As with many things at ID, our courses and their descriptions evolve organically. Most of the descriptions are complete; missing pieces will be added as quickly as possible. Please contact your advisor or the faculty member directly if you have questions about a particular course.

Some courses are not offered every semester.
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IDN 481 Introduction to Design 1
Faculty: Jeff Mau

Course Overview
This course builds a contextual basis for the field and profession of design. Designers of the highest caliber offer not only excellent formal skills and conceptual rigor, but also an intellectual grasp of the professional practice of design, including evolution through history, current state and future direction. Broad knowledge of the field of design, and the different areas of practice, will help students more effectively pursue opportunities of the greatest interest. The practical requirements for pursuing design-oriented roles will be addressed, including basic portfolio expectations. Supplementary assignments and a few exercises will be woven into the course.

Learning Objectives
• The course will help students become more fluent in matters of design practice and cultures. Students will develop a more grounded perspective on design disciplines (or areas of practice) of greatest interest.
• Students will complete readings, light research work and build their skills and confidence addressing their colleagues. Assignments will be both individual and team-based.
• Activities will help foster a practical appreciation of the basic formal design skills that complement the conceptual thinking at the core of ID’s curriculum.
• Ideally, students will also participate in field trips and dialogues with active professionals as source of input for the professional practice content.

Learning Outcomes
• Students will develop a better design vocabulary
• Students will demonstrate a more grounded knowledge of the state of professional practice
• Deeper perspective on where to focus individual energy in the balance of time at ID
• Improved grasp of the most basic design tools and building blocks

Course Outline
1. Introductions + Overview: Defining Design
2. Design Vocabulary
3. Facilitated Discussion: Historic Essays
4. Field Trip
5. Professional Practice
6. Facilitated Discussion: Contemporary Essays
7. Drawing Exercises
8. Building Blocks
9. Portfolio Basics & Reviews
10. Final Presentations

Format & Grading
Grading is based approximately weighted as follows: 40% constructive class participation, 40% completion and quality of assignments, 20% demonstrated resourcefulness; regular, active participation is crucial. Absences must be excused; for each unexcused absence a single letter grade reduction penalty is applied.

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
IDN 482 Introduction to Design 2
Faculty: Jeremy Alexis

Course Overview
This intent of this course is to build a baseline of knowledge & familiarity with the professional practice of design—across disciplines, applications and environments.

Learning Objectives
The course will address a range of current professional practices, including the traditional core disciplines, the current landscape and converging fields. The basic set includes: product design; communication + graphic design; design planning; design research; interaction design; service design; design education

Learning Outcomes
- **Context**: How design and design education has evolved (from the WWII to the present). You will understand why we do things the way we do, and what makes design distinctive.
- **Criticism**: How to think critically about the design profession and your role in the field of design. You will be able to identify what works and what does not, and make recommendations for improvement.
- **Connections**: How design connects and works with other disciplines, including marketing, strategy, engineering, and operations.
- **Communication**: How to talk about the value you can create as a designer (for people and organizations). You will be able to articulate your relevant skills and experience in order to help you get a job / consulting work / teaching.

Course Outline
< TBD >

Format & Grading
Classes will be conducted as discussions, presentations and working sessions. Though the class style is casual, attendance & constructive participation are vital. The class participants will be asked to inform one another with grounded consideration of the skills, activities, challenges, common tools and leading players associated with each respective discipline.

Opportunities to engage the class with a guest speaker or field trip will occur during the semester. Generally, these are aligned with a specific area of practice, to provide grounded exposure to a field. The scheduling of guests' participation is typically volatile—expect changes in sequencing or timing. Field trips and guest speakers have historically been weighted towards the B-session.

Individual grading will be based on the following criteria:
- Attendance
- Completion of all assignments
- Constructive contributions to class activities
- Quality + design of presentations + assignments
- Resourcefulness + demonstrated progress

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
IDN 483 Intro to Communication Design 1
Faculty: Tomoko Ichikawa

Course Overview
This course will provide the fundamentals for conveying visual information in a way that is effective and clear. Through a deep understanding structure and context of content, students will learn to apply visual elements, techniques, and principles crafting effective visual messages.

Learning Objectives
Students will understand the techniques and elements they have to manipulate as designers, and equally demonstrate the ability to apply them to the creation of clear visual messages.

Learning Outcomes
Through weekly and in-class assignments, students will apply techniques covered to craft effective visual messages

Course Outline
1. Introduction, Typography 101
2. Arrangement
3. Contrast
4. Imagery
5. Introduction to information types
6. Comparisons/abstract
7. Comparisons/physical
8. Process
9. Context of Use
10. Final

Format & Grading
The class meets for the full day. The morning session will consist of project assignments, critiques and lectures. Homework will be critiqued every morning session. The afternoon session will start off with either a continuation of the morning critique or additional lecture and in-class exercise. If there is no exercise, studio time will be used to start your homework assignments, closing with an evaluation session.

A constant stream of your effort throughout the semester in the form of assignments and class participation will be the basis of your grade. Each week you will be required to do something new to demonstrate cumulative knowledge throughout the semester. Timeliness is critical; late assignments will be marked down one grade. Also, due to the cumulative nature of the work, there will be no mid-term or final project.

There will be 2-3 formal opportunities in the semester for a face-to-face feedback session to let you know how your progress is going.

Assignments
There are two types of assignments: weekly and in-class. Weekly or bi-weekly assignments will focus on the main topic at hand. Students will be introduced to the basic elements of Communication Design in the first third of the semester. Then, you will apply these elements using techniques and principals to actual real-life content. Afternoon, in-class assignments (aka 'Quick Fire' exercises) will augment that week's topic or complement it. This will allow you to get real-time feedback during class before tackling the larger assignment for that week.

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
IDN 484 Intro to Communication Design 2
Faculty: Radhika Gupta

Course Overview
This course builds on the previous exploration of basic concepts of visual communication design. Through this course students will continue to investigate the elements, layout, and information structures within the context of a branded visual identity system. This course focuses on a holistic approach mindful of brand attributes such as: message, meaning, audience, personality and tone, context of use, and execution. Together, we will examine the rules and decisions applicable to create visual consistency across multiple communication touch-points.

Learning Objectives
Explore and understand how elements and approaches affect the efficacy of a crafted communication
- Graphic elements (type, color, image, scale, balance, rhythm)
- Grid structures (multi-column, symmetrical, asymmetrical)
- Information structuring (function, hierarchy, weight, consistency, contrast)

Learning Outcomes
When completed, students will be able to craft a consistent and compelling system of communication artifacts demonstrating their knowledge of the principles and practice involved.

Course Outline
1. Introduction, Brand
2. Grid, Visual Research
3. Logotypes and marks
4. Typography 201
5. Color
6. Context of use: Web application
7. Context of use: other touch points
8. Storytelling
9. Final Presentation

Format & Grading
This class meets for a full day once a week. The morning session will consist of lecture, critique and homework assignment. Readings will occasionally be assigned to supplement lectures. The afternoon session will supplement the morning lecture topic through additional lectures and in-class exercises. In some instances studio time will be used to start your homework assignments.

A constant stream of effort throughout the semester in the form of completed assignments and class participation will be the basis of your grade. Assignments include single week exercises, multi-week investigations and the cumulative semester deliverable. Each week you will be required to do something new to demonstrate cumulative knowledge throughout the semester. Timeliness is critical; due to the iterative nature of the class, late assignments will NOT be accepted. Final grades will be comprised of 3 parts:

1) Professionalism + attitude | respect, mindfulness of time, participation, and presence
2) Performance + iteration | rigor and depth of exploration
3) Concept + execution | originality and appropriateness of idea, demonstration of design principles

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
IDN 485 Introduction of Product Design 1
Faculty: Marty Thaler

Course Overview
This course creates the foundation of knowledge and develops skills for three-dimensional design. At the end of this course, students should be able to explore, create, and communicate design directions for simple products and environments taking into account design principles, human factors, technology, and business issues.

Learning Objectives
Students are taught about the design process through a series of product design projects. Methods to analyze, explore, express and critique design concepts and a vocabulary of design will become familiar. Core principles for design are introduced and through iterative practice of increasingly difficult problem spaces student will gain knowledge for tackling the design of small-scale products.

Learning Outcomes
Students will understand what a design problem is, ways to structure a design problem, how to ideate using prototyping to explore their thinking and represent their solutions. Students will gain an ability to express through reasoned explanations, images and models how to represent their ideas throughout the design process. Many techniques from sketching to computer modeling are covered. A key aspect is learning the culture of design: learning through doing, being project based, working in the studio environment and actively participating in critique.

Course Outline
1. Introduction and starting out exercises
2. File folder project
3. Pedestal file project
4. Line plane volume form study
5. Lighting project

Format & Grading
The course is taught as an all day studio class. A series of projects provide students with experiences to develop their design thinking and skills. By using a structured design process, students learn to analyze problems, define issues, and develop multiple ideas leading to detailed concepts that are clearly defined and defendable. Students learn to delineate a strong point of view fitting user needs resulting in viable product solutions. An emphasis is placed on building skills in sketching, 2D and 3D visualization, paper prototyping, storytelling and presentation.

Evaluation will be based on your contribution to class discussions and reviews, and the quantity and quality of your work. Quality work is substantive, conceptually strong, and visually clear.

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
IDN 486 Introduction of Product Design 2
Faculty: Marty Thaler

Course Overview
This course builds on learning's from Introduction of Product Design 1. The objective is to create a foundation of knowledge and skill for three-dimensional design. At the end of this course, students should be able to explore, create, and communicate design directions for simple products and environments taking into account design principles, human factors, technology, and business issues.

Learning Objectives
To give students the ability to successfully work on design problems: framing opportunity areas, identifying user issues, working within constraints, prototyping throughout the design process and presenting their solutions through many forms of visualization all while developing a sensitivity to the importance of craft in design.

Learning Outcomes
Students should be able to:
• frame a product deign problem
• create multiple credible concepts
• present through reasoned explanation their product solution
• use many prototyping techniques to develop and express their thinking
• understand and utilize the design process
• critique work through a vocabulary of design
• gain experience with a wide range of product design constraints

Course Outline
1. Introduction and Housewares project
2. Toolbox
3. Digital product

Format & Grading
The course is taught as an all day studio class. A series of projects provide students with experiences to develop their design thinking and skills. By using a structured design process, students learn to analyze problems, define issues, and develop multiple ideas leading to detailed concepts that are clearly defined and defendable. Students learn to delineate a strong point of view fitting user needs resulting in viable product solutions. An emphasis is placed on building skills in sketching, 2D and 3D visualization, paper prototyping, storytelling and presentation.

Evaluation will be based on your contribution to class discussions and reviews, and the quantity and quality of your work. Quality work is substantive, conceptually strong, and visually clear.

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
IDN 487 Introduction to Photography
Faculty: Eric Hausman

Course Overview
In an increasingly visually taxed world, with people’s ability to create and consume image-based media the easiest it’s ever been, knowing how to create compelling photography that can breakthrough the content-laden din to get noticed is a valuable skill. After a grounding in general photographic and visual theory, we will apply principles of color theory, spatial abstraction and human perception to learn how to organize a photograph. Students will also spend considerable time turning their attention towards documenting the urban and architectural landscape, learning how to capture the inter-relationship between people and their environments. Lastly, students will learn to apply the tools within the controlled studio environment to create purposeful people and product portraits.

Learning Objectives
The class will teach students how to be capable image-makers by training them to be competent image-evaluators. Students will be trained on the technical, compositional and conceptual aspects of image-based visual communication. Besides lab time, class lectures and student critiques, much of the student’s education will take place outside of the classroom through students constrained experimentation with the medium. This course is intended not only to expand the students’ knowledge of the basic principles and practices of photography, but also as a compliment to the principles and practices of the main program.

Learning Outcomes
• Develop a fundamental competency of the technical aspects of digital camera operations and photographic techniques for proper image capture.
• Learn the tools of the digital darkroom (Photoshop, Lightroom, Bridge, etc.) for image processing, and for digital manipulation of two-dimensional continuous tone images.
• Establish a working understanding of the principles of image construction, via the consideration and manipulation of light, color contrast and visual gestalt as it pertains to the production of photographs.

Course Outline
• Introduction to photo technology and camera functions
• Color theory – creating color balanced photographs
• Principles of human perception
• Introduction to the social landscape
• Learning strategies for shooting on the street and your rights as a photographer
• Creating relationships between subject and their environment
• Introduction to the photo studio
• Learning the qualities of light and how to shape it
• Understanding multi-exposure techniques (stitching and stacking)

Format & Grading
30% class participation, 40% final assignments, 30% demonstrated growth

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
ID Course Descriptions, version 19

IDN 488 Introduction to Digital Media
Faculty: Zach Pino

Course Overview
The objective of this course is to introduce concepts of Digital Media to students who enter the MDES program without a prior design degree. Through three modules based on user experience and interaction design, the course will enable students to engage with different digital media tools and artifacts.

Learning Objectives
Students of this course will learn and reflect on three critical areas of Digital Media: Information Architecture, Interaction Gestalts, and Information Platforms. Students will also gain first hand experience with developing Digital Media prototypes and studies to build basic coding and interaction skills.

