California College of the Arts

BFA Interaction Design

IXDSN-2100-1

Systems

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[redacted]

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Course Description

This course explores the design of systems, information and interface for human use. The design of systems includes the ability to model complex ecosystems and design for multifactor experiences (including customer data, information and wayfinding and “unknowables.”).

Students will explore different ways to consider information architecture and thorough systemic thinking for effective navigation, wayfinding, searching, and exploration of information. Students will model ecosystems and define leverage points within the system and apply that thinking to a variety of projects.

Students will learn to visualize and articulate both simple and complex systems through models and analysis. And how to evaluate and analyze the success of a system to achieve the intended goals.

Course Learning Outcomes

At the end of the course, students will be able to:

- Identify and map systems used by both humans and machines, including system goals, component parts, inputs, outputs, feedback loops, and context.
- Design wayfinding and placemaking tailored for a specific audience, purpose, and location.
- Identify and work with information within systems in order to build human-usable, information-rich environments with excellent user experiences.
- Understand how to influence complex systems effectively in order to effect lasting change at a systems scale

Projects

1.	Mapping a System for Different Audiences - Poster	15%
2.	Wayfinding - audit & redesign	10%
3.	Using Information to Build a Business - interaction plan	25%
4.	Effecting Change in Complex Systems - persuasive case	30%
	Total	80%

Any assigned work needs to be prepared and ready for review and/or discussion at the beginning of class - this means posted to the appropriate Classroom page, file named as requested AND printed out for class critique as instructed including your name, the name of the project and date on the artifact.

Homework

In addition to making maps and models, readings will be assigned each week. Sketchnotes of your readings are an integral part of the course and help retention of the material. In most cases, you may do ONE sketchnote for the week's readings - either as a composite or pick the most salient reading to summarize.

Grading for sketchnotes is as follows:

Great sketchnotes - turned in on time	**10 points**
Okay sketchnotes - turned in on time	**9 points**
Name and date only - turned in on time	**6 points**
Name and date missing	**5 points**
Late more than 2 class meetings	**0 points**

This is a studio course that requires hands-on practice and participation.

Students are expected to participate fully in-class, provide thoughtful feedback to their peers, and behave in a professional manner.

Unless otherwise approved, only Systems work may be done in class.

Grading

80% Projects
This includes homework assignments, sketchnoting your readings, in-class activities, team projects and unit projects (including final work and ALL process work). Quality of deliverables as well as strong conceptual thinking will be assessed.

15% Homework assignments
This includes homework assignments, including sketchnoting your readings. Quality of deliverables as well as strong conceptual thinking will be assessed. Leading an in-class game is part of this grade.

5% Attendance & Participation
Attendance (see Attendance Policy, below), involvement in discussions, critiques, and group work, and being fully and meaningfully present and prepared for each class. Participation in in-class games is part of this grade.

Numerical Scores for the entire course semester
At CCA, grades generally follow this scheme: 90% or higher is an A of some sort; 80% or higher a B; 70% a C, 60% a D, and 50% an F. Because a score at or below 50% is a failing grade, the lowest possible numeric score in this course will be 50%, i.e., 50 of 100 or 5 of 10.

Letter Grades
The Sophomore course rubric outlines expectations regarding course work. Below a C-minus is considered failing. A C-minus (71.5 of 100) or lower at mid-term is considered a warning and will result in an Interim Progress Report. Students have the opportunity to improve their overall grade by the end of the course.

Deadlines

Deadlines manage the process for any organization. Students are expected to have all of their assignments delivered on time by the start of the class in which they are due.

Late projects will be dropped one letter grade (10%) per class session.

Late homework assignments (including sketchnotes) will not be accepted.

Feedback & Critiques

Students will receive feedback in the form of class critiques (from fellow students, the instructors and guests), 1:1 meetings with the instructors, and numeric and letter grades.

Students will receive most feedback from class crits, supplemented by 1:1 sessions with instructors throughout the course. Students are expected to consider all feedback, whether from fellow students, instructors or guests, and provide constructive feedback to their peers.

One of the main learning exercises in this course is the design critique. The goal of design critiques is to learn to present design work, learn to view design work, and engage in a critical conversation. To participate in a design critique, one must pay attention to what is being presented, and verbalize questions and comments.

We will be building this skill throughout the semester with in-progress critiques and final critiques. Some assignments will be critiqued in process and with a final critique.

