. Adapting: When and where can changes be introduced?

Each student cohort takes the Understanding Systems course once. Thus, learning on the course design is gained more by the instructors who can observe improvements and disappointments as plans become outcomes.

6.1 Expectations were set for a course in transition

In the syllabus, and in the first class, instructors were open with students about the 2025 course as discontinuous from the prior trajectory. The instructors would serve more as facilitators and guides, falling back as subject matter experts for details and ambiguities. Although an official reading list was published, students were advised to not read too far ahead, in the case more relevant resources emerged.

If students found the language in research articles too difficult, an option for summarizations via Gen AI was suggested. The likelihood of hallucinations from a Retrieval Augmented Generation (RAG) is lower than for a Large Language Model (LLM) based on Transformers. Advanced Gen AI use could discern differences and commonalities across related researchers writing on the same systems topic.

Each systems approach has its own internal consistency. An introductory survey positioned as a high-level of overview across a variety of schools of thought discourages seeking a “one best way” solution.

6.2 Method talks would vary on emphases

Preparation of a student group for a method talk was set with an expectation of 3 to 6 hours. Although groups from the full-time and part-time sections might be leading discussions on the same subject, the points assessed as most pertinent would naturally vary. If the dialogue did not fully cover the ideas, an instructor could guide or redirect the flow.

6.3 Example cases could be ephemeral or provisional

Systems concepts can be made more accessible through examples, metaphors, and studies. For groups who were already looking ahead to a system of interest for their synthesis map, starting early with that case could reduce workload. With parallel classes in progress, some synergy might be achieved by reusing preliminary primary research, or by collating secondary data sources. Early methods talks who had not established a system of interest were free to reuse examples for their readings, or to make up their own stories.

7 Retrospecting: What experiences contribute to learning?

In the last class meeting, students were given class time to complete an online survey. Of the 24 full-time students, 54% responded. Of the 17 part-time students, 65% responded. With small sample size, responses are pooled across both sections.

> Course pace was: About Right 37.5%; Fast 50%; Too Fast 12.5%.
>
> Course difficulty, relative to other courses was: Average 33.3%; Difficult 58.3%; Very Difficult 8.3%.
>
> Course workload, relative to other classes was: Average 54.2%; Heavy 37.5%; Very Heavy 8.3%.

As instructors, these results are compatible with our expectations. The course pace as "about right" to "fast" reflects a struggle between a greater breadth of content, and the absorption constraints to reach a depth of intuition on the material. The course difficulty assessed as "average" to "difficult", and not "very difficult" is fair for curriculum that can portrayed as frame-breaking and critical. The course workload as "average" to "heavy" confirms that students did not have the steal away time from other concurrent courses.

7.1 Students appreciated learning about systems

Responses to open-ended questions on "what did you learn" reflect that understanding accumulates over time. Comments included: "new way of viewing the world through a systems lens"; "how I could be thinking more critically about the interconnectivity of things"; "at first, I found it quite complex to study and understand systems, but as the course progressed, my interest and understanding increased significantly"; "it's equally important to develop a disciplined approach to continuous learning"; "it feels a bit like having the cheat code for life".

Responses on suggestions to "improve on structure or content" varied. Responses included "I really loved the method talk concept … it was engaging and pushed us to read, learn and think critically"; and "I appreciate the interest to have students do some instruction"; to "do not have students present the material". More consistent was the emphasis on methods-first and theory second. Comments included: "I really liked the methodological approach. It feels more practical compared to just learning theory"; "methodology … helped ground the material"; and "I found the focus on methodology to be incredibly helpful for my development as a designer".

7.2 Learning with AI was mostly welcomed

Responses to the invitation to use Gen AI reflect that instructors and students are still early in their adoption. Comments included: "I love how this course is keeping up with the times by embracing AI rather than negating it"; "getting acquainted with generative is important"; and "using AI to summarize readings is a really good thing to do before trying to read the whole text as it can make the readings more accessible and second I would suggest trying to use AI conversationally to ask the questions that are perhaps a little embarrassing to ask in front of the class".

Some unanticipated responses came from students for whom English is not native: "Gen AI is a great tool to summarize and organize materials especially for non English speaking students"; and "It's a good tool for international students who aren't used to reading long papers. The summary generated by AI helps me get an overview of the paper and saves me from struggling while reading it. However, since it's just an overview, students still need to read the paper when seeking detailed content".

Some were uncomfortable with the newness of the technology. Comments included: "I use genAI reluctantly and did not find that this class changed my attitudes or biases about the technology"; "Don't rely on it to do work for you. It's not as smart as everyone wants it to be"; and "instructors need to be clearer with students what is and isn't acceptable use of AI".

7.3. Content sequencing and focus could be improved

With the benefit of experience with the 2025 course design in practice, we instructors see immediate opportunities for improvement.