Learning Outcomes
Demonstrate proficiency in digital media, including but not limited to interaction design tools and methodology.

Course Outline
1: Information Architecture
Information Architecture introduces students to basic interaction design concepts including the design and architecture of information. At the end of this module students are expected to have the ability to de-construct websites, applications, and information portals into component tectonic elements.

2: Interaction Gestalt
Interaction Gestalt introduces students to Gestalt theory and extends the theory into the design and development of interactive structures and user experiences. At the end of this module students are expected to have the ability to build their own websites, applications, and information portals based on interaction gestalt frameworks.

3: Information Platforms
Information Platforms introduces students to the idea of platforms and how to design information platforms. At the end of this module students are expected to have the ability to place their concepts in a larger eco-system of information appliances, hardware, introducing multiple touch points of user experience and interaction.

Format & Grading
The course is structured in the form of a workshop meeting two half days every week. The first half hour introduces students to theoretical concepts of Digital Media while the second half hour focuses on skills and technical knowledge building. Students are expected to work on one concept through the semester taking the concept through different levels of prototyping in the three modules of the class.

Enrollment Restrictions
No prerequisites. This course is only available to Institute of Design Foundation students.
IDN 461 Design Reading, Writing, and Vocabulary Skills I
Faculty: Mary Jorgenson

Course Overview
This course will introduce strategies for design students to learn and practice ways to clearly express themselves in writing as well as improve their academic reading skills. Students will develop different aspects of writing for design, including logically organized, coherent paragraphs among others. Students will also learn to read seminar readings and other design-related writing more effectively by recognizing a writer’s tone, purpose, and audience. Strategies to determine the meaning of unknown words using context clues will also be introduced.

Learning Objectives
• how to achieve coherence in writing a paragraph.
• strategies to write a topic sentence.
• strategies to write supporting sentences.
• strategies to write a concluding sentence.
• strategies to write sentences with different structures.
• strategies to avoid overgeneralizations.
• how to write a summary of a text.
• how to paraphrase a passage of text.
• strategies to identify main ideas and supporting details in a reading passage.
• how to write a response paragraph.
• how to express one’s opinion in an academic register.
• strategies to identify a credible outside source.
• how to write and format a quotation.
• how to cite an outside source.
• how to recognize a writer’s point of view.
• how to recognize a writer’s tone, purpose, and audience.
• strategies to use context clues to understand meaning.

Learning Outcomes
Students will be able to...
1. Produce a coherent, factually-accurate, correctly-paraphrased summary of an article on a design-related topic in part by identifying main ideas and supporting details.
2. Write a response paragraph which effectively incorporates their own opinions and includes topic, supporting, and concluding sentences using different sentence structures while avoiding overgeneralizations.
3. Correctly quote and reference a credible outside source.
4. Recognize a writer’s point of view as well as infer their tone, purpose, and audience.
5. Determine the meaning of unknown vocabulary words using context clues.

Format & Grading
Students will be assessed according to their achievement/progress of course student learning outcomes (SLOs). Course components/assignments are created and matched with SLOs so that students are clear on what they need to accomplish. Grades will be calculated using the following percentages:

Various in and out of class assignments, quizzes (Determined by the instructor) 15%
Summary Paragraph + Revisions 20%
Midterm: Reading Skills + Response Paragraph 30%
Response Paragraph + Revisions 35%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 462 Design Listening, Speaking, and Presentation Skills I
Faculty: Brian Casario

Course Overview
This course will introduce higher-level communication strategies necessary for design students to achieve individual goals in academic and professional environments. Students will develop their conversational skills with extended discussions of design-related material. Students will also focus on presentation skills to assist them with presenting their own designs and design processes. Strategies for effective listening and clear American English pronunciation will also be covered.

Learning Objectives
• how to professionally greet someone.
• how to professionally state one’s name, school, and program of study.
• strategies for asking for clarification.
• strategies for understanding and utilizing polite language.
• strategies for asking for repetition.
• basic conversational conventions for beginning, maintaining, and ending a conversation.
• strategies for stating one’s opinion.
• strategies for politely agreeing and disagreeing with others.
• strategies for active listening.
• how to logically organize and structure a formal presentation.
• how to write in a simplified style appropriate for oral presentations.
• strategies for delivering a presentation in a natural, spontaneous style.
• strategies for implementing appropriate body language during a formal presentation.
• strategies for producing American-style intonation.
• how to identify main ideas, purpose, and signposts in an academic lecture.
• how to recognize reasons and explanations in an academic lecture.

Learning Outcomes
Students will be able to...
1. Greet someone new, shake hands, and clearly and confidently state their name, school, and program of study.
2. Conduct an extended group conversation on a design-related topic in which they actively listen, opine, agree and politely disagree with the opinions of others, and politely ask a speaker to repeat and/or clarify information in order to control the conversation.
3. Deliver a 10-minute formal presentation on a design-related topic with simple language, logical organization, clear structure, appropriate body language, and professional-grade visuals.
4. Pronounce written statements with appropriate American English intonation.
5. Identify main ideas, purpose, reasons and explanations, implications and signposts in an academic lecture or presentation.

Format & Grading
Students will be assessed according to their achievement/progress of course student learning outcomes (SLOs). Course components/assignments are created and matched with SLOs so that students are clear on what they need to accomplish. Grades will be calculated using the following percentages:

Various in and out of class assignments, quizzes (Determined by the instructor) All 15%
Midterm: Conversation Skills 25%
Final: Presentation Skills 30%
Standardized Quizzes 30%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 463 Cross-Cultural Communication I
Faculty: Mary Jorgenson

Course Overview
Cross-Cultural Communication I (IDN 463) will survey Chicago through excursions, scheduled during the lab portion (IDN 464), to historically significant landmarks and cultural events. Students will describe their experiences via journal writing. Students will also immerse themselves in a city neighborhood through a research project. Through the project, they will improve their research and writing skills. Placement in this course is based on placement exam results and/or the successful completion of the prerequisite course.

Learning Objectives
The course will...
• Teach how to write a descriptive brochure of city experiences.
• Introduce ethnographic methodology.
• Offer strategies for doing ethnographic research.
• Introduce how to synthesize research data and findings.
• Teach how to write a reflection journal describing personal experiences.

Learning Outcomes
Students will be able to...
1. Write journal entries describing their excursions and experiences in the city.
2. Collect and synthesize data and perform other research for their neighborhood ethnography project.
3. Create a brochure of a Chicago neighborhood.

Format & Grading
Students will be assessed according to their achievement/progress of course student learning outcomes (SLOs). Course components/assignments are created and matched with SLOs so that students are clear on what they need to accomplish. The grade for this course will be calculated using the following percentages:

Various in and out of class assignments, quizzes (Determined by the instructor) 15%
Project: Neighborhood Brochure 50%
Reflective Journal 35%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. IDN 464 Cross-Cultural Communication Lab is a co-requisite to this course.
IDN 466 Design Reading, Writing, and Vocabulary Skills II

Faculty: Mary Jorgenson

Course Overview
This course will teach advanced strategies for design students to clearly express themselves in writing as well as refine their critical reading skills. Students will develop different aspects of writing for design, including outlining and essay writing, among others. Students will also learn to read design-related writing more critically by uncovering a writer’s assumptions and evaluating an article’s validity. Strategies to determine the meaning of unknown words using word analysis will also be introduced.

Learning Objectives
what argumentation is and how to write an argument
how to write a summary-response essay
strategies to write a thesis statement
strategies to write an introductory, supporting, and concluding paragraphs
strategies to develop ideas in a paragraph with major and minor support
how to use parallel form
strategies for identifying and citing credible outside sources
how to write and format a quotation
how to introduce and explain a quotation
practice how to paraphrase a passage of text.
strategies to write with a variety of sentence types.
how to recognize a writer’s biases.
how to uncover a writer’s assumptions.
how to judge the validity of a text.
how to identify and avoid fallacies.
strategies to use word analysis to understand meaning.
how to write a personal bio
review strategies for effective resume writing
how to write a cover letter
strategies for writing about design projects

Learning Outcomes
Students will be able to...
1. Compose effective thesis statements applicable to and appropriate for design-related topics.
2. Write an outline with a summary, thesis statement, and introductory, supporting, and concluding paragraphs which incorporates three reliable outside sources both quoted and paraphrased with citations.
3. Complete an argumentative summary-response essay on a design-related topic from an outline.
4. Write and revise a design portfolio consisting of a resume, cover letter, Linkedin profile, bio, and at least three design projects.
5. Identify a writer’s assumptions and biases as well as judge the validity of a text on a design-related topic.
6. Determine the meaning of unknown vocabulary words using word analysis.

Course Outline

Format & Grading
Students will be assessed according to their achievement/progress of course student learning outcomes (SLOs). Course components/assignments are created and matched with SLOs so that students are clear on what they need to accomplish. The grade for this course will be calculated using the following percentages:

Various in and out of class assignments, quizzes (Determined by the instructor) 15%
Quiz: Thesis Statement 10%
Quiz: Outline 10%
Project: Argumentative Summary-Response Essay (Drafts and Final) 25%
Project: Job Seeker’s Design Portfolio 25%
Final: Article Validity and Vocabulary Analysis 15%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 467 Design Listening, Speaking, and Presentation Skills II
Faculty: Brian Casario

Course Overview
This course will teach advanced communication strategies necessary for design students to achieve individual goals in academic and professional environments. Students will develop their conversational and critical listening skills with extended discussions on design topics. Students will also refine their presentation skills, both individually and in groups, to assist them with presenting their own design projects. Strategies for clear American English pronunciation will also be covered with a semester-length project. Students will finally practice their interviewing skills in preparation for RecruitID.

Learning Objectives
• teach how to answer a behavioral interview question.
• teach how to ask open-ended, follow-up questions which engage and extend a conversation.
• provide students the opportunity to practice thought groups.
• provide students time to identify and practice pronouncing focus words.
• provide students time to practice replicating stress patterns.
• provide students time to practice replicating intonation patterns.
• teach how to identify language that signals repetition.
• introduce how to recognize register and tone.
• teach how to infer meaning from context in an academic lecture.
• offer strategies to present in a group setting.
• outline strategies to conduct a Q&A session.
• teach how to anticipate and respond to questions and criticisms during a Q&A.

Learning Outcomes
Students will be able to...
1. Answer behavioral interviewing questions using the STAR technique.
2. Conduct an extended conversation on a design-related topic by asking open-ended and follow-up questions and maintaining a formal register appropriate for an academic and/or professional setting.
3. Deliver a 15-20 minute formal group presentation on a design-related topic as well as conduct a Q&A/critique session by anticipating questions and criticisms and professionally responding to them.
4. Recreate two minutes of authentic American English discourse with accurate intonation, stress, and pronunciation.
5. Recognize register and tone, language that signals repetition, as well as infer meaning from context in an academic lecture or presentation.

Format & Grading
Students will be assessed according to their achievement/progress of course student learning outcomes (SLOs). Course components/assignments are created and matched with SLOs so that students are clear on what they need to accomplish. The grade for this course will be calculated using the following percentages:

Various in and out of class assignments, quizzes (Determined by the instructor) 15%
Midterm: Interview + Conversation 25%
Final: Group Presentation + Q&A 30%
Project: Pronunciation Skills 20%
Quiz: Listening Skills 10%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 468 Cross-Cultural Communication II
Faculty: Mary Jorgenson

Course Overview
Cross-Cultural Communication II (IDN 468) will explore U.S. culture through excursions around Chicago, scheduled during the lab portion (IDN 469), in order to reflect on various cultural issues. Students will compare and contrast their cultural experiences in the U.S. with where they come from through both journal writing and a final presentation. Placement in this course is based on placement exam results and/or the successful completion of the prerequisite course.

Learning Objectives
The course will...
1. Teach how to conduct interviews.
2. Provide strategies for presenting ethnographic research.
3. Teach how to write a reflection journal comparing cultural experiences.

Learning Outcomes
Students will be able to...
1. Compose journal entries comparing their U.S. cultural experiences with those in their home country.
2. Conduct interviews with Americans on various cultural issues to gather research data.
3. Present their research findings in a 10-15 minute presentation with Q&A.

Format & Grading
Students will be assessed according to their achievement/progress of course student learning outcomes (SLOs). Course components/assignments are created and matched with SLOs so that students are clear on what they need to accomplish. The grade for this course will be calculated using the following percentages:

Various in and out of class assignments, quizzes (Determined by the instructor) 15%
Project: Cultural Differences 50%
Reflective Journal 35%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. IDN 469 Cross-Cultural Communication Lab is a co-requisite to this course.
IDN 502 Making The User-Centered Case
Faculty: John Grimes

Course Overview
This course covers the structure and the presentation of a meaningful case for change in a design context. Cases in this course are based on demonstrating a solution or a promising approach to a problem that has been defined within a framework of enumerated user values and a context, which includes user and client behaviors and capabilities as well as the competitive landscape, and enabling externalities. Public speaking principles and the use of supporting visual material are also included in the course.

