



67-381

Design and the Human Experience



"Design is not merely an adornment of cultural life but one of the practical disciplines of responsible action for bringing the high values of a country or a culture into concrete reality, allowing us to transform abstract ideas into specific manageable form."

— Richard Buchanan

"Man is the measure of all things...Man is not the source of all things, as the subjective idealists would say. Nor is he the passive observer of all things, as the objective idealists and materialists would say. The Quality which creates the world emerges as a relationship between man and his experience. He is a participant in the creation of all things."

— Robert M. Pirsig

Syllabus

About this Seminar

Design is many things and takes many forms. Design resides in the mind as the intent to do something. Design can be a process or action — the act of making something. Design can be a tangible or intangible outcome — a product of the process. This wide scope makes it particularly challenging to talk about and it's hard to know where to begin. Talk about it with such ubiquitous terms and it starts to lose meaning; talk about it more narrowly and you miss the bigger picture.

Collectively, as a civilization and society, the designed world is amongst our most defining characteristics. As individuals, we are all designers in a sense. We shape our environments and the experiences of those around us. Some of us, however, are more active agents, giving shape to this world rather than letting it shape us passively. Across history, long before "design" came to be defined, humans shaped ideas and communications, objects and artifacts, environments, architecture and cities, cultural structures, values, emergent and collective systems.

Nearly all disciplines involve design in some way making it a fundamentally interdisciplinary field. Through design, we've achieved our most monumental human feats and cornered ourselves into the most intractable of situations. We could spend a semester alone just talking about well-designed chairs or sending humans to the moon, but that would be more of a history course. Instead, I would like to look at the ideas that connect design on a grand scale.

In contemporary terms, design is distinguished as a holistic field of thought and action — not art, not science, a bit of both, yet uniquely its own. This course will cover the spectrum of our designed world, but most importantly emphasizing the threads that connect it. Most noteworthy for the 21st century is the designer's unique disposition: the designer is a public servant, advocate, and citizen. By studying theories of our built world it informs us as we become these active agents of change. Whether it be Aristotle, user interfaces, or quantum physics, the words of Charles Eames ring true: "eventually," he said, "everything connects."

When you leave this course, I expect that you will have a much broader perspective on design and its relationship to other fields, and to recognize the movement from theory to practice. As you interact with this world I hope you will criticize, admire, and see it with a design perspective. You don't have to call yourself a designer, but understand that the design perspective can help you bring great meaning and richness to products, interactions, and society at large. Take this perspective with you while making ethical decisions in your field of practice, and, of course, to make things that are useful, usable, desirable, and ecologically harmonious.

Fall 2016	9 Credit Hours	Alexander R. Wilcox Cheek	alexcheek@cmu.edu
Monday and Wednesday	Prerequisite: 76-101	Assistant Teaching Professor	www.arwc.xyz
1:30 pm – 2:50 pm	Interpretation and	Information Systems	twitter @arwcheek
Design Studio 1030	Argument (Rhetoric)	Office 2155 (Door is Open)	

Objectives

Learning objectives are mapped to the grading rubric in order to demonstrate how each one is evaluated.

- ① To develop a broad **literacy in the designed world** and understanding of its place and influence.
- ② To study and apply a set of **design frameworks** to approach ideas, design products, and systems.
- ③ To develop **lateral, scalar and holistic intelligence**, one based on connecting ideas across disciplines.
- ④ To develop and strengthen skills in **analysis and critical thinking** of and about the built world.
- ⑤ To develop and strengthen skills in **academic reading and interpretation**.
- ⑥ To develop and strengthen skills in **argument and scholarly writing**.
- ⑦ To communicate your interpretations and criticism in **verbal discourse**.

