IXDSN-210

Systems Syllabus

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* Class meeting times: **4 to 7pm MW**
* Meeting Location: **CCA SF/80 Carolina, Room 101**
* **Office hours by appointment**

# Course Overview

In a world where data resides in the cloud and access is achieved with various devices used in different contexts, designing in terms of systems is a crucial part of delivering useful and compelling user experiences. However, the value of a systems approach to interaction design problems goes much deeper than the current networked world in which we live and gets at the essential nature of interactivity, communication and information itself. This course will introduce you to classical system theory, explore its application to user experience design and provide you with practice with tools for prototyping and sharing your ideas.

# Learning Objectives

1. Gain an understanding of the basic concepts and vocabulary of classical system theory and how it can be applied to real world situations through models.
2. Learn to apply system concepts to the design of software experiences through a specific modeling framework, The Digital Machine.
3. Develop skills for communicating system thinking concepts through diagrams, wireframes and software prototypes.

# Grading Policy

There will be 100 points possible in the class distributed across lessons, projects and participation evaluations. While all grading necessarily contains some degree of subjectivity, it is our intention is to make the process as transparent as possible and so we will include a detailed evaluation rubric with all lessons and project briefs.

## Lessons - 30 points

Lessons are standalone deliverables intended to teach you a particular aspect of system design. There will be 10 lessons, each worth 3 points.

## Term Project - 50 points

The term project, delivered in two graded phases, each of approximately one month duration, will require you to synthesize a variety of system design skills and concepts. The deliverables for each phase will be worth 25 points.

## Participation - 20 points

Your participation grade is made up of two parts. The first is to do with in-class participation. While this is a studio class, there will be treatment of theory, communicated through readings, lectures and in-class discussion. Readings must be completed **before** the class in which they will be discussed.

Class participation will be scored according to this rubric:

| **Dimension** | **Pass (1)** | **Fail (0)** |
| --- | --- | --- |
| Attendance | Student is always on time. | Student is frequently tardy |
| Preparation | Student has reviewed the assigned material and made a reasonable effort to synthesize it | Student has not prepared the material or prepared to the most cursory degree |
| Attitude | Student is enthusiastic and fully engaged and positive | Student is frequently sullen, sarcastic or otherwise negative |
| Collaboration | Student is inclusive, collaborative and seeks to encourage the same in others | Student is exclusive, reluctant to help others or actively undermines others |
| Discusion | Student contributes to class discussion with questions, opinions and observations | Student rarely if ever speaks up in class discussion |

The other half will be determined by two 1:1 discussion sessions you are required to schedule once before Spring Break and once after. These sessions are an opportunity for you to get help with any aspect of this class, including assignments, readings, lectures and so forth.

1:1 participation will be scored according to this rubric:

|  | Shows up on time for discussion | Provides topic for discussion in advance | Does not setup meeting or misses meeting |
| --- | --- | --- | --- |
| H1 (02/03-03/26) mtg | 2 | 3 | 0 |
| H2 ( 04/02-04/21) mtg | 2 | 3 | 0 |

## Final Grading

Your final course grade will be determined by your total point score as follows:

**A = 100**

A- = 95

B+ = 91

**B = 87**

B- = 83

C+ = 79

**C = 75**

C- = 71

D+ = 67

**D = 63**

**F = 60**

The table lists the upper bound for a given grade so, for example, a score of 89 would be a B+. Note that per CCA policy, a grade of C- or lower will require you to repeat the course.

# Required Course Materials

* Tom Stoppard, Arcadia
* Donella Meadows, Thinking in Systems
* Peter Checkland & John Poulter, Learning for Action

# Attendance Policy

Students must be present in the classroom for the entire class period for each scheduled meeting of the semester in order to meet the class learning objectives. Class will include discussions, critiques, lectures, and other learning activities. Students are expected to arrive on-time and remain present for the entire period scheduled.

Records of attendance and tardiness will be kept for each class. Three unexcused absences will result in a failing grade for the class. Being late three time (more than 5 minutes) will be treated as equivalent to one unexcused absence.

You are expected to inform your instructor of any absence before the start of the class you will miss. Excused absences will be granted only in the case of personal illness or a family emergency. Any other type of absence, even if pre-notified, will not be excused. Missing class does not excuse you from completing any of the assignments due for that class.

# Studio Etiquette

CCA classrooms, shops, and other facilities exist to create an efficient learning environment. Many people will share the same space as your class. It is imperative to leave your spaces orderly and clean. This means removing your personal and course-related items from the space and leaving a clean work area. There is no storage for your belongings.

Instructors will note when use of laptops is allowed in class. However, the use of laptops does not mean that you can use social networking sites, email, and so forth. (See below.)

The use of an iPod, iPhone, or similar music device during class requires instructor approval. Most of the time in your class is about building a collaborative, supportive environment for work, and "plugging in" will obstruct your ability to be present and contribute in class.

You may not use your cell phone, mobile device, or iPad while in class. The use of phones and tablets is prohibited unless you have made special arrangements with your teacher due to extenuating, emergency circumstances. This includes checking for and/or sending text messages, checking social networks, etc.

No talking on cell phones in the studio, even when classes are not in session. Those who share the studios with you do not want to be disturbed. Please go outside, unless there is a safety issue that needs to be addressed.

About social networking and email during class: While we will address social, digital tools through this class, it is not acceptable during studio work times, design activities, or lectures by the teacher or visiting teachers. In-class usage outside the context of the course will not be tolerated and it will impact your class participation grade.