Attendance at project final critiques is required. If you must miss a critique, it is imperative that you contact the instructor before class.
Failure to attend a critique will result in a drop of one letter grade (10%) for the project. Exceptions will be made only with prior written agreement and/or a doctor's note.

Office Hours and Communication with Faculty

Your professor is available for all questions and concerns outside of course studio hours by email, Monday— Friday and will generally respond within 24 hours (exclusive of weekends). Faculty can be reached at the email address listed at the top of the syllabus.

Attendance Policy

Students must be present in the classroom for the entire class period for each scheduled class in order to fully develop skills and ideas.

The responsibility for work missed due to any type of absence rests with the student. We will keep records of attendance and tardiness for every class. Excused absences include a death in the family, sickness (with doctor's note) and religious commitments. Personal issues must be discussed with the instructors and reported to CCA counseling services to determine if they are considered excused or unexcused.

Three unexcused absences (20% of the total contact hours) will result in a student failing the class. Being late three times (more than 10 minutes) is equivalent to one unexcused absence.

Sketching, Process Documentation & Materials

You are required to keep detailed records of your working process, in the form of drawings, storyboards, photos, writing, and any other artifacts you use. This process documentation (or a copy of it) is to be submitted as part of each project in order to show the development of your ideas and presentation materials.

A dedicated journal or sketchbook is recommended. The size or format is up to you and it should be understandable and meaningful and descriptive drawings/diagrams.

Additional recommended supplies include:

- Black Sharpies of at least 3 different weights (fine, medium, and chisel),
- Colored highlighters and pens
- Pencil, eraser, ruler

Software tools:

- Presentations: Apple Keynote, Google Slides
- Word processing: Apple Pages, Microsoft Word or Google Docs
- Diagramming: Figma, Lucidchart, Omnigraffle, Adobe Photoshop, Illustrator, etc.
- PDF preparation: Adobe Acrobat

Assistive tools and Generative Artificial Intelligence (AI)

Use of tools, services and resources for proofreading, correcting, and polishing student work is permitted and encouraged during creative and academic projects. Such tools include English spelling and grammar checkers and stylistic assistants. These tools may be used only to enhance students' original work.

Students may not use generative artificial intelligence such as ChatGPT, unless it is specifically permitted for a given assignment. Rationale: Systems Thinking, Information Architecture, and the other topics in this course are largely analytical and problem-solving methods. In order to show they have learned the material, students must generate and express their own ideas, and not rely on the analysis provided by some other entity.

On those select occasions when use of AI is permitted, students must label any material generated and/or significantly altered or enhanced by AI and must not present such material as their own original work. Specifically, if an authorized AI app was used at any point in the process of completing an assignment, students are required to **document their prompt** as well as the **AI response via text** and screen captures of AI-generated text and images along with the date on which the results were produced.

Classroom Etiquette

This course requires hands-on practice and participation. Students are expected to participate fully in-class, provide thoughtful feedback to their peers, and behave in a professional manner.

Unless otherwise approved, only Systems work may be done in class. CCA classrooms, shops and other facilities exist to create an efficient learning environment that many people share and use. Please be tidy and respectful of your peers.

The use of cell phones, texting, or social media is prohibited in the classroom unless you have made special emergency contact arrangements with your teacher.

If class meets remotely, you are to be fully present and engaged in all class discussions and activities, and not using other apps, visiting other sites, responding to messages or alerts, or doing any other online or offline activities. If you must step away, indicate your status.

Additionally, when **guest speakers are present** and when your classmates present their work, you are to give them your full attention, and refrain from using your laptop or phone.

Creative Rights and Responsibilities

The Academic Environment: CCA strives to provide an academic environment that supports and challenges our students to grow, learn and create. Students, staff and faculty share a responsibility for creating and maintaining such an environment. Behavior that is disruptive to the learning process of others will be addressed.
Responsible Expression: The college encourages frank discussion and honest expression in the studio and classroom. Art and learning require the open exchange of different ideas and perspectives. However, each individual's freedom of expression must also be weighed with our

shared goal of creating a vibrant and inclusive artistic and intellectual community. CCA does not condone expression that singles out specific people or groups for gratuitous insult or that interferes with the learning experience of other members of the college community.