Learning Objectives
To improve the student’s ability to persuade by improving overall communication skills and eliminating counterproductive, sometimes unconscious behaviors and bad habits. Develop the student’s strengths and immunize them against their irreducible deficiencies—a way of getting comfortable in their own skin.

Learning Outcomes
At the conclusion of this course, students will:
• Become comfortable speaking for and about users and their issues in a “public” context
• Improve their ability to craft compelling arguments to demonstrate their point of view
• Through practice, be better able to communicate effectively within and across teams

Course Outline
• Rhetoric: types, definitions and applications in design. Telling the Tale and Making the Case.
• The User Centered Case: a method for developing a compelling case for change.
• In depth discussion of inherency. The elevator pitch.
• Encapsulation, repetition, and links. Ways of developing and refreshing the memory of your audience.
• How to make a presentation without a solution.
• How to use materials from your development process to aid in client “buy in.”
• Introduction, Conclusion, and Solution Criteria. How the whole thing works.
• Visual vocabulary and visual rhetoric
• The questioning period. Responding to hostile questions.
• Mechanics and etiquette of presentations
• Final Presentation

Format & Grading
The class will be kept small (12-15) so that every student can present and get constructive criticism five times over the six weeks in a variety of typical, design related formats. Each week new material will be presented followed by student presentation/critique of the previous week’s assignment. Weekly assignments cover the individual parts of a user-centered case. The final project is actually being developed through the whole course and will be an eight-minute presentation with visuals (optional) tying all the parts together. The case to be developed will be chosen by each student from either a completed or current project in another class. Time spent outside of class will average three hours per week.

You will be graded solely on your individual performance in presenting whatever you have chosen. To receive this grade you must submit your notes and presentation deck, and you must attend all final presentations. Not adhering to these simple requests will result in a failing grade.

Class Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 504 Introduction to Observing Users
Faculty: Kelly Costello

Course Overview
This class will introduce students to theory and methods of behavioral observation, description, and analysis. Students will use a variety of techniques derived from cultural anthropology, sociology and behavioral psychology to develop useful, powerful approaches to gaining insight towards solving modern design and business problems. Readings and theory are integrated with observational fieldwork exercises to provide rich learning experiences both in and outside of the classroom.

Learning Objectives
● Clearly frame research goals and intent
● Plan and execute a variety of field research activities
● Develop a strong understanding of how different information gathering techniques impact data perspectives and analytic outcomes.
● Gain hands-on experience building fieldwork skills using a variety of tools
● Establish theoretical understanding of human cultural processes, behavioral schemas, and how to develop frameworks from observational data.

Learning Outcomes
Students of Observing Users will demonstrate new skills for planning and executing field research activities ranging from behavioral observation to interviewing. They will be able understand the outcomes of other people’s research and the kinds of implications that can be drawn from different approaches to user and design research.

Course Outline
1. Introductions and basic theoretical tools
2. Assemble a field observation tool kit. Be prepared to discuss the items in your kit
3. Observe and document a single environment
4. Document a complete experience. Use the 5 E model to analyze and interpret findings
5. Frame the research and craft a plan
6. Learn to capture and create empathy for a deeper understanding of users
7. Conduct a small design research project with observational research
8. Create participant profiles and analyze data
9. Develop journeys or other experience models
10. Present final work

Format & Grading
Each class usually has a lecture discussion component and critique component. In the first half of class we typically discuss the assigned readings and other salient issues. In the second half, review work with an eye toward developing technique, building skills and talking through alternatives. This course is graded based upon class participation (1/3), completion and experimentation with research techniques during field exercises (1/3) and completion of final project (1/3).

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
ID Course Descriptions, version 19

IDN 506 Research Planning & Execution
Faculty: Brianna Sylver

Course Overview
Planning is the key to conducting meaningful and rigorous research that evokes trust and delivers impact within an organization. The sole focus of this class is on the planning process of qualitative research. Note: No execution of the qualitative research plan will occur in this course. Rather, we’ll spend the seven-weeks together exploring in-depth the different aspects of planning qualitative research.

Learning Objectives
Specific topics to be covered include the following:
- How to understand business goals and client needs to derive and identify research goals
- How to work with constraints of time and budget when planning a project
- How to select research and analysis methods to best meet the objectives identified
- How to recruit for qualitative research to ensure sound results
- How to develop discussion guides and field tools to ensure that cross-comparable data is collected

Learning Outcomes
- Students will become methodical about their qualitative research planning process — knowing all steps that need to occur to construct a sound and rigorous qualitative study.
- Students will understand the interdependencies between project scope, budget and timeline — they’ll gain a reality check of what can and cannot be done.
- Students will be exposed to multiple client interaction styles and different project types throughout the class, as they interface with the other project teams in the class.

Course Outline
1. Class overview, Team formation, Project briefings
2. Articulation of project goals, Lecture on developing research questions and hunt statements, Pros and cons of different research methods
3. Lecture on defining project design, budget and timeline, Lecture on recruiting specs and screeners, Continuation of pros and cons of different research methods
4. Team presentations of project design, budget and timeline — does it all work? How will they change project design so that it does work?, Continuation of pros and cons of different research methods
5. Development of project protocols and screeners, Continuation of pros and cons of different research methods
6. Individual team consultation with professor/client regarding their project and associated deliverables
7. Final presentations (a.k.a. Project kick-off presentations), Class feedback

Format & Grading
This class will be formatted as both a lecture and studio course. In the lecture portion of the class, students will be taught guidelines and principles for the topics mentioned above. In the studio portion of the class, student teams will be given different “client” projects. Each project will have different scopes, budget and timeline constraints. Teams will need to assume the role of consultant, listening to the client describe what she needs and then working to build a project design that will appropriately meet the needs of the client. Teamwork will occur both in and outside of class.

Grades will be based on participation and engagement in class and the results of each team’s project. Each of the above will count for 1/2 of each student’s overall grade. In addition, at the conclusion of the class, students will do a 360º review of their teammates. This will ensure that each student is given a grade that accurately reflects his or her personal contribution to each team’s project.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
ID Course Descriptions, version 19

IDN 508 Principles & Methods of User Research
Faculty: Laura Forlano

Course Overview
This course will introduce the principles and methods of user research drawing on the fields of anthropology and design as well as the intersection between these fields. What is a “user” and why might it be important to conduct research from a user-centered perspective? What is the history and background of user-centered design? What are the different approaches to conducting primary research” including ethnographic research, qualitative interviews and quantitative research as well as digital research and visual research? This course will also engage with emerging social theories about the nature of human experience and notions of the “user” that are transforming the field of design including: the nonhuman (machine and animal users), users as participants, non-users and multiple subjectivities.

Learning Objectives
Class time will be focused on lectures, discussions, hands-on activities and review of weekly assignments. Students will become familiar with the value of different approaches to research and gain experience in conducting research through individual and group assignments.

Learning Outcomes
• Students will become familiar with the history of user-centered design
• Students will be able to evaluate the advantages and disadvantages of different approaches to research
• Students will be able to articulate the features of a good research design
• Students will be able to understand the relevance of emerging social theories to the practice of design

Course Outline
1. Introduction
2. Design Research
3. Design Anthropology
4. Ethnographic Research
5. Qualitative Research
6. Quantitative Methods
7. Situated Methods, Social Practices & the User as Multiple
8. Contextual Inquiry, Grounded Theory & Animal Users
9. Decolonizing Design & User as Participant
11. Digital Methods & Non-Users
12. Final Presentations

Format & Grading
20% Class Participation
30% Weekly Assignments
50% Final Project

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 510 Research Photography
Faculty: Dan Chichester

Course Overview
This course introduces students to the use of photographic imagery in design led, user research and related activities. Photography plays a critical role throughout the innovation and design processes and is particularly important during upfront discovery research. We will focus on building image making skills you will need to succeed in research photography for user based research and in aiding in design work for clients in innovation projects.

The backbone of the course will revolve around a short research project that each student selects for themselves. Your research project is used for image making purposes (more than innovation or concept generation output) which will help you get experience and build confidence in your research photography skills without the burden of an innovation deliverable.

As your instructor, I will focus on the development of the individual student and meet separately with each student regularly so there is less of a comparison between students and more on individual development. It doesn’t matter what your current photographic skills are, you will benefit from this course and receive personal attention.

Learning Objectives
Objectives focus on learning the basics of photography itself and the elements of research photography including capturing place, experience, action, detail and perspective, plus analyzing imagery and applying it professionally. At the end of the course each student will produce a document that represents their work over the course session. That document will be appropriate for the imagined “client” of our research project and may take the form of posters, a research findings booklet, quote cards a presentation deck of whatever shows the project work at its best. An optional, but encouraged document to create, is a brief “research guide” that explains to others how to get good imagery for research.

Learning Outcomes
After concluding this course, students will have improved their skills and comprehension in several areas:

• Using photography as a tool for user and design research
• Analyzing images to inform a deeper understanding of user behaviors, and user needs
• Leveraging images as an illustrative element in communicating ideas and concepts
• Helping future colleagues and clients to capture and use imagery for communication

Course Outline
1. Photography basics boot camp – you need no previous experience in photography, but you do need a camera other than your cell phone. For students that don’t need photo boot camp, we will have alternative materials during class and an assignment more appropriate to your skill level.
2. Using photography in qualitative research
3. Labor Day – no class. However, the assignment for week 2 will also cover week 3
4. Analyzing photographic imagery – History of imaging
5. Structuring your work for a deliverable
6. Photographing events and people
7. Making the deliverable better/giving and receiving feedback with colleagues
8. Final presentations of the work

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
ID Course Descriptions, version 19

IDN 512 Interview Methods
Faculty: TBD

Course Overview
This course will provide the both practical knowledge and theoretical/methodological background to enable students to thoughtfully engage with users through individual and group-based interviews, and to analyze and understand those dialogues. The course will combine scholarly research from the social sciences and from the design world to build understanding and afford students opportunities to think critically about the interview process. Practice will help students hone their interview and analysis skills.

Learning Objectives
Build an understanding of the methods involved in interviewing for design research and how to strengthen their individual interview practices.

Learning Outcomes
Students completing this course will be able to:
• Identify situations in which individual or group-based interviews will help them in the research and design process
• Design interview guides, conduct interviews, transcribe, and analyze interviews

Course Outline
<TBD>

Format & Grading
Each week, there will be both a discussion and a practical component to the class, so students have the opportunity to gain hands on experiences and to think critically about what they are doing.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 514 Experience Modeling
Faculty: TBD

Course Overview
This course covers the process and methods of “Experience Modeling” – illustrating current and potential future experiences for the purpose of design-led innovation. As the number of touch points with customers have exploded, the challenge in understanding and managing a multi-channel customer experience has become increasingly problematic. Through a series of hands-on exercises, students will learn ways to describe and depict experiences through both heuristic and generative methods. Emphasis will also be placed on critique of different types of models—people, journey, mode, value, and ecosystem oriented.

Learning Objectives
Enable students to be comfortable in describing and illustrating multichannel “experiences”, illustrating insight from research and providing definition for strategy. More tangibly, the class is built around mastery of five core model types that work together to create a complete, compelling and actionable picture of people and their interactions with an organization.

Learning Outcomes
• Become familiar with emerging issues of designing for multichannel experiences
• Learn to use the five experience model types in concert to understand and define experiences
• Demonstrate the principles and methods discussed through a presentation of current and future experience states on an assigned group project

Course Outline
1 Why Experience (Modeling) Matters
2 People Models
3 Journey Models
4 Modal Models
5 Values Models
6 Ecosystem Models
7 Integrating Models: Experience Maps, etc.
8 Understanding to Opportunity Identification
9 Illustrating Opportunities
10 Creating a Compelling Story
11 Organizational Implications
12 Final Presentations

Format & Grading
25% class participation, 25% assignments, 25% peer review, 25% final presentation

Enrollment Restrictions
IDX 542 Analysis + Synthesis is recommended prior to this course. This course is open to all Institute of Design students.
IDN 516 Cultural Probes
Faculty: Laura Forlano

Course Overview
This course is an overview of how, why, and when to use cultural probes for the purposes of design research as well as the aesthetic and socio-cultural considerations necessary for using probes in research at a variety of field sites. Cultural probes are playful and creative artifacts or stimuli that are introduced into a design research process in order to elicit inspirational responses. We will review examples of cultural probes and stimuli that might be used in a variety of design research traditions including critical making, critical design, design fiction and speculative design approaches.

Learning Objectives
Students will become familiar with the use of cultural probes as they are situated within different design research traditions. Specifically, the goals, opportunities and advantages will be compared with the limitations, difficulties and disadvantages of using cultural probes through a series of examples from design projects around the world.

