Executive Summary

Whether we are or aspire to be managers, consultants, architects, educators, engineers, politicians, health care professionals or engage in other types of knowledge work, we all are designers of and adapters to change.

New software tools are introduced to our workplace, with the expectation that they will enable us to do our work faster, better and perhaps with greater cost savings. Does it always work out according to plan? What do we have to do to get up the learning curve? What happens to our productivity when the program has a bug, or not everyone we work with uses it? Our organizations get restructured with the intent of aligning tasks with a new business and organizational strategy. That redesigned structure affects whom we interact with and what sorts of problems concern us. Do unexpected consequences occur as a result? Do we sometimes get confused about roles and who has and needs what information? A new zoning ordinance gets introduced to our neighborhood to preserve its historic look and feel. What happens when we have to wait months to repair our garage or add a fence?

We are placed in a role to propose and implement a new philanthropic focus for our local volunteer group and bring more people on board to work together. Do we sometimes find the numbers fade when the newness wears off? We decide we want our teammates to use an electronic collaboration tool like Blackboard everyday to share the work in progress. Do we find some people use it and some people do not, and those who use it store information in different ways causing overload and confusion?

How do the things that we design, and the ways that we intervene in organizations, impact the local environments in which our designs and interventions are placed? In turn, how do the local environments interact with designed things and interventions placed within them? Do they adopt them? Adapt to them? Adapt with them? Reject them? Change them?

The Ecology of Design and Intervention is designed to facilitate students’ awareness of the ecological nature of information rich environments. One aspect of the concept of ecology used in this context, as compared to a system, is that the level of analysis is local (i.e., within the sphere of influence of the designer, change agent and participant). Another aspect of this use of the term ecology is an emphasis on the interaction (the information sharing and implicit and explicit knowledge creation and sharing) that occurs between members of the ecology and the artifacts and tools that surround them in the ecology. In other words, rather than emphasize the parts, the emphasis is on what the parts are doing together and how change impacts that interaction and shared cognition. To that point, it is our goal that students will become better equipped to understand and anticipate how those
information ecologies interact with innovations that are placed within them. It is our hope that by deepening the ability to analyze environments as information ecologies, students will be more astute and engaged participants in those environments. In addition, they will become more thoughtful designers of the changes that impact the environments that are within their spheres of influence.

Learning Objectives
Course Focus - The analytical side of design, not the making of things

Ecological Perspective
Understand the ecological relationships among things
Skills: Seeing the connections, examining the relationships among things
Reading Context

Designer’s Lens
See through a designer’s lens, understand worldviews of design
Skills: Describing ecological relationships and how designed change might impact these
Seeing design in Context

Value Creation
See the gaps between organizational ecologies and design opportunities
Skills: Identifying how a designed intervention will bring value to an organization
Building on Context

Communication
Speak to the gaps between ecologies and their possible interventions.
Skills: Clearly communicate the relationship and how value would be created with the intervention
Demonstrating understanding of Content

Weekly Strategy
Focus on Major Theory and/or Representative Case(s)

Building Synthesis – Our roles as facilitators
Initial Weeks Giving Questions
Midterm Hearing Questions
Final Weeks Asking Questions