Required Text	<ul style="list-style-type: none"> ↗ <i>Hello World</i> by Alice Rawsthorn ↗ All other readings will be provided on Blackboard 	<p>ISBN 978-1468308068</p> <p>blackboard.cmu.edu</p>						
Helpful Resources	<ul style="list-style-type: none"> ↗ <i>A Manual for Writers</i> by Kate L. Turabian, et al. ↗ <i>The Craft of Research</i> by Wayne Booth, et al. ↗ <i>They Say, I Say</i> by Graff and Birkenstein 	<p>ISBN 860-1300157443</p> <p>ISBN 978-0226065663</p> <p>ISBN 978-0393933611</p>						
Evaluation	<p>All papers should strive to accurately represent the ideas presented by authors and external scholarly sources, develop a clear central argument, be grammatically correct and stylistically strong. Please refer to the grading rubric for evaluation criteria and the paper guidance document.</p> <hr/> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">12% Overcoming Noise</td> <td style="width: 33%;">24% Interaction + Experience</td> <td style="width: 33%;">16% Class Participation</td> </tr> <tr> <td>18% Looking at Campus</td> <td>30% The Life Raft</td> <td>100% Final Grade</td> </tr> </table> <hr/> <p>16% of your course grade will be based on classroom participation which is evaluated upon readiness for discussion (evidence of having read the assigned materials), response to questions (evidence of attempting to address the question), and efforts to contribute to class discussion.</p>		12% Overcoming Noise	24% Interaction + Experience	16% Class Participation	18% Looking at Campus	30% The Life Raft	100% Final Grade
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18% Looking at Campus	30% The Life Raft	100% Final Grade						
Expectations	<p>Your participation is the basis to making this course work. The liberal arts are based on broad thinking and making connections amidst a multitude of perspectives. As we study the design of our world, all perspectives have value in shaping how we reach new understandings, construct new knowledge, and form new mental models different from what we began the course with.</p> <p>Please maintain good communication with me throughout the course. I am here to help each student achieve the learning objectives of the course. I will put in as much time in as you are willing to put in yourself. Nine credit hours means that for every hour spent in the classroom, two hours of work is expected outside. In other words, 9 hours per week.</p> <p>Please do not multi-task with other work, email, texting, or web browsing. Evidence that you are not fully engaged in the class will be reflected in your participation grade.</p>							
Extracurricular	<p>Students are encouraged to take advantage of cultural activities and architectural landmarks in Qatar like mathaf: arab museum of modern art, the Museum of Islamic Art, Richard Serra's installations, Souq Waqif, Jazz at Lincoln Center, and whatever else is fun.</p>							
Acknowledgement	<p>I would like to acknowledge a mentor and former professor of mine, Richard Buchanan. Dr. Buchanan earned his Ph.D. in philosophy and rhetoric from the University of Chicago's Committee on the Analysis of Ideas and the Study of Methods. Shortly thereafter, he began to apply his thinking to the arts of design. As a professor at Carnegie Mellon for many years, Dr. Buchanan's theories and writings shaped how I think about and practice design, and are fundamental to the structure and ideas of this course. He was also the first one to teach it.</p>							

Course Flow

Fall 2016 Monday and Wednesday, 1:30 pm – 2:50 pm, Design Studio 1030

Introduction

- Mon, Aug 22 Syllabus Review & Welcome
LECTURE + DISCUSSION: Design and Design Theory; The Four Orders of Design
 ➡ **ASSIGNMENT FOR NEXT CLASS:** Look around you. List everything within viewing distance that was designed by people. When that list is complete, look closer. List everything designed that you can't see. For all the items listed, map out how those things actually got to where they are now. In one paragraph, summarize what design is from your perspective and experience.
- Wed, Aug 24 **READING FOR TODAY:** Alice Rawsthorn, *Hello World*, pages 6–44
SUGGESTED READING: Liz Coleman, "Design Matters"
DISCUSSION: Student-driven. Please be prepared with questions, examples, and criticism.

Communication

The arbitrary world around us is comprised of data, all that is given. Information, ideas, structures, component parts, all that make up the cosmos are data. As we interact with the cosmos, we take these data, piece by piece, and compose them into meaning. In this act of interaction, we create information, thus creating a more orderly universe and one that takes on a more manageable, understandable form. More simply, when we act as designers, we are taking the messy and arbitrary world and, within our vision, making it more composed.

- Mon, Aug 29 **LECTURE + DISCUSSION:** What is Data?
READING FOR TODAY: Warren Weaver, "Mathematics of Communication"
SKIM FOR TODAY: John Condon, "When People Talk With People"
SUGGESTED READING: George Miller, "The Magical Number 7 ±2"
SUGGESTED VIEWING: Ray & Charles Eames, "A Communications Primer"
- Wed, Aug 31 **LECTURE + DISCUSSION:** Print Media & Graphic Design
IN-CLASS VIEWING: Bierut/Savan/H&FJ in *Helvetica* and Steve Jobs on Paul Rand
READING FOR TODAY: Paul Rand, *A Designer's Art*, pages XII–13
READING FOR TODAY: Lupton and Miller, "Period Styles"
SUGGESTED VIEWING: *Helvetica*
- Mon, Sept 05 **LECTURE + DISCUSSION:** Information Design & Data Visualization
READING FOR TODAY: Edward Tufte, *Beautiful Evidence*, pages 125–139
IN-CLASS VIEWING: Charles & Ray Eames, *Powers of Ten*, and Muriel Cooper, *Information Landscapes*
 ➡ **DUE SEPT 19:** Essay One: Overcoming Noise

Construction

Since Aristotle, the Western world has been guided along two paths to truth: the first of logic, scientific inquiry, and analysis, and the second of rhetoric, intent, invention, persuasion, and poetics. While both paths are crucially important, design is, at its heart, rhetorical in nature as a field of production (based on Golsby-Smith, 2012). Furthermore, design's interests are parallel to the rhetorical stance where one accounts for audience values, contextual understanding, and inquiry into purpose and principles. The art of rhetoric provides the underpinnings to design as well as a critical frame for analyzing good and bad or rightness and wrongness in designed objects.