Learning Outcomes
Upon completion of this course, students will be able to:
• Describe the history of cultural probes within design research traditions
• Evaluate the advantages and disadvantages of using cultural probes
• Articulate the features and purpose of successful cultural probes
• Understand potential applications for cultural probes in a variety of sectors and with a variety of topics and issues

Course Outline
<TBD>

Format & Grading
Class time will be focused on lectures, discussions, hands-on activities and review of weekly assignments. We will build and evaluate our own probes in order to better understand how these artifacts might be introduced into ongoing design research projects. Grading will be based on: 20% Class Participation, 30% Weekly Assignments, 50% Final Project

Course Restrictions
IDN 504 Observing Users is recommended prior to this course. This course is open to all Institute of Design students.
IDN 517 Stimulus in Design Research
Faculty: TBD

Course Overview
This course explores the method of stimulus in primary design research as a complement to the cornerstone methods of user observation and stakeholder interviews. When a topic is extremely intangible, difficult to observe, narrowly focused, or sensitive in nature, stimulus (provocative and tangible objects or experiences) are an effective way to explore a topic and arrive at useful insight for the purposes of design.

Learning Objectives
• Explore new and creative methods for data collection and develop perspectives on when to use these methods in practice.
• Compare and contrast other primary research methods with respect to stimulus based methods.
• Provide a forum for practicing and iterating research and data collection.

Learning Outcomes
Students will be able to demonstrate how to:
• Frame research objectives and justify methods based on these objectives.
• Plan and prototype several research methods, as well as evaluate their effectiveness.

Course Outline
1. Team assignments for project.
2. Framing objectives & methods brainstorm.
5. Methods refinement.
6. Final in-class presentations, project reviews.

Format & Grading
This course will concentrate on learning through experimentation. Through a class project, students will create stimulus based on the goals of their research, and test the stimulus with participants in order to understand the strengths and weaknesses of their stimulus designs.

Students will use class time to work in teams and prototypes various stimulus-based data collection methods, then use out-of-class time to collect data. Students will then bring data back into class to analyze and refine their methods iteratively.

Grades will be based on 50% project work, 30% class/team participation, 20% methods lookbook.

Enrollment Restriction
IDN 504 Observing Users is recommended prior to this course. This course is open to all Institute of Design students.
IDN 518 Survey Methods
Faculty: TBD

Course Overview
In this course, we will cover basic components of survey design, including data collection modes, sampling, coverage errors, nonresponse, interviewer effects, questionnaire design, and ethics related to survey research. Students will also gain practical and hands-on experiences to further understand the practical aspects of the survey design process.

Learning Objectives
The primary goal of this course is to comprehend and apply the basic components of survey design, with an emphasis on the understanding of the decisions and corresponding tradeoffs with respect to the quality of the data obtained. In particular, when you have completed this class, you should be able to:
1. Identify various data collection modes and sampling designs
2. Recognize and distinguish between various error sources in survey process and data
3. Understand and compare the factors causing nonresponse and interview effects
4. Develop and evaluate survey questions
5. Evaluate the implications of design decisions and implementation for data quality.

Learning Outcomes
- Design and implement high quality surveys
- Write high quality surveys
- Understand and identify the reliability and validity of survey items
- Identify and decrease factors leading to problems in survey research
- Identify ethical issues related to survey research

Course Outline
1. Introduction to Survey Methodology
2. Planning and designing survey
3. Designing and evaluating survey questions
4. From designing questions to processing and analyzing data
5. Social media, big data, and survey methods
6. Presentation and wrap up

Format & Grading
Grades are based on 20% class participation, 40% various assignments, 40% final presentation

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 520 Co-Design & Participatory Research Methods
Faculty: Laura Forlano

Course Overview
This course is an overview of how, why, and when to use codesign and participatory design in design research. Codesign and participatory design emphasize a shifting relationship between designers and participants, from hierarchical to collaborative. Specifically, codesign and participatory design offer ways of bringing together diverse groups of stakeholders around complex socio-technical issues such as health, education, transportation, technology and sustainability. Understanding and designing in these areas require deep knowledge from a variety of perspectives and sectors including non-profit, government, academia, business, technology and citizens at large. This course will review examples of codesign and participatory design from a variety of design research traditions including critical making, critical design, design fiction and speculative design approaches.

Learning Objectives
Students will become familiar with the use of codesign and participatory design approaches as they are situated within different design research traditions. Specifically, the goals, opportunities and advantages will be compared with the limitations, difficulties and disadvantages of codesign approaches through a series of examples from design projects around the world.

Learning Outcomes
• Become familiar with the history of codesign and participatory design approaches within design research traditions
• Evaluate the advantages and disadvantages of codesign approaches
• Articulate the features of successful codesign processes
• Understand potential applications for codesign across a variety of domains, topics, and issues

Course Outline
1. Introduction to coDesign
2. Assignment #1 due
3. Assignment #2 due
4. Assignment #3 due
5. Final presentation and Critique

Format & Grading
Class time will be focused on lectures, discussions, hands-on activities and review of weekly assignments. Grades will be calculated based on: 20% Class Participation, 30% Weekly Assignments, 50% Final Project

Course Restrictions
IDN 504 Observing Users is recommended prior to this course. This course is open to all Institute of Design students.
ID Course Descriptions, version 19

IDN 522 Coding and Analysis
Faculty: TBD

Course Overview
This course provides an overview of classic grounded theory coding techniques as well as current practices used in the field of design.

The field of design began integrating social science methods for understanding users in the early 1990s. At first, the methods for data collection and data analysis were utilized in conjunction with one another, ensuring a tight relationship between the nature of the data collected and the means for processing it. Decades later, design has diverged and evolved its own approaches. Students will learn how to develop code lists, how to code data and how to conscientiously substitute other approaches when coding is not the best fit for the project.

Learning Objectives
Students will become conversant in both classic grounded theory coding and more design-driven analytic practices.

Learning Outcomes
Students will emerge with a framework that organizes possible analytic strategies, enabling them to better choose analytic methods based on desired outcomes and design problems.

Course Outline
<TBD>

Format & Grading
During the course, students will work hands-on with data, applying different analytic approaches to better understand the strengths of each method.

Enrollment Restrictions
IDN 504 Introduction to Observing Users is a pre-requisite to this course. This course is open to all Institute of Design students.
ID Course Descriptions, version 19

IDN 526 Online Research Methods
Faculty: TBD

Class Overview
This course is a hands-on exploration of online research platforms. Online studies are a useful option for all students who imagine practicing in user-research driven professions. User research is increasingly migrating from a linear, field-based set of methodologies to an iterative, hybrid set of approaches to better suit the complexity of problems industries face and the compressed timeframes development teams are asked to operate in.

Learning Objectives
The objective is to give students the experience of planning and implementing an online study. Through this experience, students will also have an opportunity to examine the appropriateness and opportunities of online methods for given design challenges.

Learning Outcomes
Emerging from the class, students will understand:
• How online platforms work from a research point of view
• What kind of investigations online platforms support
• What kinds of data they generate
• ...and, mostly importantly, how they might integrate with field research.

Course Outline
1. Ethical practices in research
2. Platform introductions
3. Protocol development
4. Study implementation + facilitation

Format & Grading
This is a methods and tools-based class; we will not engage in any data analysis. Students will focus on the design of research objectives, implementation of their study protocol and moderation of study participants only. Students will also receive hands-on feedback to understand the shift in skills, timing and team roles involved in executing a quality online and how that differs from field research.

Students will work in teams, and each team will have two responsibilities: 1) Design, implement and moderate your study, and 2) Act as participants for another team’s study

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 530 Introduction to Design Planning
Faculty: Larry Keeley

Course Overview
This course is short but intense, and instrumental for understanding the basic ideas, frameworks, and capabilities that modern design planning and innovation programs demand. If you believe that innovation is fundamentally about creativity, the term "innovation planning" appears to make no sense. This should be your very first clue that the obstacles to successful innovation live mostly in stupid assumptions and bad practices. At ID we believe we can get innovation to give up its secrets. This foundation course takes us on a brisk journey to connect ideas ranging from the business planning fundamentals, to modern frontiers of design and innovation planning.

Learning Objectives
• Expose students to the larger context of innovation and design’s unique abilities to lead in times of severe ambiguity. Emphasis on established and emerging frameworks to guide critical thinking.
• Review basic tenants of innovation leadership in large-scale enterprises or wickedly complex problems.

Learning Outcomes
• Students will demonstrate the application of theories and principles covered in class through developing a breakthrough platform of their own choosing with an emphasis on “lightweight design”—catalysts for effective innovation that are faster, smarter, and lower cost than ever before in history.
• Using a real-world problem, demonstrate the ability to focus on and articulate, with clear arguments, specific innovations in the wake of big shifts—a very modern form of planning.

Course Outline
1. Thinking like a planner: an overview
2. Planning frameworks
3. Review of lectures and readings; initial plans
4. Strategy architectures: building sophisticated plans
5. Strategic innovation programs: affecting behavior
6. Achieving change and impact

Format & Grading
This course blends digital lectures, in class discussions, and team challenges. Relevant readings are assigned and should be read in advance of class sessions. One-third of the grade will be based on weekly assignments and class participation. Another third will be from an assigned team project and presentation, plus the peer evaluation of your contributions as a team member. The final third will be a function of your contributions in class conversation. Overall, emphasis will be on demonstrated mastery of the material, along with its effective application, and your teamwork skills.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 532 Business Frameworks & Strategy
Faculty: James Russell

Course Overview
This course provides and overview of business frameworks such that that students will be able to appreciate and leverage these business concepts in their design work. Although there are exceptions, senior managers and those that control resources are more often trained as traditional business thinkers. To be effective and impactful in these situations, designers need to expand their vocabulary and abilities to bridge to the domain of business.

Learning Objectives
Students will become familiar with the basic topics taught in leading MBA programs. At the same time students will be encouraged to integrate their design perspective to these frameworks in order to bring unique contributions to the business and thereby enhance their effectiveness in organizations.

Learning Outcomes
Upon completion of this course, students will be able to:
• Define and evaluate company strategies
• Read financial statements and understand how companies are valued
• Articulate basic marketing frameworks and understand the advantages and disadvantages of various channels to market
• Understand theories of innovation and be able to define a business model
• Define what makes an effective leader and how they can exert their personal leadership in the work situations they encounter

Course Outline
1. What is Strategy?
2. Introductory Finance
3. Sales, Marketing and Channel Management
4. Operations, Technology and Execution
5. Innovation and Entrepreneurship
6. Leadership

Format & Grading
Class time will be focused on lectures, case discussions, hands-on activities and review of weekly assignments. Grades will be based on the following: Class Participation 20%, Class Assignments 40%, Final Group Assignment 40%

Enrollment constraints
No prerequisites. This course is open to all Institute of Design students.
IDN 533 Strategies for Open Innovation
Faculty: Carlos Teixeira

Course Overview
This course teaches design tactics and strategies for integrating in effective ways knowledge distributed across multiple domains. Open innovation systems, which consist of a productive capacity to design complex solutions by integrating large quantities of relevant knowledge distributed across large networks of people has become a dominant process in designing the aspect that shapes contemporary human experiences. This course is for students who are interested in leading and facilitating multi-disciplinary collaborative projects using design as know-how to innovate. Students will learn design tactics and strategies for knowledge brokering through tutorials, examples, practical activities and simulations. Students will develop the competence of knowledge brokering to transform information into ideas with economic, social, cultural, territorial, and environmental value.

Learning Objectives
In this course participants will learn...
• The key principles that shape design strategies in open innovation systems
• To plan and manage collaborative design practices
• How to allocate design capabilities for increasing productivity in large-scale collaborations
• How to assess productivity in open innovation dynamics
• Design strategies for effectively leading open innovation processes

Learning Outcomes
By the end of this course participants will be able to...
• Strategically plan when and how to deploy design capabilities in large-scale co-creation projects
• Facilitate complex knowledge brokering and ideation activities
• Know how to respond and adjust to new developments in open-ended processes of discovery and innovation
• Improve productivity in multi-disciplinary team dynamics
• Effectively manage ideation flows when knowledge is distribute across large networks of individuals and organizations

Course Outline
W1 Context + Design Strategies
W2 Guidelines + Scorecard + Examples
W3 Workshop Planning + Documentation
W4 Workshop
W5 Workshop Description + Analysis
W6 Workshop Report

Format & Grading
Workshop Planner Template 10%
Workshop Plan 20%
Workshop Documentation 10%
Workshop Report 40%
Class Participation 20%

Class Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 534 Business Models and Value Webs
Faculty: James Russell

Course Overview
In this course, students will develop a practical understanding of how business models work to create value for customers and sustainable strategic differentiation for a business. Through the semester, project teams will create new business model concepts representing interrelated entities in an ecosystem and in our final class, pitch them to a panel of venture experts. Through our project we will explore the relationship of key elements of a business model including the value proposition, value creation, value delivery, and value capture. Foundational to our work through the class will be an understanding of how to identify and leverage orthodoxies - the tacit and unquestioned assumptions that can drive or limit the definition of a business.

Learning Objectives
Students will understand how to design distinct business models that drive customer experience and competitive differentiation.