Academic Integrity Code: CCA students are expected to maintain standards of academic integrity. While collaboration with colleagues is generally encouraged and even required for many assignments, the college defines four types of academic dishonesty you need to be aware of: Cheating, Fabrication, Plagiarism, Facilitating academic dishonesty, or intentionally or knowingly helping or attempting to help another to violate any provision of this code.

http://www.cca.edu/students/handbook/integritycode

Course Outline

Class 01 08/29		Class Introduction Intro to Systems; Mapping Systems - Mind Maps Sketchnoting **READ:** Ch 1 and 4 from the *Ultimate Book of Mind Maps*, and the article Mind Mapping. Ch 2 from *Closing the Loop - A Systems Mindset* by Sheryl Cababa
09/02		**LABOR DAY HOLIDAY - NO CLASS**
Class 02 09/05		**Intro to Project 1** **Mapping a System for Different Audiences** Iceberg Models, Cluster Maps, Concept Models **READ:** Chapter 3 of *The Systems Thinker*
Class 03 09/09		Behavior Over Time Diagrams Stock Flow Diagrams **READ:** Chapter 1 of *Thinking In Systems* by Donella Meadows
Class 04 09/12		Connection Circles **READ:** Chapter 3 of *Thinking in Systems* by Donella Meadows
Class 05 09/16		Causal Loops **READ**: Read the two parts of the article: Fine Tuning Your Causal Loop Diagrams
Class 06 09/19		Purpose of Systems, Adjusting Models for Different Audiences **READ**: Chapter 2 of *Mapping Experiences* by Jim Kalbach
Class 07 09/23		Working session **READ**: Ch. 4 *Systems Thinking for Social Change*
Class 08 09/26		Working session
Class 09 09/30		**Project 1 Critique** **Intro to Project 2**

		Wayfinding - audit & redesign **READ:** Chapter 2 of *Ambient Findability* about the history of wayfinding
Class 10 10/03		Wayfinding: Live-Mapping a Moving System **READ**: Chapters 2.2 & 3 from the *Wayfinding Handbook* by David Gibson
Class 11 10/07		Neighborhood Identities: Research planning **READ**: Article by Jorge Arango about Placemaking and Disney
Class 12 10/10		Working session
Class 13 10/14		**Project 2 Critique** **Intro to Project 3** **Using Information to Build a Business - interaction plan** **READ**: Chapters 1 and 4 of *Conceptual Models* and the article Conceptual Models in a Nutshell by Jeff Johnson and Auston Henderson.
Class 14 10/17		Mid-term check in Architecture Models, Data Models **READ**: Ch 1 & 3 - How to Make Sense of Any Mess - http://www.howtomakesenseofanymess.com/ Read a brief history of information architecture - http://journalofia.org/volume3/issue2/03-resmini/
Class 15 10/21		Metadata, taxonomy, classification **READ**: Chapter 6 - Make Sense of Any Mess - http://www.howtomakesenseofanymess.com/chapter/6/play-with-structure/ Read the essay The System of Information Architecture by Peter Morville
Class 16 10/24		Experience maps & Customer Journey maps, information in transactions

		READ: Carrie Webster, Information and Information Architecture: The BIG Picture, Smashing Magazine, July 2020 https://www.smashingmagazine.com/2020/07/information-architecture-big-picture/ Read pages 45-57 Intertwingled by Peter Morville
Class 17 10/28		Business models; systems models of businesses **READ**: Ch5. *Closing the Loop* by Sheryl Cababa
Class 18 10/31		Ethics in systems **READ:** Ch 2. *Future Ethics* by Cennyd Bowles
Class 19 11/04		**Project 3 Critique**
Class 20 11/07		**Intro to Project 4** **Effecting Change in Complex Systems - persuasive case**
Class 21 11/11		Leverage points, research **READ**: Leverage Points: Places to Intervene in a System
Class 22 11/14		Systems archetypes; systems analysis; Student presentations **READ**: The first 3 pages of Chapter Six: Leverage Points in Meadows: *Thinking in Systems*. That's pages 145-147. (Stop before 12. Numbers.)
Class 24 11/18		Systems thinking habits; ecosystem mapping **White papers due; Draft models due**
Class 24 11/21		Agents of Change - Persuasion & Behavioral Economics **READ**: Read chapters 3 and 6 of *Boundless Mind Digital Behavioral Design*
Class 25 11/25		Ecosystem Mapping **READ**: Dancing with Systems - Donella Meadows
BREAK		THANKSGIVING 11/28-12/01

Class 27 12/02		Dancing with Systems; Social as a system **Revised Models due**
Class 28 12/05		Working Session
Class 29 12/09		**Final Critique - Project 4**

Readings

There will be readings assigned during the class from books and articles. The following resources are potential readings and good additions to your library.