Course Materials
• Course packets purchased through SESP Office of Student Affairs
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| April 1st | • What are the goals of the class?  
• What is the context of the class, i.e., what change drivers and organizational realities are driving the need to be able to see things from this ecological perspective?  
• What are we offering this combination of perspectives (i.e., architecture, education, management)?  
• Do we mean ecology literally or as a metaphor?  
• What are the key concepts we will cover?  
• What is the relationship of the class to LOC and to a design specialization?  
• What is the workflow of the class?  
• What are your expectations?  
• What are our expectations?                                                                 | Information Ecologies - Nardi & O’Day: chapter 1  
Workplace by Design - Becker & Steele: chapter 2  
Strategy as Ecology - Iansiti and Levien  
Measuring Strategic Readiness of Intangible Assets - Kaplan and Norton  
Managing Strategic Change and Innovation - Nadler and Tushman: chapter 11  
Inquiry by Design - John Zeisel: chapters 7 & 8 (in coursepack)  
How to Read a Book - Paul Edwards  
How to Write a Report packet | Introduce Class  
Prep and Build teams - Contact Info and Background Exchange  
Review Syllabus  
Artifacts Exercise  
Report writing exercise in class  
Assignment: Artifacts mini-report out for the following week |
| April 8th | • What are the commonalities and differences in the ecology perspectives from last week?  
• How is an ecological framework useful when looking backwards? Looking forward?  
• How does an ecological framework suggest a scope of responsibility?  
• What are your major take-aways around the concept and implications of an information ecology?  
• What makes an ecology sustainable?                                                                 | Special Commission on the 1999 Texas A&M Bonfire  
Rescue at Cue Creek, The New Yorker - Peter Boyer  
Cook County Building Fire Newspaper Articles | Artifacts Report Review [By Team]  
Working Evaluation of Report [ALL]  
Readings Discussion - Team Advocates  
Introduce Campus Case Project |
| April 15th| • What elements of an information ecology did you see in the cases?  
• How did values play out in the cases?  
• How did the inter-activity between these elements impact the outcome, the way people think and what people do?  
• What were the key vehicles of shared cognition in the cases? How were these vehicles successful? How did they fail?  
• How do these cases relate to the theories on ecology presented earlier?  
• What are your major takeaways around the concept and implications of an information ecology? | Work Environments: Offices and Factories, Handbook of Environmental Psychology - Eric Sundstrom  
Work Environments, Handbook of Environmental Psychology - Janetta McCoy  
Workplace by Design - Becker & Steele: selected chapters in coursepack  
Work and Stress, McCoy and Evans | Campus Case Working Session Odyssey approach  
Edited Artifacts report due |
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<tr>
<td>April 22nd</td>
<td>• What constitutes a work environment?</td>
<td>Driven by Design - Thal Raz</td>
<td>Assign Designed Things</td>
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<td>Work Environments (A particular kind of information ecology)</td>
<td>• What is unique about the interactions between people in these environments?</td>
<td>Pinto Fires and Personal Ethics, <em>Journal of Business Ethics</em> - Dennis Gioia</td>
<td>Odyssey approach</td>
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<td>• What business values and goals do work environments impact?</td>
<td>Google Articles</td>
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<td></td>
<td>• What individual values and goals do work environments impact?</td>
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<td></td>
<td>• What are some unobtrusive and obtrusive technologies used in work environments?</td>
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<td>• What role are they supposed to play? What are their intended and unintended</td>
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<td></td>
<td>consequences?</td>
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<td>• How can work environments be viewed as information ecologies?</td>
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<td>• What are unique challenges of work environments from the perspective of an</td>
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<td>information ecology?</td>
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<td>• What do we know about the role of work environments in successful and</td>
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<td>unsuccessful organizational change efforts?</td>
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<td>April 28th</td>
<td>• What is &quot;designable&quot;?</td>
<td>Things that Make Us Smart - Norman Chapters</td>
<td>Campus Case Working Session</td>
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<td>Design</td>
<td>• Why is it important to think of interventions and things in the world as results of design?</td>
<td><em>Tipping Point</em> - Malcolm Gladwell: chptr.s 1, 2, 4 &amp; 5</td>
<td>Odyssey approach</td>
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<td>• What questions must be asked and answered in order to design something that has its intended effects?</td>
<td><em>The Collapse of Sensemaking in Organizations, Administrative Science Quarterly</em> - Karl Weick</td>
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<td>• What value added does a design perspective bring to an organization?</td>
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<td>• What is the impact of design? How do you show it?</td>
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<td>• What are the similarities and differences between the different approaches to</td>
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<td>design? Between different things designed?</td>
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<td>• What role do values play in the act of design? What are the &quot;engineered&quot; and</td>
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<td>what are the &quot;emergent&quot; properties of the design of interventions?</td>
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<td>• How is design an act of and/or product of cognition?</td>
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<td>• What are common errors designers make? What are the consequences?</td>
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<td>• Who are designers?</td>
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<td>• Where does the designer’s responsibility begin and end in terms of consequences?</td>
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<td>• In what ways are consequences emergent properties of cumulative, interacting</td>
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<td>design decisions?</td>
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<td>• How well can you predict and plan for consequences?</td>
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| May 6<sup>th</sup> Design (Movie Case) | • What happens to the features of an information ecology (IE) during times of severe stress?  
• How does individual decision making play out in an IE under stress?  
• How does group decision making play out in an IE under stress?  
• How does stress on an IE test the quality of design of the things within it?  
• What happens to the design of interventions process during time sensitive, high risk times?  
• What are the roles of connectors, mavens and salesmen especially in times of stress?  
• How is the power of context as described in The Tipping Point similar and different than your conceptualization of an IE?  
• What does leadership look like in an IE? How does it change during times of stress?  
• How are leaders designers?  
• Under what conditions does an IE go back to its old form after adapting to a stressful situation that required intervention? Under what conditions and in what ways does an IE change to a new form after adapting to a stressful situation that required intervention?  
• What role does learning play in designing an intervention? In adopting an intervention? In understanding the effects of change and applying it to future designs and or assumptions about the ecology? | DEGW Alignment article  
Background Reading for Field Trip | Class Checkpoint Movie Night Assign Movie Case Analysis |
| May 13<sup>th</sup> Design of Work Environments | • How do you know when a design works or not?  
• What makes a design stick or not?  
• What is the role of keystone species in design? What are the implications for including them in the design process?  
• What are the critical success factors for the design of work environments?  
• What do you look for to determine if a workplace design is effective or not?  
• What role do adaptations and workarounds play in workplace design and response to design? | Movie Case Analysis Due Odyssey Approach | |
| TBD       | • Class: Field Trip to Chicago Tribune - Date/Time TBD                                                                                           |                        |                                         |
| May 20<sup>th</sup> Applied Research | • What aspects of an information ecology did you see at play in the Tribune work environment?  
• How did the design principles and the designers’ interpretation of those principles show up at the Tribune?  
• In what ways do you think the designers implicitly or explicitly took into account the features of an information ecology when designing the Tribune space?  
• What are the intended and unintended consequences of the Tribune’s designed work environment?  
• What methods might you use to study an information ecology?  
• What is a suitable research framework and process for studying an ecology before or after design?  
• What is the value of research? To society? To your client or organization? To you as designer?  
• What does the Xerox repairmen study tell you about the features of an information ecology at play during work that we often do not think about or see from the outside?  
• If you were going to design something to help the Xerox repairmen do their work? What would it be? Why? How would you bring their knowledge into the design process? | Barnes & Egmon White Paper | Campus Case Working Session |
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<td>May 27th</td>
<td>• What does it mean to have a designer’s eye towards organizations? &lt;br&gt; • What is the value of an interdisciplinary perspective toward the design of environments and interventions? &lt;br&gt; • What is the value added of bringing an ecological lens to design? &lt;br&gt; • What is the value added of bringing an ecological lens to applied organizational research? &lt;br&gt; • How did the course design succeed and fall short according to our goals for it to become an information ecology? &lt;br&gt; • How do you look at the world of designed things and interventions differently now than you did in April? &lt;br&gt; • How do you see information ecology and design as acts and products of cognition? &lt;br&gt; • What are your key takeaways?</td>
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<tr>
<td>June 3</td>
<td>• No Class</td>
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<td>CAMPUS CASE ASSIGNMENT DUE at CLOC</td>
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Assignments