Learning Outcomes
Upon completion of this course, students will:
- Understand the concept and terminology of a business model and its components
- Be able to identify opportunities for business model innovation in an industry
- Be able to understand how a business model fits within the value web of industry participants
- Understand what makes a superior business model
- Be able to communicate a business model effectively to win supporters

Course Outline
1. Defining Business Models & Understanding Orthodoxies
2. Business Model Configuration
3. Ecosystems and Value Webs
4. MVP Definition and Strategic Roadmaps
5. Assumptions, Testing & Experimentation
6. Pitches to Venture Panel

Format & Grading
Students will have a final group assignment to evaluate and then eventually present a business model for a new product/service to an external panel of judges. Grading will be based on: Class Participation 20%, In Class Assignments 30%, Business Model Design Project 50%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 535 Organizational Models of Innovation
Faculty: Carlos Teixeira

Course Overview
This course teaches how to strategically enterprise design abilities in open innovation systems. Enterprising design strategies, the capacity to effectively innovate by integrating skills, techniques, sensibilities, practices, processes, and strategies that are institutionally and geographically dispersed has become the biggest challenge for any organization or initiative dependent on innovation to be successful. This course is for students who are interested in planning, implementing and managing complex collaborative projects using design as know-how to innovate. Student will learn how to enterprise design strategies in organizations by learning key concepts, analyzing organizational models through the lenses of design strategies, and modeling design-driven practices and team dynamics in organizations.

Learning Objectives
In this course participants will learn...
• Key principles that shape open innovation systems
• To identify, codify and understand design capabilities as knowledge assets
• Develop design-based organizational models effective in managing innovation ecosystems
• Develop project plans for effectively leading open innovation processes

Learning Outcomes
By the end of this course participants will be able to...
• Strategically plan when and how to deploy design capabilities in large-scale co-creation projects
• Understand the attributes and functioning of design capabilities
• Deploy design capabilities for increasing productivity in large-scale collaborations

Course Outline
• W1 Design Strategies in Open Innovation Systems
• W2 Open Innovation Systems as Networks and Algorithms
• W3 Diversity and Proximity in Open Innovation Systems
• W4 Affordances and Platforms in Open Innovation Systems
• W5 Exploration, Engagement and Ideation Flow in Open Innovation Systems
• W6 Organizational Models for Open Innovation Systems

Format & Grading
Glossary 20%
Diagram of Organizational Model 40%
Project Plan 20%
Class Participation 20%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 536 Introduction to Portfolio Planning
Faculty: Matt Mayfield

Course Overview
This course is an introduction to the techniques and processes involved in portfolio planning. (Portfolios being any number of multiple products, services, and associated offerings.) Today's companies are faced with managing their scarce resources to deliver ever more compelling products and services faster than their competition while generating greater profits. Portfolio planning is essentially how to generate and choose from a number of options to optimize a company's investment against these and other strategic goals.

Learning Objectives
This course will explore the role of portfolio planning in typical organizations and how it relates to other processes like strategy and product specification. Students will learn the basic techniques and theories for portfolio planning laying the foundation for further studies. Key concepts covered include:

- Ohmae's Three Cs
- Strategy Canvas / Doblin Ten Types of Innovation
- Customer Segmentation and Adoption
- Porter's Five Forces
- Buyer Utility Cycle (User Journey)
- Market Lifecycle
- Competitive Landscapes
- Ansoff's Product Growth Matrix
- Cooper's Portfolio Scorecard
- Market Excellence (Core Competencies)
- Technology roadmaps

Learning Outcomes
Upon completion of the course students will be able to describe a holistic portfolio plan. They will be able to construct the logic necessary to support the plan's objectives. Students will also be familiar with typical business planning concepts and their strengths and weakness to contribute to the insight necessary for a compelling portfolio plan. Students will demonstrate these skills in a paper that provides portfolio recommendations to an assigned product set.

Course Outline
1. Introduction, Company assessments
2. Consumers and customers
3. Competition and Market forces
4. Planning simulation/exercise
5. Opportunity Identification
6. Portfolio Evaluation and Strategic planning
7. Storytelling and leadership

Format & Grading
Each week the class will review assigned readings. There will be one paper due at the end of the course applying the theories and principles covered. It is expected that all students will be physically and mentally present for each class. Grades will be based on: 25% active participation in class discussions, 75% final paper

Enrollment Constraints
No prerequisites. This course is open to all Institute of Design students.
IDN 537 New Venture Design
Faculty: Jereme Dumm

Course Overview
This intent of this course is to identify and understand the role of design and design thinking during the various stages of the entrepreneurial process.

Learning Objectives
We’ll experience through phased scenarios how design can help new companies develop, define and communicate their value propositions and how the role of design changes from one stage to the next. By the end of the class students should be able to show how they can integrate and adapt design and design thinking for growing companies during different stages of entrepreneurial growth.

Learning Outcomes
• Defining Growth: We’ll learn to identify the various stages of entrepreneurial growth and review examples of design’s role in each; Seed, Angel, Early Stage, Series A, Series B, Series C, Mezzanine.
• Identifying Roles: Being able to help design an organization is often overlooked, but designers are often well equipped to help young companies build culture, processes and internal operations.
• Scaling Design: Learn to build the right platforms, and have proven design processes in place to make growth more manageable.

Course Outline
• Introduction
• Defining Growth
• Defining the Value Proposition
• Communicating the Value Proposition
• Internal Roles
• Understanding Real Value
• Managing Transitions
• Scaling Design

Format & Grading
Classes will be conducted as a general workshop where we’ll mimic the environment and culture of a business incubator. The class style will be casual and each session may be broken up into presentations, discussions and working sessions based on the weekly goals. The aim is to have guest speakers and participants give presentations, lead discussions and give critique at vital points in the course’s progression. The class participants will be asked to inform one another with grounded consideration of the skills, activities, challenges, common tools and business examples associated with each others project.

Individual grading will be based on the following criteria:
• Attendance
• Completion of all assignments
• Constructive contributions to class activities
• Quality + design of presentations + assignments
• Resourcefulness + demonstrated progress

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 538 Design Planning Workshop
Faculty: Vijay Kumar

Course Overview
The goal of this workshop is to plan innovation opportunities in a selected topic of interest. Teams will conceive offerings that an organization can build and map out future possibilities. Teams will go through a structured innovation process that includes researching the potential audience, understanding the context for the innovation, recognizing new opportunities, conceiving systemic solutions, and demonstrating how innovative new offerings will work. The workshop will guide students to build on some key methods described in the book “101 Design Methods: A Structured Approach for Driving Innovation in Your Organization.”

Learning Objectives
Students will go through all stages of an integrated innovation planning process. Emphasis will be on using structured methods for producing reliable results at all stages. There will also be focus on combining user-driven and business-driven innovations in the context of an organization. Students will also learn about how best to plan for future opportunities and demonstrate their value.

Learning Outcomes
• Students will become familiar with a variety of methods to plan innovations for organizations.
• They will also learn about creating systemic solutions and strategies for organizations.
• Students will learn about user-driven frameworks to drive concepts and plans
• They will develop capabilities to demonstrate the value of proposed solutions and plans

Course Outline
1. Design Process and Methods
2. Sense Intent
3. Know Context & Know Users
4. Frame Insights and Opportunities
5. Explore Concepts
6. Frame Solutions / Make Prototypes
7. Produce Documents / Demonstrations
8. Final presentations

Format & Grading
There will be specific topic discussions and work plan meetings at the beginning of each class. During the later part of each class student teams will focus on their project and share their progress. Students are expected to take a proactive role in defining their work plan and activities throughout the semester. Active participation is expected, both operationally and intellectually.

Students will focus on a single project that runs through the whole course. We will form teams of 3 to 5 students at the beginning of the course. We will make efforts to select a project that is sponsored by an organization to give students a close-to-reality experience.

One third of the grade will be based on in-class performance, particularly on attendance and contribution. The other two-third will be based on the student's contribution to the project. For this, the emphasis will be on innovative approaches, quality of results, and teamwork. Evaluation of project contribution might also include reviews by teammates.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. Students may take this course multiple times, non-concurrently, for a maximum of 12 credits towards their degree.
IDN 540 Planning Implementation
Faculty: TBD

Course Overview
Planning Implementation introduces frameworks and methods for effectively navigating change in organizations. One of the biggest frustrations designers face in the real world is seeing their designs sit on a shelf, or worse, become so bastardized that they are unrecognizable by the time they are implemented. Planning Implementation helps students develop skills – and gives them tools – to more effectively address these issues. The underlying philosophy of the course states that any strategy, innovation or initiative is only valuable if executed successfully.

Learning Objectives
Using cases, current events and students’ experiences, the class will explore several key failure modes that organizations fall into which undermine otherwise worthy initiatives. In addition, students will identify (maybe even create some) principles, actions and measures, which can be used to mitigate risks and improve implementation success. Ultimately, this sensitivity to internal implementation issues should inform more robust designs, more likely to see the light of day.

Learning Outcomes
• Understand the importance of the context in which their designs will be implemented
• Learn how organizations (large, small, for-profit, not-for-profit, governmental, etc.) work, what gets in the way of design implementation, and how to navigate change
• Learn frameworks and models for managing change, and will be able to apply the frameworks to systems-level design initiatives
• Develop confidence and ability to respond to real world environments of leadership and change

Course Outline
1. Introduction to Planning Implementation
2. Leadership
3. Structure
4. Process and Communication
5. People systems and Culture
6. Final presentations

Format & Grading
Classes are conducted as presentations, discussions and work-sessions. Active participation in the class discussions and activities is strongly recommended. Because of the highly integrated nature of organizational change, each class will build on previous classes. Therefore, keeping up with assigned readings will be especially important. As we will discuss the readings and cases during class, students should be prepared to share critical viewpoints and experiences.

Thirty percent of the grade will be based on in-class performance (including attendance, enthusiasm and contribution.) Twenty percent will be based on homework assignments. One half will be based on the final project. For the project, the emphasis will be on the innovative application of methods and models, the quality and logic of the implementation plan, and the impact of the presentation.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 542 Behavioral Economics
Faculty: Ruth Schmidt

Course Overview
We all probably think of ourselves as rational decision-makers, when in fact we often make decisions based on incomplete information, frequently make “irrational” choices, and don’t always act in our own best interest. Yet as designers, we frequently assume our end users will see the same value in new offerings that we do, weigh all their options rationally, and be willing to shift their behaviors... and when this doesn’t happen we are disappointed that our great ideas didn’t get traction. Behavioral Economics and the related field of cognitive psychology have contributed many experimentally-tested insights into how people actually perceive their options and make choices — not just what they say they want or will do — which can help companies across a wide variety of industries better design, differentiate and “de-risk” their offerings in today’s highly competitive marketplaces. This course will review fundamental principles from the discipline of Behavioral Economics in the context of the human-centered design process to help us better understand these normal human tendencies that lead people astray, and explore how we can harness this knowledge to design more effective products, services, or interactions.

Learning Objectives
• Expose students to the fundamental principles of Behavioral Economics and Cognitive Psychology.
• Explore common behavioral challenges
• Practice strategies to help us apply these principles to human-centered design issues
• Consider the ethical dimension of “behavioral design”

Learning Outcomes
• Familiarity with theories from Behavioral Economics and their relevance to design work
• Hands-on experience with applying these theories to small projects
• Ability to articulate and practice how the field of Behavioral Economics can inform design problems and solutions

Course Outline
1. Introduction to behavioral design: A decision-making model
2. Kinship and Identity: How “belonging” impacts our behavior
3. Expectations and Influences: The baggage we bring to decision-making
4. Framing: Loss, uncertainty, and mental models
5. Time: Past, present, and future
6. Barriers and Enablers: Making action easier or harder
7. Decision-making as a cycle: Reflection and experience

Format & Grading
This class will be a combination of readings, in-class discussions and exercises, and short writing assignments. Grades will be based on 50% — Class participation (includes discussions and exercises) and 50% — out of class assignments.

It should go without saying that students should attend class and complete assignments on time. If you need to miss a class, communicate with the instructor ahead of time. Failure to do so will reduce your grade by one letter grade.

Enrollment Constraints
No prerequisites. This course is open to all Institute of Design students.
IDN 544 Diagram Development
Faculty: Tomoko Ichikawa

Course Overview
This course explores the language of diagrams and similar techniques for increasing communication effectiveness. Designers are often challenged with the development and synthesis of complex ideas, whether they are research outputs, design concepts, or system plans. At the same time, the proliferation of easy-to-use graphic and visualization tools facilitates the creation of visual representations that often emphasize aesthetics over communication. Fundamentally diagrams' strength lies in their ability to present information at various levels of abstraction, to show clearly the inherent structure of information, and to summarize what could be lengthy and cumbersome explanations if represented in other forms. This course looks to explore these fundamentals of diagrams as a language and how to effectively use this language to understand and communicate.

Learning Objectives
The goals of this class is to teach the basics of diagram development, including but not limited to:
- Basic principles of good diagramming
- The various types of information that is well supported by diagrams
- Proficiency in using diagrams as a language including syntax and semantics
- The use of interaction and motion to convey meaning

Learning Outcomes
Students will be able to:
- Apply critical cognitive skills to identify inherent relational structures of a given content
- Acquire the capability to create visual representations that reflect that content structure
- Develop a critical eye to discern and evaluate diagrams they see in everyday life

Course Outline
1. Introduction, principles
2. Sequence diagrams
3. Process diagrams
4. Location / Grouping / Hierarchy diagrams
5. Connection diagrams
6. Synthesis, wrap up

Format & Grading
Students will examine case studies and quickly iterate solutions of their own to learn the language of diagrams. Participation in class discussions and proactive critique are essential.