- Wed, Sept 07 **IN-CLASS VIEWING:** *Objectified*
SUGGESTED VIEWING: NOVA's *Making Stuff* series
- Wed, Sept 19 **LECTURE + DISCUSSION:** Industrial and Product Design
IN-CLASS VIEWING: *Ice Cube Celebrates the Eames* and *Marc Newson and Jony Ive's (RED) Auction*
READING FOR TODAY: Alice Rawsthorn, *Hello World*, pages 45–60
SUGGESTED READING: Christopher Alexander, *Notes on the Synthesis of Form*, pages 15–27

Mon, Sept 21	<p>DISCUSSION + ACTIVITY: Rawsthorn and <i>Objectified</i>; CMU-Q Building Tour</p> <p>READING FOR TODAY: Dieter Rams, "Omit the Unimportant," and Kenji Ekuan, "Aesthetics of Simplicity"</p> <p>SUGGESTED READING: Ian Parker, <i>The New Yorker</i>, "Jonathan Ive and the Shape of Things to Come"</p>
Mon, Sept 26	<p>LECTURE + DISCUSSION: Tangible Interactions, Human Factors and Ergonomics</p> <p>READING FOR TODAY: Don Norman, <i>The Design of Everyday Things</i>, pages 1–36</p> <p>SUGGESTED READING: William Langewiesche, <i>Vanity Fair</i>, "Should Airplanes Be Flying Themselves?"</p> <p>SUGGESTED LISTENING: 99% <i>Invisible</i> episode 170, "Children of the Magenta"</p>
Wed, Sept 28	<p>IN-CLASS VIEWING: <i>How Much Does Your Building Weigh, Mr. Foster?</i></p>
Mon, Oct 03	<p>LECTURE + DISCUSSION: Architecture and Ideals</p> <p>READING FOR TODAY: Paul Goldberger, <i>Why Architecture Matters</i>, pages 1–40</p> <p>IN-CLASS VIEWING: <i>New York Times</i>: "Blueprints for the Mideast"</p> <p>SUGGESTED VIEWING: <i>Alain de Botton: The Perfect Home</i> (episode 2): youtu.be/btHoSguXN-Y</p> <p> DUE OCT 10: Essay Two: Looking at Campus</p>

Interaction

Design makes a significant shift away from tangibility towards shaping how people navigate and experience living systems. Rather than designing parts, we are now principally focused on relationships, transactions, and behavior. This is the material of designing for interaction, where the world stage becomes a confluence of people, information, objects, architectures, technology, services, and environments. While "designing experiences" is theoretically just out of reach, all design in various ways shapes human experience. Here, the human experience is directly considered from the outset. The implications of design are more profound in these higher orders of design, thus the process of creating change is different, as is the relationship of designer with her or his place of practice.

Wed, Oct 05	<p>IN-CLASS VIEWING: <i>Maya Lin: A Strong Clear Vision</i></p> <p> ASSIGNMENT FOR NEXT CLASS: Make a list of personal experiences that come to mind and try to break them down into the component principles that Dewey theorizes. Bring this list for discussion.</p>
Mon, Oct 10	<p>IN-CLASS VIEWING: <i>Man on Wire</i></p> <p>SUGGESTED VIEWING: Akira Kurosawa's <i>Dreams</i></p>
Wed, Oct 12	<p>READING FOR TODAY: John Dewey, "Having an Experience"</p> <p>IN-CLASS READING: C. P. Cavafy, "Ithaca"</p> <p>DISCUSSION: Lin, Dewey, and the shift from artifacts to experiences.</p>
Mon, Oct 17	<p>LECTURE + DISCUSSION: Science, Technology, and Silicon Valley: The Origins of Interaction Design</p> <p>READING FOR TODAY: Bill Moggridge, <i>Designing Interactions</i>, pages 3–14</p> <p>SUGGESTED READING: Erving Goffman, <i>Interaction Ritual</i>, "On Face-Work"</p> <p>SUGGESTED LISTENING: NPR's <i>Planet Money</i> episode 642, "The Big Red Button"</p> <p>SUGGESTED VIEWING: Santa Clara Valley Historical Association: 1992 Steve Jobs Interview</p>
Wed, Oct 19	<p>LECTURE + DISCUSSION: Designing for Interactions</p> <p>READING FOR TODAY: Jon Kolko, <i>Thoughts on Interaction Design</i>, pages 12–39</p> <p>SUGGESTED READING: Jonathan Shariat, medium.com, "How Bad UX Killed Jenny"</p> <p>SUGGESTED READING: Allison Arieff, "Solving All The Wrong Problems"</p> <p>IF YOU'RE FEELING LOST: Richard Buchanan, Interaction 11: www.vimeo.com/20379481</p> <p>SUGGESTED VIEWING: Spike Jonze's <i>Her</i></p>
Mon, Oct 24	<p>ACTIVITY + CRITIQUE: IxDA "Interaction Design Today" and Interaction Awards Balloting!</p> <p>READING FOR TODAY: Taylor Clark, <i>Starbucked</i>, pages 86–110</p> <p>SUGGESTED READING: Kenneth Burke, <i>Grammar of Motives</i>, "Five Key Terms of Dramatism"</p> <p>SUGGESTED VIEWING: <i>Chef's Table: Grant Achatz's Alinea</i> (Netflix S.02, E.01)</p> <p> DUE OCT 31: Essay Three: Interaction + Experience</p>