1. Participation – Individual and Group Assignment
Participation includes prompt and regular attendance as well as contributing insight and thought-provoking questions in class. It also includes being a reliable, contributing member to your Campus Case group, for which peer evaluations will be conducted as part of the final grade.

This grade will be based on input from the following:
- Your evaluation of others in your team
- Your evaluation of yourself in your team
- Your evaluation of yourself in the class overall
- Our evaluation of your participation in the class overall

***Missing two classes without an excused absence will automatically drop your participation evaluation.

20% of total grade

2. Artifact Assignment – Group Assignment
In the April 1st class, work with your team to identify an artifact of the CLOC context. Using the preliminary foundation of class discussion, evaluate what you can ‘know’ about this artifact and how your team can present that contextual knowledge to the rest of the class. Presenting the knowledge requires working through the formal presentation strategy discussed in the class session. Each team will do a brief report out the next week [both in written and verbal form].

10% of total grade

3. Movie Case Analysis – Individual Assignment
A critical analysis of the movie shown in class, using the ecological framework and understanding to identify, analyze, and connect observations about the cognition that occurs in the movie, including the interaction between people and their environment. The analysis will also be expected to discuss the role of design of environmental artifacts and interventions and the role of stress on design. Questions to guide this analysis will be distributed later in the quarter.

10% of total grade

4. Designed Things – Group Assignment
A comparative study of each team’s understanding of ecological perspectives and designed things. Using the foundation built thus far, each team will identify a designed thing that represents their understanding of the relationship between design and ecology. Through developing criteria for identifying an appropriate example, and then comparing the criteria to the actual designed thing, each team will make a convincing case that interprets the relationship between design and ecology.

20% of total grade
5. Campus Case Analysis – Group Assignment

Each team will be expected to conduct a study of an information ecology on Northwestern’s campus that will be assigned to them by the instructors. Each team will draw on the resources from previous efforts as well as campus connections provided through the CLOC. 

40% of total grade

Late Policy
1 Day Late – Deducts 5 points
2 Days Late – Deducts 10 points
3 Days Late – Deducts 15 points
Beyond Three Days – Not Accepted