Enrollment Constraints
No prerequisites. This course is open to all Institute of Design students.
IDN 546 Metaphor and Analogy in Design
Faculty: Ruth Schmidt

Course Overview
This course is for any student interested in how to communicate design work more effectively and more fully to clients, teammates and even ourselves. Metaphors, analogies, similes, allegories, metonymies and other visual/verbal devices have fascinated cognitive scientists, therapists, politicians and speechwriters because they have the power to transform the way people think, and how they act in response. Metaphors allow large amounts of information to be assimilated quickly, complicated ideas to be conveyed simply, alternative perspectives to be experienced viscerally and new inferences to be drawn.

Learning Objectives
Skilled use of metaphor and analogy is tricky, but as designers and design planners we need to understand these powerful tools in a more technical manner and build our expertise in applying them. The focus of this course then is to:
1. Define metaphors, analogies, metonyms—and other variations on the theme—so that we might round out our understanding of what’s possible.
2. Survey various approaches to and sources of metaphors and analogies, noting the principles that make for effective ones and postulating which approach works best in a given circumstance, so that we have a breadth of examples to draw from.
3. Make some of our own; there’s nothing like practice to build skill.

Learning Outcomes
Students completing this course will have a working knowledge of how metaphor and analogy can be used in their design work and have practical experience in applying this communication skill to real world challenges.

Course Outline
1. Introduction to metaphor
2. “Truthiness”
3. Nonverbal metaphors
4. Making the familiar strange
5. Making the strange familiar
6. Metaphor as diagnostic
7. Putting it all together

Format & Grading
This class will be conducted as lecture and critique of weekly assignments. Your discussion and presentation of ideas is critical, to both the success of the overall classroom environment and to your grade.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
ID Course Descriptions, version 19

IDN 548 Advanced Diagramming
Faculty: Tomoko Ichikawa

Course Overview
This course explores and applies dynamic and interactive qualities to content to create understandable, effective visualizations. We will review current theories and examine real-world examples of data narratives, data visualization and time-based visualizations, analyzing motion, narration, transitions, and other visual properties that can enhance comprehension. As this field is evolving and new tools emerging, the course will also look to define additional principles and hypothesis about good design practices.

Learning Objectives
We are in the midst of a visual revolution: cheaper tools, abundant data, easily available templates, and increasing computing power allow anyone to create visualizations and make stories from them. In spite of our intent, the resulting output is often just as complex as the content itself. This course then will help students:

• Be versed in the different types of dynamic/interactive presentations
• Understand strengths and benefits of dynamic presentations
• Be able to strategize how best to apply dynamic/interactive properties to complex information

Learning Outcomes
• Ability to apply dynamic/interactive properties to presentations
• Ability to critique existing visualizations in a constructive manner

Course Outline
<TBD>

Format & Grading
This is a hands-on course and students will create prototypes of dynamic visualizations as part of their activities.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. Students should be familiar with the Adobe Creative Suite.
IDN 550 Communication Design Workshop
Faculty: Tomoko Ichikawa

Course Overview
This workshop offers students the opportunity to practice methods for design research, concept development, and rapid prototyping of communication design solutions. The course explores a variety of communication design outlets such as traditional communication media, new communication media, multimodal communications, spatial communication, communication systems, urban communication, and networked objects. Teams will discuss the theory, philosophy, technology, and implementation of such media in the real world to solve design problems.

Learning Objectives
Students will participate and develop skills in the major phases of the conceptualization, design, and implementation of a communication design solution to a real world problem. Students will be able to use iterative approaches to problem definition and framing, user research, analysis, synthesis, prototyping and communication of their plans.

Learning Outcomes
Demonstrated ability to begin with a problem space and create communication design solutions to resolve the problem by creating new potential solutions.

Course Outline
< TBD >

Format & Grading
< TBD >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. Students may take this course multiple times, non-concurrently, for a maximum of 12 credits towards their degree.
ID Course Descriptions, version 19

IDN 552 Fundamentals of Visual Communication
Faculty: Tomoko Ichikawa

Course Overview
This course examines the principles and methods of visual representations that are more readily understandable, supporting perception, cognition and usability. In addition to the basics of visual communication, this course also introduces the idea of balancing the needs of the communicators and the qualities of the topic/offering to guide appropriate choices for visual representation.

Design, being an extremely expansive field, includes experts with highly specialized skills. While excelling in their respective areas, many lack the basics of good visual communication design, relying on commonplace or trendy graphic design expressions. Yet being able to communicate ideas that don’t yet exist is a key part of bringing them to life. This course intends to address this gap and develop this essential skill of any advanced designer.

Learning Objectives
Giving students with minimal-2D visual skills the ability to clearly represent their ideas based on integrating:
• content categories
• offering attributes
• communication goals and audience situations

...while simultaneously learning:
• basic visual communication design methods and principles
• different sign systems—text, pictures, diagrams—for effective and clear communication

Learning Outcomes
After completion of this course, students will be able to demonstrate:
• an improved understanding of information related to describing a designed offering and the various ways in which it can be represented via sign systems
• the ability to create visual representations through applying basic visual communication principles in layout and typography to better organize and visually structure the information

Course Outline
< TBD >

Format & Grading
< TBD >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. Students should have working knowledge of the Adobe Creative Suite (InDesign, Illustrator, Photoshop) or equivalent.
ID Course Descriptions, version 19

IDN 554 Theories of Communication
Faculty: TBD

Class Overview
This course is designed for advanced students who have discovered that communication is central to planning work, and who wish to have more insight as to how to craft content and engage others in that work. This course explores theories of communication from multiple fields for application to design planning, including relevant perspectives from education, social psychology, phenomenology and knowledge management.

Design is a field that is as much about learning as it is about creation or problem solving. Learning, or knowing, is something that both planning teams and organizations must constantly engage in to act in a responsive manner. To do this, design planners need insight about how we come to "know" anything—what are the tools at our disposal, theoretical concepts and activities that we might create to build collaborative knowing? Many theorists agree that communication is central to this.

Learning Objectives
In this course, students are exposed to two classes of communication theory. The first group of theories looks at traditional cognitive models of communication—what needs to be in place to help individuals engage, process and integrate new information? These theories can help inform content design, information systems design and even the fundamentals of presenting work to stakeholders and potential funders.

The second group of theories looks to constructivist theories—how can design leverage and encourage a collaborative construction of meaning? These theories can help designers use space, artifacts, and tools to build shared knowledge and engage constituents in a collaborative, experiential manner. This is an important mode of communication for all designers and planners, whose work requires a deep transformation in thinking and organizational will.

Learning Outcomes
Upon completion of this course students will be able to leverage and apply multiple theories of communication towards practical design activities.

Course Outline
< TBD >

Format & Grading
Students will work individually and collaboratively in the classroom (no outside group assignments) to consider the authors and context of each theory, and derive design principles to turn theory into actionable insights for design teams.

Enrollment Restrictions
IDN 556 Communication in the Planning Process is recommended prior to this course. This course is open to all Institute of Design students.
IDN 556 Communication in the Planning Process
Faculty: Ruth Schmidt

Class Overview
This course teaches students how to use communication methods to accelerate synthesis and give tangible form to valuable information throughout the development process. Students are introduced to relevant theories of language, visual perception, visual representation and communication. Through a mix of lecture, group activities, critique and exercises, students receive hands-on experience to ensure concepts are trained into the process.

Learning Objectives and Outcomes
Upon completion of the course students will be able to articulate and apply communication techniques at three points in the design process.

1. Models to describe the mess
The front end of the planning process is information-intensive and highly analytic. Here we look at models for describing and structuring the resulting mess. This includes visual forms that create simple, compact, coherent representations of complex data.

2. Tools for diffusing research findings inside the organization
In typical business consulting, the research is considered a means to an end, rather than as a separate value stream that can inform an organization separately from the final concepts. In this section, we survey techniques for embodying and diffusing research findings in ways that make sense to the organizational culture you are designing for.

3. Framing techniques for strategic positioning
Getting the story straight so that it’s clear and powerful is a perennial challenge in design planning. The most common mistake is to recite a linear timeline of the project and findings, which takes the fresh energy in the room and spends it on information of secondary importance. What we need to learn is how to lead with knowledge, not process. Framing techniques help break the “agon of square one” and create a new space for thinking that drive emotional and intellectual contact with the work.

Course Outline
1. Overview of the role of communication in innovation planning
2. Visual models and visual perception: Processing complex visual data
3. Story platforms: Tools for diffusing information to stakeholders
4. Using language effectively: Semantics
5. Audience: How to deliver messages effectively within organizations
6. Framing: Additional strategies to create impact

Format & Grading
Given the breadth and application of the topics involved in this course, students are required to participate in every class. Missing even the first class can significantly impede a student’s ability to absorb all of the material presented. Missing two or more classes will likely keep a student from achieving a passing grade for the course.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
ID Course Descriptions, version 19

IDN 558 Innovation Narratives
Faculty: Erin Huizenga

Class Overview
In both professional and academic careers, there is an increased need for storytelling skills and self awareness. TED Talks have truly changed the way we expect content to be delivered. Creating passion-filled, compelling, and effective stories is a critical part of leadership. Class time will be focused on unpacking and exploring five unique approaches to arranging and presenting information for the sake of storytelling. We have words. We have visual elements. We have the ability to interpersonally communicate through body language, personality, and tone of voice.

Learning Objectives
Using real projects, the course will cover five unique techniques for storytelling, visual narrative as it relates to storytelling, offer time for in-class critique, and showcase how to utilize unique personality and ability to tell the best possible story to win over audiences.

Learning Outcomes
Students will:
1. be less dependent on slides to deliver content by developing a consciousness of visual narrative
2. become familiar with useful story arcs for presenting innovations
3. apply theoretical knowledge through interacting with the class and gaining feedback in the moment
4. be more self aware of how their own interpersonal communication style can enhance their ability to tell stories.

Course Outline
Week 1: The Making of Stories: In class Introductions, Stoking, Visual Narrative: What to show and what to say?
HW: Building from your insight, create your 3-minute story using pitch story canvas, watch videos provided for inspiration

Week 2: In class: Start-Up Pitch Presenting
HW: Building from your insight, create your 3-minute story using nested loops, watch videos provided for inspiration

Week 3: In class: Nested Loops Story Presenting
HW: Building from your insight, create your 3-minute story using sparklines, watch videos provided for inspiration

Week 4: In class: Sparklines Story Presenting
HW: Building from your insight, create your 3-minute story using the petal structure, watch videos provided for inspiration

Week 5: In class: Petal Structure Story Presenting
HW: Building from your insight, create your 3-minute story using in medias res, watch videos provided for inspiration

Week 6: In Class: In Medias Res Story Presenting, Conclusions, Wrap-Up of Class

Format & Grading
Class Participation 50%, Final Presentations 50%
As a 7-week course, attendance is required. Critique and prep time are both big components of this course. Classes start on time. It is expected that all students will be prepared to begin critiques at the start of class. Absences can be pre-arranged if absolutely necessary. An unexcused class absence will result in the loss of a full letter grade.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 562 Modeling Complexity
Faculty: Tomoko Ichikawa

Course Overview
This course introduces students to visual techniques to translate complex topics into models, diagrams and frameworks as an effective means of taming wicked content into a knowable, sharable conception of a topic. This skill is increasingly important as many problems that designers are wrestling with involve large-scale problem definition. And include subjects and characteristics too large or numerous to conceptualize using memory and cognition alone.

Learning Objectives
While simple models and frameworks often emerge naturally from design work, truly complex topics are difficult to bound and represent without theories and approaches to guide the process. Throughout this course students will be introduced to:
• A range of visual models and approaches for representing complex content
• A structured process for translating dense topics into coherent visual representations
• Principles of visual design to optimize the reading experience of a complex model

Learning Outcomes
Students emerge from this course:
• Conversant with a variety of models and insight as to how to match various types of models to different kinds of complexity
• Experienced in the mapping of complex topics with first-hand knowledge of the benefits and challenges of this approach
• Equipped to negotiate ambiguous topics, build relevant structures, and navigate issues of scope and content development

Course Outline
< TBD >

Format & Grading
< TBD >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. Students should be familiar with InDesign or equivalent page layout software
IDN 564 Information Structuring and Management
Faculty: Kei Sato

Course Overview
This course introduces the basic principles and methods for structuring complex information for effective understanding, identifying problems, and guiding solution development. Graph theory, definitions of relations, and structural patterns of relations are introduced as foundation. Examples of information structuring and management include basics of Structured Planning, Semantic Net, and Interpretive Structural Modeling.