# Academic Integrity Code

CCA students are expected to maintain standards of academic integrity. The college defines four types of academic dishonesty:

1. **Cheating**, or the intentional use or attempted use of unauthorized materials, information, or study aids in any academic or studio exercise.
2. **Fabrication**, or the intentional and unauthorized fabrication or invention of any information or citation in any academic or studio exercise.
3. **Plagiarism**, or the intentional or knowing representation of words, images, concepts, or ideas of another as one's own in any academic or studio exercise.
4. **Facilitating academic dishonesty**, or intentionally or knowingly helping or attempting to help another to violate any provision of this code.

The Academic Integrity Code is to be upheld and enforced by all CCA students and faculty members. Depending on the nature or severity of the incident, violations of this code may result in academic and/or disciplinary sanctions up to including the failure of the course and dismissal from the college.

# 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. While classrooms, studio spaces and teaching styles may vary, all of these environments must be safe places where every student has the ability to strive and succeed. These are collaborative settings where the needs of the individual student must be balanced with the overall needs of the group. 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. All students at CCA should feel free to take reasoned exception to the data or views offered in their course of study and to create art that expresses their ideas with boldness and conviction.

However, each individual's freedom of expression must also be weighed with our shared goal of creating a vibrant and inclusive artistic community. For this reason, 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. Repeated abusive or disruptive expression or expression in a manner that violates the college's policies against unlawful discrimination and harassment may lead to disciplinary action.

Students have the right to receive candid feedback on their work that is presented in a thoughtful, respectful and constructive manner. Every student has the responsibility to accept feedback with an open mind and respond to it in a respectful and mature manner. Creative work should not pose a threat to others, the community, or the creator in any fashion. Any work that is submitted for review that violates or depicts violations of college policy or local, state or federal law may be subject to disciplinary action.

IXDSN-210

Systems Schedule

*Note:*

## *Items listed for a day occur on that day. So a reading or deliverable assigned to a day is due that day and must be submitted/prepared BEFORE class begins.*

Weeks 1-5

### System Theory

Wed Jan 22, 2014

* Activity: Expectations, Hopes & Fears
* Lecture: Class Mechanics
* Lecture: Instructor's Backgrounds
* Lecture: Why Systems?

Mon Jan 27, 2014

* Lecture: Visualizing Systems
* Introduce Lesson 1 - Systems in Arcadia
* Is Tom Stoppard's Arcadia the greatest play of our age?
* Stoppard, Arcadia

Wed Jan 29, 2014

* Lesson 1 - Systems in Arcadia
* Lecture: Diagramming Basics
* Introduce Lesson 2 - Relationships

Mon Feb 3, 2014

* Introduce Lesson 3 Terminology
* Lesson 2 - Relationships
* Meadows, Chapters 1,2

Wed Feb 5, 2014

* Introduce Term Project
* Lesson 3 - Terminology
* Meadows, Chapters 3,4

Mon Feb 10, 2014

* Activity: The Beer Game
* Harnessing the Power of Feedback Loops
* Introduce Lesson 4 - Feedback
* Lecture: Feedback

Wed Feb 12, 2014

* Lesson 4 - Feedback
* Term Project Proposal Draft

Mon Feb 17, 2014

* Meadows, Chapters 5,6￼￼￼￼￼￼￼￼￼￼￼￼
* Lecture: Patterns & Boundaries
* Introduce Lesson 5 - Archetypes

Wed Feb 19, 2014

* Activity: Modeling Workshop
* Dubberly, Model of Models
* Dubberly, What is Interaction?
* Lesson 5 - Archetypes
* Term Project Proposal Final

Weeks 6-9

### Modeling a System

Mon Feb 24, 2014

* Lecture: Creating a Basic Website, HTML, FTP
* Lecture: How the Internet Works

Wed Feb 26, 2014

* Checkland, preamble, Chapter 1
* Lecture: Website Appearance, CSS
* Lesson 6 - Basic Website

Mon Mar 3, 2014

* Checkland, Chapter 2
* Lecture: Adding Interactivity to a Website, Javascript, jQuery
* Lesson 7 - Styled Website

Wed Mar 5, 2014

* Lecture: Using a UI Framework, Bootstrap
* Lesson 8 - Interactive Website

Mon Mar 10, 2014

* Can Hospital Chains Improve the Medical Industry?
* Studio

Wed Mar 12, 2014

* Term Project Phase 1 - Modeling (Draft)

Mon Mar 17, 2014

* Dedicated Studio

Wed Mar 19, 2014

* Term Project Phase 1 - Modeling (Final)

>Spring Break<

Weeks 11-15

### The Digital Machine

Mon Mar 31, 2014

* Lecture: Systems to Software
* Lecture & Activity: Concept Model

Wed Apr 2, 2014

* Lecture & Activity: Personas
* Studio - Persona & Concept Model

Mon Apr 7, 2014

* Critique - Persona & Concept Model
* Lecture & Activity: Object Model

Wed Apr 9, 2014

* Critique - Object Model
* Lecture & Activity: Data Model

Mon Apr 14, 2014

* Critique - Data Model
* Lecture & Activity: Interaction Model

Wed Apr 16, 2014

* Critique - Interaction Model
* Lecture: Wireframing
* Studio

Mon Apr 21, 2014

* Discussion - Wicked Problems
  + Rittel, Dilemmas in Planning
  + Dubberly, Why Rittel Matters
* Studio

Wed Apr 23, 2014

* Term Project Phase 2 - Prototype (Draft)

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* Studio
* Lesson 9 - Built System: Practice

Wed Apr 30, 2014

* Studio
* Lesson 9 - Built System - Competition

Mon May 5, 2014

* Discussion - Meadows, Ch 7
* Studio

Wed May 7, 2014

* Final Critique - Term Project Phase 2