REQUIRED BOOKS
Donella Meadows: Thinking in Systems: A Primer
This book is available online at https://wtf.tw/ref/meadows.pdf

Paperback can be purchased at https://www.chelseagreen.com/product/thinking-in-systems/
Or
Amazon: https://www.amazon.com/Thinking-Systems-Donella-H-Meadows/dp/1603580557
New Paperback runs about $12 / Used starts at $5
The library has a copy on hold for reading in the library
You may also find other students willing to sell you their copy. I will provide the first couple of chapters while you order the book.

Audiobook can be purchased at
https://www.chelseagreen.com/product/thinking-in-systems-audiobook/

ADDITIONAL BOOKS & ARTICLES - chapters & links will be provided
Ch 1 and 4 - *Ultimate Book of Mind Maps*, and the article Mind Mapping.
Ch 2 - *Closing the Loop - A Systems Mindset* by Sheryl Cababa
Ch 3 - *The Systems Thinker* by Albert Rutherford
Two parts of the article: Fine Tuning Your Causal Loop Diagrams
https://thesystemsthinker.com/fine-tuning-your-causal-loop-diagrams-part-i/?authuser=0
https://thesystemsthinker.com/fine-tuning-your-causal-loop-diagrams-part-ii/?authuser=0
Ch 2 - *Mapping Experiences* by Jim Kalbach
Ch 4 - *Systems Thinking for Social Change* by David Stroh
Ch 2 - *Ambient Findability* by Peter Morville
Chapters 2.2 & 3 - *Wayfinding Handbook* by David Gibson
3 Placemaking Lessons from the Magic Kingdom by Jorge Arango

https://uxdesign.cc/3-placemaking-lessons-from-the-magic-kingdom-4263deb29b2f#.rafk8vrc0
Ch 1 and 4 -f *Conceptual Models* and the article Conceptual Models in a Nutshell by Jeff Johnson and Auston Henderson
Ch 1 & 3 & 6 - *How to Make Sense of Any Mess* - http://www.howtomakesenseofanymess.com/
A brief history of information architecture by Andreas Resmini - http://journalofia.org/volume3/issue2/03-resmini/
The System of Information Architecture by Peter Morville
Information and Information Architecture: The BIG Picture, by Carrie Webster, Smashing Magazine, July 2020
https://www.smashingmagazine.com/2020/07/information-architecture-big-picture/
Pages 45-57 *Intertwingled* by Peter Morville
Ch 5 - *Closing the Loop* by Sheryl Cababa
Ch 2 - *Future Ethics* by Cennyd Bowles
Ch 8 - Metaphor from *Pixels in Place* by Kate O'Neill
Leverage Points: Places to Intervene in a System by Donella Meadows
The first 3 pages of Chapter Six: Leverage Points in Meadows: *Thinking in Systems*. That's pages 145-147. (Stop before 12. Numbers.)
Ch 3 and 6 - *Boundless Mind Digital Behavioral Design*
Ch 1 The Ethics of Design in *Ruined by Design*, by Mike Monteiro
Dancing with Systems by Donella Meadows

Other Resources:
Leyla Acaroglu: *Tools for Systems Thinkers* - 12 Archetypes
https://medium.com/disruptive-design/tools-for-systems-thinkers-the-12-recurring-systems-archetypes-2e2c8ae8fc99

Daniel H. Kim: *Systems Archetypes at a Glance*
https://thesystemsthinker.com/wp-content/uploads/2016/01/PG01E-System-Archetypes-at-a-Glance.pdf

Systems & Us: Archetypes
https://systemsandus.com/archetypes/

Waters Center for Systems Thinking: *Systems Archetype Courses*
https://thinkingtoolsstudio.waterscenterst.org/courses/archetypes

Erin Malone: *Using Mapping to Scope a System*
https://medium.com/tangible-ux/using-mapping-to-scope-a-system-b467564a80e2

A Guide to Maps & Models for UX Designers by Erin Malone