Learning Objectives
< TBD >

Learning Outcomes
< TBD >

Course Outline
< TBD >

Format & Grading
< TBD >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 566 Systems Approach to Design
Faculty: Kei Sato, Santosh Basapur

Course Overview
This course explores systems thinking and approaches in design. The course reviews historical development of systems approaches and contemporary uses of systems thinking in design. Particular emphasis goes to system modeling methods that facilitate designers to observe, describe, analyze, predict/envision, design, prototype, and evaluate behavior and performance of complex systems from different viewpoints. Topics include:

- Concept and definition of systems
- Closed/open systems
- Viewpoints and aspects
- Types of systems and models such as continuous/discrete and deterministic/probabilistic systems
- Example systems such as interactive systems, information systems, natural systems, organizational systems, social systems, socio-technical systems

Learning Objectives
The primary goal of the course is to understand systems thinking and approaches in design. Specific objectives include:

- Enhancement of recursive thinking between abstraction and concretization in design processes
- Developing capability for rigorous but flexible understanding of domains of concern
- Developing ability for applying different system modeling methods

Learning Outcomes
Upon completing the course students will be able to:

- Articulate an understanding of systems approaches to design
- Apply systems thinking and methodology to design problems
- Leverage skills for developing basic diagrammatic system models

Course Outline
- Historical overview and definition of systems
- System modeling and prototyping
- Types of systems
- Systematic design models
- Systems approach to creative process, planning, evaluation
- Summary and presentation

Format & Grading
Classes will be a combination of lectures, discussions, and readings. Weekly assignments with a final project will be used to apply methods covered. Grading will be based on: Attendance, Contribution to class discussions, Weekly assignments: reading and projects, and final assignment report

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 568 Service Systems Workshop
Faculty: Mark Jones

Course Overview
This 15-week class will explore new services working with an industry partner. This class will use a Service Design approach to explore opportunities for the partner to enhance its current service model. The result will be one or more opportunity landscapes illustrated by high-level concepts that can frame deeper design explorations in the future.

Learning Objectives
This course will teach Service Design methods and tools that address designing systems with multiple stakeholders, designed elements, and delivery channels. These tools will be used in a team-based project that starts with identifying an opportunity for a service and developing approaches for solutions. The final service opportunity landscape will consider both the user experience as well as operational considerations.

Learning Outcomes
• Understand the definitions and categorizations of services
• Explore the attributes of quality service experiences and the challenges of delivering one
• Gain experience with the design challenges for large scale systems
• Apply tools and processes to a team-based service design project and produce recommendations for opportunities for service enhancements

Course Outline
1-4 Research and grounding
- service fundamentals
- primary research with stakeholders
- secondary research
- stakeholder landscape

5-7 Opportunity identification
- value propositions
- value exchange and stakeholder engagement
- service ecosystems
- service modeling

8-12 Concept development
- co-design with a range of stakeholders
- operational considerations
- develop frameworks

13-15 Opportunity landscape and packaging
- visualize concepts at a high level
- package work to communicate recommendations

Format & Grading
Students will learn through a structured process beginning with primary research with appropriate stakeholders as well as secondary research to ground their understanding of the current landscape of the service industry. Then they will employ a variety of lenses such as stakeholder analysis, examining the larger service system ecosystem, and looking at analogous services to ground initial hypotheses and opportunity areas. They will refine their ideas through co-design with stakeholders, and, if feasible, operational personnel. Students will synthesize new service opportunities into one or more frameworks, and visualize opportunity areas with high-level service sketches.
Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. Students may take this course multiple times, non-concurrently, for a maximum of 12 credits towards their degree.
IDN 571 Systems and Systems Theory in Design
Faculty: Kei Sato

Course Overview
The course investigates principles and methods for representing and understanding structure and behavior of different types of systems. Various forms of theoretical and philosophical frameworks and methodologies are introduced to model and understand fundamental characteristics of domains of concern from different perspectives. Topics include general systems theory, system modeling, causality, and formalisms. The class will also explore example applications of system concepts and modeling methods in design research.

Learning Objectives
The primary goal of this course is to develop capability for understanding subjects of design and design research through frameworks of system theories and philosophy and also for applying system modeling methods to specific purposes in design research.

Learning Outcomes
• Readings of seminal work in system science
• Basic knowledge and skills of system thinking and methodologies
• Example studies of applying system modeling methods to design research

Course Outline
< TBD >

Format & Grading
• Typical classes will be a combination of lecture + discussion + assignment presentation
• Weekly assignment – reading and exercise (individual – 4 weeks)
• Final assignment – a small-scale case study (individual – 3 weeks overlapping with weekly assignments)
• Grades will be based on: Attendance, Weekly assignments, Final assignment report, Contributions to class discussions

Enrollment Constraints
This course is one of five required courses for the PhD program and thus has a strong emphasis on learning conceptual theoretical, conceptual, philosophical and scientific foundation of systems. Master level students will be permitted by the instructor based on the level of previous research or academic background as well as enthusiasm for gaining theoretical basis of systems and systems theory.
ID Course Descriptions, version 19

IDN 572 Platform-based Design Strategy
Faculty: Kei Sato

Class Overview
This course explores how platforms provide a base to accommodate many options that can support diverse contexts and user needs. Platform for this course is defined as an innovation strategy that provides a common set of standards to enable a variety of offerings to be built on top of it, creating higher value for all stakeholders involved.

Learning Objectives
<TBD>

Learning Outcomes
<TBD>

Course Outline
<TBD>

Format & Grading
<TBD>

Enrollment Constraints
No prerequisites. This course is open to all Institute of Design students.
IDN 573 Sustainable Solutions Workshop
Faculty: Carlos Teixeira

Class Overview
Contemporary problems and its solutions can be defined as complex adaptive systems because they emerge from the daily behavior of seven billion people looking for better standards of living when confronted with the challenges and opportunities shaped by the unprecedented interconnectivity of the world economy, the global society, and the natural environment. In this course students will learn how to apply design methods and strategic thinking through open innovation practices for leveraging the interconnectivity of markets, technology, finance, and social networks in order to envision sustainable solutions with impact in the local lives and wellbeing of communities.

Learning Objectives
< TBD >

Learning Outcomes
< TBD >

Course Outline
< TBD >

Format & Grading
< TBD >

Enrollment Constraints
No prerequisites. This course is open to all Institute of Design students.
IDN 574 Design Process & Knowledge
Faculty: Kei Sato

Course Overview
This course introduces basics of design methodologies concerning design process models and knowledge representation and management. It discusses multiple viewpoints and aspects of design in order to address complexity of information required to implement human-centered approaches. Interdisciplinary collaboration as well as developing and managing effective design processes, methods, and organizations for enabling innovative design practices will be covered.

Learning Objectives
< TBD >

Learning Outcomes
< TBD >

Course Outline
< TBD >

Format & Grading
< TBD >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 575 Sustainable Solutions Seminar
Faculty: Carlos Teixeira

Course Overview
Even though it is well acknowledged that the unprecedented interconnectivity of the world economy, the global society, and the natural environment has a direct impact in the local lives and wellbeing of communities, yet change makers such as corporations, NGOs, investors, entrepreneurs and government agencies involved in these systems struggle to understand how these forces can shape contexts, circumstances, and experiences, limiting their ability to envision sustainable solutions and livelihoods. In this course students will learn key principles and concepts on complex adaptive systems in relation to human-centered design for understanding how product and service innovation can shape sustainable value webs and marketplaces.

Learning Objectives
In this course participants will learn...
• Key principles on complex adaptive systems
• Key principles on sustainable development
• The agency of platforms in complex adaptive systems
• How to map the interconnectivity of flows and platforms that shape human experiences

Learning Outcomes
By the end of this course participants will be able to...
• Analyze contexts, circumstances and experiences from the point-of-view of complex adaptive systems
• Analyze the role of platforms in shaping flows and circumstances
• Frame opportunities for impacting local lives and wellbeing of communities

Course Outline
W0 Preparation: Reading on Complex Adaptive System
Assignment (due W1): Glossary of key concepts from readings

W1 Complex Adaptive Systems
Course Overview
Class Activity: Discussion of key concepts and principles

Assignment (due W2):
• Update the Glossary with concepts from the new readings
• Readings on Sustainable Development Challenges
• Readings for W2: Article on Sustainable Development

W2 Sustainable Development Challenges
Class Activity: Case study presentation and discussion

Assignment (due W3):
• Develop a framework analyzing the case study
• Update the Glossary with concepts from the new readings
• Readings on Design Strategies in Complex Socialtechnical Systems
• Readings for W3: Article on Design Strategies

W3 Design Strategies in Complex Socialtechnical Systems
Class Activity: Case study presentation and discussion

Assignment (due W4):
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- Develop a framework analyzing the case study
- Update the Glossary with concepts from the new readings
- Readings on Platforms
- Readings for W4: Article on Platforms

W4 Platforms
Class Activity: Case study presentation and discussion

Assignment (due W5):
- Team project: Analyze a case study

W5 The Structure of Sustainable Solutions
Class Activity: Group presentation and discussion

Assignment (due W6):
- Update the Glossary with concepts from the new readings
- Readings on Contexts, Circumstances, and Experiences
- Readings for W6: Article on Contexts, Circumstances, and Experiences

W6 Contexts, Circumstances, and Experiences
Class Activity: Discussion + Final Assignment

Assignment (due W7):
- Final Individual Assignment: Map the interconnectivity of flows and platforms that shape circumstances

W6 Final
Submit Final Framework and Glossary

Format & Grading
- Glossary: 20%
- Group Assignment: 20%
- Final Individual Assignment: 40%
- Class Participation: 20%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 576 System Modeling and Prototyping
Faculty: Kei Sato

Course Overview
This workshop course introduces system-modeling methods for representing different types and aspects of systems including continuous models, discrete models, probabilistic models, and structural models. System modeling and simulation software packages are used to understand and predict the system behavior. Various forms of physical prototyping are also applied as complementary methods to understand, analyze, explore, and evaluate systems through the development process.

Learning Objectives
<TBD>

Learning Outcomes
<TBD>

Course Outline
<TBD>

Format & Grading
<TBD>

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDN 578 Human System Integration
Faculty: Santosh Basapur

Course Overview
This course teaches students the principles of Human System Integration (also know as Macro-ergonomics or Socio-technical System Design).

Human-System Integration goes a step beyond traditional Human Factors and is concerned with ensuring that the characteristics and needs of people are considered throughout the system development process; especially with regard to their selection and training, their participation in system operation, and their health and safety. Today’s complex systems need to be designed as a whole system rather than piece-meal components. Hence, this course introduces students to the perspectives and principles that can be used when designing complex systems with people and technical subsystems.

Learning Objectives
Students of this course will learn the following:
• Human System Integration, Macro-ergonomics and Socio-Technical System Design Thinking
• Identification of design concerns for large scale complex systems
• Conducting Task Analysis and Function Allocation for a existing or new system
• Analysis of Teams – co-located and virtual distributed teams
• Integrating the solution in to the organization with human centeredness

Learning Outcomes
At the end of this course, students will be:
• Conversant in system-level design theories like Macro-ergonomics, Socio-technical System Design and Human Systems Integration.
• Able to describe the various approaches and methods of Human System Integration and should be able to use it in a project.

Course Outline
< TBD >

Format & Grading
This course is a semester long workshop and so will include lectures, readings (class readings as well as literature review by self) and hands-on work sessions during the class time. The class will do individual/team projects in understanding a complex systems and re-innovating them from a HSI viewpoint. Grading will be based on: Class participation (40%), understanding of theory and subject matter (50%) and submission of assignments and attendance (10%)

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 502 New Product Definition
Faculty: Vlad Kharaz

Course Overview
This class will focus on transition from a concept into a solid implementation plan. We will concentrate on consumer product development as it offers the biggest opportunity to experience limiting factors that shape tangible offerings. This semester-long “reality check” class will help students gain confidence that will help our products make it where others might not. In many ways, trying to successfully launch a product in today’s market is like trying to launch a rocket into space during Apollo Era. We will use the amazing and well-documented history of space race as a metaphor for the way that complex systems like space vehicles evolved to have highly successful and predictable outcomes.

Learning Objectives
Upon completion of the course students will gain understanding of diverse forces that shape product development process. They will enrich their design toolboxes with methods and skills that help navigate constrains of industrial production, market pressures and business realities.

Learning Outcomes
Students are expected to clearly demonstrate understanding of principals and methods taught in this class. A series of informal presentations throughout the class will help us stay on course. Final presentation will provide an opportunity to “sell” the product as well as methods that were used to help create it.

Course Outline
• Our course includes a series of lectures/discussions combined with a comprehensive project.
• Emphasis is placed on understanding core principles for developing marketable offerings. We will explore several methodologies and learn how to apply them based on the specific situation and context.
• Students are encouraged to actively participate in class activities as a part of a group as well as individually.
• For the hands-on part of the class we will select an idea that is interesting, and take it from paper outline to a feasible product offering. During this project we will explore several methods and develop multiple prototypes that will allow our products to have a much better chance of success.

Format & Grading
Grading will be based on attendance, project, and participation.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 503 Design Connoisseurship
Faculty: Jeff Mau

Course Overview
Design Connoisseurship introduces Design as a profession in context of both historical and contemporary practice. Multiple perspectives including the human-centered design process, the role of the senses, an appreciation of craftsmanship and importance of stakeholders will be introduced with methods to assess and solve complex problems. Emphasis will be placed on learning how to articulate issues and measures of success involved in a variety of design problems.