Integration

How does one design the future? One could say we do so in every act of design. Collectively, human existence moves full-steam ahead, everybody contributing in ways big and small, the collective consequences becoming noticeable over time. Parts here and there bump into global systems, problems arise out of seemingly tame origins, complexity increases, challenges become more intertwined and intractable. Of course, "we never saw this coming." Most complex problems exist because of how utterly bad humans are at thinking about and comprehending systems both now and long-term. Problems on a systems-level are all interrelated to varying degrees. Addressing an issue in education inevitably leads one to look at public policy, economics, poverty, nutrition, sociocultural values systems, and so on. Yet so often, we treat these matters as "tame problems," applying the brute force of social or mechanical engineering to "solve" something like inequality or urban blight. What are wicked problems and why do the problems of today seem so frustratingly impossible to understand, let alone solve? We have no choice but to move ahead and we must do so with a holistic mindset.

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- Wed, Oct 26 **IN-CLASS VIEWING:** Ric Burns' *New York VII: Robert Moses and Jane Jacobs*
- Mon, Oct 31 **LECTURE + DISCUSSION:** Urban Design & Urban Planning
READING FOR TODAY: Spiro Kostof, *The City Shaped*, pages 43–93
SUGGESTED VIEWING: *The Human Scale*
- Wed, Nov 02 **FIELD TRIP:** Msheireb Enrichment Centre
- Mon, Nov 07 **LECTURE + DISCUSSION:** Holistic Systems and Wicked Problems
READING FOR TODAY: Rittel and Webber, "Dilemmas in a General Theory of Planning"
SUGGESTED READING: Richard Buchanan, "Wicked Problems in Design Thinking"
-  **ASSIGNMENT FOR NEXT CLASS:** Bring in two different definitions of systems from scholarly sources and other than the ones from the reading.
- Wed, Nov 09 **READING FOR TODAY:** Fritjof Capra, *The Web of Life*, "Parts to the Whole" and "Systems Theories"
IN-CLASS VIEWING: "PrairieLab: Biomimicry 101"
SUGGESTED VIEWING: *Mindwalk*; *Planetary*; *Plastic Bag*
- Mon, Nov 14 **READING FOR TODAY:** McDonough and Braungart, *Cradle to Cradle*, pages 17–44
IN-CLASS VIEWING: "The Story of Stuff" and the first 15 mins of *The Gods Must Be Crazy*
- Wed, Nov 16 **IN-CLASS VIEWING:** *Ecological Design: Inventing the Future*
 **DUE THIS WEEK:** Introduction, central argument, outline, and source material for your final essay.
- Mon, Nov 21 **DISCUSSION + IN-CLASS READING:** The "Design Disposition" and Fatih Kürsat Özenç, "D. Manifesto"
SUGGESTED VIEWING: TED Talk: Liz Coleman, "A Call to Reinvent Liberal Arts Education"
- Wed, Nov 23 **LISTEN FOR TODAY:** *99% Invisible*, episode 114, "Ten Thousand Years"
SKIM FOR TODAY: Sandia National Labs WIPP Report. Look specifically at the design proposals.
- Mon, Nov 28 **CASE STUDY:** Patient Experience and Organizational Design at UPMC

Ethics

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- Wed, Nov 30 **READING FOR TODAY:** Richard Buchanan, "Design Ethics" and "Human Dignity and Human Rights"
IN-CLASS ACTIVITY: Ethical conundrums with Prof. David Emmanuel Gray
SUGGESTED READING: *Good Magazine*, Issue 6, "Is there Design this Good that Doesn't Kill People?"
SUGGESTED READING: Mike Monteiro, "In Praise of the AK-47"

Conclusion

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- Sun, Dec 04 **FINALS WEEK:** Fourth and Final Essay: Wicked Problems
 Papers due at 11:59 pm, Sunday, December 04
SUGGESTED VIEWING: Cameron Sinclair, Interaction 16: www.vimeo.com/159371829