The Week 11 "Conversations for Design" content would be productive as a Week 1 topic. Some student teams ran into conflicts – particularly on expectations about scheduled time together, and responsibility definitions – that can be ironed out through a Language Action Perspective. Making commitments with an appreciation of theory can immediately be applied practically in team operations.

With Week 11 freed up, Systems Changes Learning could become the advanced last topic, as the probable impact on Synthesis Maps is small. Week 10 could be filled with Panarchy and Social Ecological Systems approaches to reinstate the "non-human" systems originally envisioned in 2009.

The Week 2 instructor lecture did not sufficiently demonstrate the way that Method Talks could be most effective. The sequencing should have clarified as: (i) selecting a relevant example system of interest; (ii) artifacts to be produced; (iii) techniques to employ; (iv) a brief class exercise; (v) theoretical foundation; and (vi) history of luminaries. In the 2025 classes, students were misled by the Ramage & Shipp readings to emphasize history first.

Ways to recognize individual performance might be reconsidered. The SFI program generally orients towards team efforts, but any irreconcilable breakdown leaves earnest contributors unsatisfied.

8 Next: Recontextualizations?

This report summarizes the experiences of instructors in fall 2024 preparing a major course revision, for delivery in winter 2025. With the course again offered in January 2026, we expect revisions may begin in November 2025.

As of August 2025, some indicators of potential changes in the contexture have already surfaced. For the SFI program in which "Understanding Systems" is included, applications and admissions for fall 2025 are down. For the full-time cohort, this may be the result of reduced interest by international students, due to changes in immigration policies by the Canadian government. For the part-time cohort, financial consideration (e.g. the cost of housing in Toronto) may be at play. At level of OCADU Graduate Studies, there has been a movement towards greater uniformity that might impact SFI (e.g. different programs require different numbers of total credits for graduation). No relief from the continuing financial pressures of unchanged provincial government funding for universities is in sight. In general, Canadians are feeling economic uncertainty, due to the changing tariffs and trade agreements with the USA.

The results from the student survey of "Understanding Systems" provides insight into directions in which the course might continue, and some areas for modification. These will weave into the larger contexture in the design of the winter 2026 class.

Appendix

Table 2 "Understanding Systems" Comparison of Topics by Year

Week	*Winter 2010*	*Winter 2015*	*Winter 2018*	*Winter 2020*	*Winter 2025*
1	Intro to Understanding Systems, Systems Basics	Systems Fundamentals: Understanding the Systems Perspective	Systems Fundamentals: Understanding the Systems Perspective	Systems Thinking: Understanding the Systems Perspective	Introduction to Complex Problems and Systems Thinking
2	Design and Systems Approaches	Systemic Design –Systems Applications, Methods	Systemic Design – Systems Application Methods	Systems Change	History and Evolution of Systems Thinking
3	Systems Approach and Mapping Systems	Applied Systems Thinking	Applied Systems Research	Applied Systems Research	Systems Approaches: System Dynamics
4	Systems: Biosphere, ecosphere, technosphere	Systems Models, Modeling, & Systemic Foresight	Natural Systems & Design for Ecology	Ecological & Natural Systems	Systems Approaches: Soft Systems Methodology
5	Defining and Analyzing System Behavior	Natural Systems and Design for Ecology	Systems Models, Modeling, & Systemic Foresight	Sociotechnical & Service Systems	Systems Approaches: Viable System Model & Team Syntegrity
6	Biomimetics and Sustainable Ecologies	Project One Presentations	Project One In-studio Work	Systems Analysis & Modelling	Reading Week
7	Reading Week	Reading week	Project One Presentations	Study Week	Project 1 Presentations
8	Technosphere: Humans and Technology Systems	Workshop week	Reading Week	Systemic Design for Complex Social Systems	Systemic Design – Introduction to Synthesis Mapping
9	Technosphere: Information Systems and Networks	Social Systems and Design Methodologies	Social Systems and Design Methodologies	Language, Language Action, Constructivism	Systems Approaches: Critical Systems Practice (Explore)
10	Systems and Implementation	Languaging - The Cognitive Basis of Social Systems	Organizational and Service Systems	Dialogic Design Workshop I	Systems Changes Learning
11	Systems and Foresight	Organizational and Service Systems	Languaging: The Cognitive Basis of Social Systems	Dialogic Design II	Cybernetics & Action: Conversations for Design
12	(after Good Friday Holiday) Systems - Tools & Methods	Social Systems Design: Dialogic Design Engagement and systemic design method	Social Systems Design: Dialogic Design	Design for Complexity & Emergence, Policy, Process & Innovation	Synthesis Map Studio Workshop
13	Individual Case studies presentations	Structured Dialogic Design: Workshop 2	Structured Dialogic Design: Workshop 2	Project Two: Synthesis map prep & working studio	Synthesis Map Presentations & Critiques
14	Individual Case studies presentations	Project Two Presentations & Critique Day	Design for Complexity & Emergence	Project Two: Synthesis map presentations and final critiques	…
15	…	Project Two Presentations & Critique Day	...	…	…

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