Learning Objectives
• Become fluent in matters of design practice and cultures
• Foster a practical appreciation of the formal design skills that complement the conceptual thinking at the core of ID’s curriculum
• Develop a grounded perspective on design disciplines of greatest interest

Learning Outcomes
• Demonstrate and expanded design vocabulary through in-class exercises and outside assignments
• Become fluent in the state of professional practice of design
• Develop a deeper perspective on where to focus individual energy in the balance of time at ID

Course Outline
• History of Design
• The Human-Centered Design Process
• The Role of the Senses
• Appreciating Craftsmanship
• Building your Vocabulary & Critique
• Considering your Stakeholders

Format & Grading
Classes are conducted as lectures, discussions, demonstrations and breakout sessions. The content of the handouts would also be discussed every class. Emphasis is placed on in-class activities to gain understanding of Design language and artifacts. Part of the class time will be spent on discussing research presentations and readings as required.

• Teamwork outside of class: No
• Approximate number of hours teams are expected to work outside of class: 2 hours per week
• Grades calculated on 60% class participation, 40% daily/weekly assignments

Students will work independently on research of historical milestones in Design and contemporary product, service and communication design. Assignments will take form as presentations on findings, evaluation of designs in the world and solving complex problems. Class discussion will focus on critique and iteration of presentations as developed over the course.

Enrollment Constraints
No prerequisites. This course is open to all Institute of Design students.
IDX 504 Prototyping Methods
Faculty: Marty Thaler

Course Overview
This course explores the growing number of prototyping methods for design. Although prototyping is often thought of as coming at the end of the design process to verify a solution, our approach maintains that prototyping needs to happen throughout the process from initial research to storytelling, to concept generation, and lastly to refine and improve a selected direction. Prototyping provides designers with an understanding of user behaviors, foster communication, gives an ability to utilize constraints and communicate their solutions to all participants for effective and insightful design decision-making.

Learning Objectives
Students will gain an understanding of (through short practice exercises and short lectures) fundamental types of prototypes and the logic for when and how to employ these techniques.

- Framework for prototyping: Inspire, Evolve, Validate
- Experience vs. resolution
- Brainstorming
- Inspiration collage
- Franken-prototypes
- Scenarios
- Sketch modeling
- Build to think

Learning Outcomes
- Demonstrate the application of methods covered through prototyping products, services interactions and small-scale environments.
- Able to discern and describe the appropriateness of different methods for different contexts and positions within a design development cycle.

Course Outline
1. Introduction and brainstorming
2. Franken-prototypes
3. Inspiration collage
4. Sketch prototypes
5. Scenarios

Format & Grading
Prototyping exercises will be done independently, however, collaboration among students is encouraged. Classes will consist of studying a range of prototyping techniques, demonstrations of drawing and building techniques, and hands-on work to improve a student’s abilities and craft skills to draw and to build. Exercises will include sketching, concept drawing, building scale mock-ups, constructing scenarios and possibly, 3D modeling. It is anticipated that students with a range of experience levels will benefit from the class. Grades will be based on the student’s contribution to discussion and the quantity, quality, and progress of his/her work. Quality work will be highly tangible, conceptually strong, and visually clear.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 506 Form and Materials
Faculty: Marty Thaler

Course Overview
This course explores a fundamental challenge of embodying a solution in a physical form: what materials and forms are the best choices? While many technical requirements for creating products define the materials to use and drive product form, designers are also actively defining a company's brand expression through form and materials. This course looks to examine influences of advanced technology, environmental concerns, and competitive positioning on material and form choices. Topics discussed include: products and performance, craft and maker movement, emotion and brand, and form and material futures.

Learning Objectives
Students will gain a strong understanding for the role materials play in the design of products, the influences on those choices, and how the interplay of form and materials create significant user experiences and beautiful products. Students will gain knowledge of material use as it affects form, brand identity, technology expression, ergonomics, manufacturing methods, and cultural preferences.

Learning Outcomes
Upon completion of this course students will be able to:
• Understand how desired performance drives materials and form
• Articulate fundamentals of 20th century product form and materials
• Evaluate the cultural and social implications of product form and material choices
• Effectively conduct form trends and materials research

Course Outline
1. Introduction
2. Performance materials and form
3. Craft maker
4. Emotion and brand
5. Field trip
6. Futures

Format & Grading
Topics are discussed in a round-robin style on a weekly basis with students. Depending on class size teams may be formed. A small weekly report will likely be the preferred format of homework.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 508 Modes of Human Experience
Faculty: Santosh Basapur

Course Overview
"User Centeredness" is an understanding of a complex and wide range of influences that affect how people respond to the designed world. This course introduces students to the principles and surrounding factors of the human experience and how to incorporate these perspectives into their work. Combined physical, cognitive, social, cultural, and emotional factors comprise the totality of the human experience and thus are central concerns to fully understand and become "user centered".

Learning Objectives
This course will provide a comprehensive introduction to principles of five basic modes (factors) of the human experience: Physical, Cognitive, Social, Cultural, and Emotional. Students will learn the historical context of these principles as well as contemporary application in various fields of design.

Learning Outcomes
• Know and communicate issues concerning the modes of human experience and their principles for better design
• Able to incorporate appropriately insights from exploring the modes of experience to be user-centered and innovative

Course Outline
1. Physical factors
2. Cognitive factors
3. Social factors
4. Cultural factors
5. Emotional factors

Format & Grading
< TBD >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 510 Design Development and Implementation
Faculty: TBD

Course Overview
This course covers an overview of development processes from concept to scalable market offering. Additionally, we will address the issues of cost, sustainability and discuss the Maker Movement to see how and where they fit into the development and implementation process.

Learning Objectives
To foster understanding of design development process, and to provide practical knowledge foundation that will enable students to speak intelligently about implementing the products and services that they define.

Learning Outcomes
< TBD >

Course Outline
< TBD >

Format & Grading
This course includes a series of lectures combined with discussions and a comprehensive project. Emphasis is placed on understanding the core principles for developing marketable offerings. Students are encouraged to actively participate in class activities as a part of a group as well as individually. Grading will be based on attendance, project, and participation.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 512 Product Design Workshop
Faculty: Marty Thaler

Course Overview
This course is an opportunity for students to exercise their design muscles throughout an entire product development experience from framing through ideation to final concepts. The design process is rarely the clean linear path it is often depicted as. Navigating the nonlinearity, as well as the ambiguity that often accompanies it, is something every experienced designer must be able to do.

Learning Objectives
The goal of this course is to link specific topics of design theory to practice including:
• Framing user needs and desires
• Identifying insights
• Transforming insights into design principles
• Brainstorming ideas and developing prototypes
• Prioritizing solutions and recommendations
• Developing and communicating value

Learning Outcomes
Upon completion of the course, students will be able to manage tasks across the various phases of the design process. They will be able to incorporate various methods and tools during a design project and demonstrate their usefulness in a tangible product concept. The product concept will have an internal and consistent logic that reflects a deep understanding of the problem and solution areas explored.

Course Outline
1. Define direction and concept
2. Design development through prototyping
3. Deliver final product solution through strong communications and presentation

Format & Grading
External sponsors may be used during this course to further represent real world problems and provide the variety of perspectives often involved in design projects. The topic focus of this workshop is defined at the beginning of each semester.

Students with a range of experience will be part of this class. Evaluation will be based on your contribution to class discussions and reviews, and the quantity and quality of your work. Quality work is substantive, conceptually strong, and visually clear.

Enrollment Restrictions
IDX 504 Prototyping Methods is recommended prior to this course. This course is open to all Institute of Design students. Students may take this course multiple times, non-concurrently, for a maximum of 12 credits towards their degree.
IDX 514 Product Architecture and Platforms
Faculty: Kei Sato

Course Overview
This course introduces the concept of product architecture and platform to explore their possible applications to different types of products from different viewpoints. Product architecture is the physical and conceptual structure that integrates product components and subsystems into a coherent mechanism to perform intended behavior and functions. It also reflects rationale and intention of the design such as functions, methods of use, methods of maintenance, and manufacturing. Traditionally, product architecture is implicitly addressed as a part of a core design concept. As the complexity of products increases, the concept of product architecture becomes a critical instrument for systematically bridging various requirements to design solutions.

Learning Objectives
This course introduces the concept of product architecture and platform to explore their possible applications to different types of products from different viewpoints and further expands the concept to systems, services and business from human-centered viewpoints.

Learning Outcomes
At the completion of this course students will be able to:
• Describe the strengths and weaknesses of a design solution from a platform perspective
• Apply theories and approaches to emerging designs to make them stronger and more impactful

Course Outline
<TBD>

Format & Grading
Case studies will be conducted to investigate and discuss ways of implementing the concept on real products. A final project will attempt to develop different product architectures and platforms based on different concerns and viewpoints.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 518 Interaction Design Methods
Faculty: Santosh Basapur

Course Overview
This course introduces methods for effectively describing the dynamic nature of interaction. Beyond the basic concepts of interaction, underlying theories and design principles will also be discussed to examine understanding user needs, modeling, prototyping, designing, and evaluating interactive systems.

Learning Objectives
The course will cover the following topics:
• Historical development and nature of interaction design
• Cognitive and physical foundations of interaction
• Models of users and interaction
• Unified Modeling Language (UML)
• Interaction methods and principles
• Design approaches and design environments
• Usability and evaluation

Learning Outcomes
• Students will be able to understand, design, and evaluate interaction quality of proposed designs
• Apply methods to consistently describe interactions for the purposes of ideation, exploration, and validation
• Articulate the various roles of products, systems, human agents and organizations in dynamic interaction designs

Course Outline
<TBD>

Format & Grading
Much of the course will focus on the discussion of design cases from product design, media design, communication design, and software design.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 520 History of Interaction Design
Faculty: Tom MacTavish

Course Overview
This course examines key thought leaders in interaction design, their innovations, and the technology and business contexts that shaped the environment for their work. We will identify important technologies and innovations for human/computer interaction and seek to forecast their future capabilities. We will review and assess successful and failed designs to better understand the elements that led to significant design breakthroughs. The course will cover specific interaction metaphors and discuss the merits and constraints of each including: Command lines, Text Editors, WIMP (Windows, Icons, Menus and Pointers), Direct Manipulation interfaces, Gesture, Touch, Multi-touch, Voice Interaction, and other affordances.

Learning Objectives
Students will gain experience in identifying use problems or opportunity areas that are affected by social and technological trends. They will be able to identify baseline events and map important progress events. They will be able to create representations suitable for environmental scans and offering trend lines. They will examine the importance of ecosystem elements that frame user acceptance and commercial success.

Learning Outcomes
After concluding this course, the graduate will have gained perspective on the field on interaction design, be able to identify key thought leaders, and explain the innovations and circumstances that led to important progress for interaction design. Also, they will have gained an understanding of emerging design and technology trends that will help them identify the potential for future design breakthroughs.

Course Outline
• Meeting 1: Interaction Design Definition, WIMPs, and PCs
• Meeting 2: Interactive Touch Based Systems
• Meeting 3: Mobile, Gesture, and Haptics
• Meeting 4: Wearables
• Meeting 5: Mixed Reality, Speech I/O, Image Understanding
• Meeting 6: Context Aware Systems and Robotics
• Meeting 7: An individual presentation is required that demonstrates investigation into an area of interest and the ability to represent and articulate the relevant technology trends to a broad audience.

Format & Grading
Typically, classes are conducted as a combination of lectures by the professor, discussions among class members, in-class exercises, and homework that is presented at subsequent classes. Attendance and participation in all the classes is important.

Students are graded on their classroom involvement (30%), their individual project (50%), and in class assignments (20%).

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 522 Persuasive Interaction Design
Faculty: Tom MacTavish

Course Overview
This course examines interactive media and focuses on improving the engagement between a provider (e.g. product or service provider) and a consumer (e.g. users, stakeholders, purchasers). Given today's emerging technology platforms, these interactions would likely occur via a website, an application, or a product (such as a mobile device). Using the principles of persuasive technologies and design, we will explore theories and techniques to make an offering engaging enough through its interactions to support preferred behavior (such as repeated use, more effective use, or goal achievement) by consumers and to build a 'digital engagement' of either enduring quality or an actionable resolution. Also, we'll explore classic rhetorical structures that may help us create a more purposeful connection between the vendor and their clients.

Learning Objectives
Students will learn terms, models, and theory that will help them assess and frame persuasive opportunities, conceive persuasive interactions to support behavior change, and define a project approach with higher likelihoods for success. Also, they will become conversant in classic rhetorical structures, concepts, and terminologies so that they can better explore digital engagement.

Learning Outcomes
Students will be able to assess end user needs and design solutions that will help support them in their participating in their own behavior changes.

Course Outline
2. Aristotle's Rhetorical Devices, Fallacies
3. Social Technographics and Project Presentations

Format & Grading
Students are graded on their classroom involvement (30%), their individual project (50%), and in class assignments (20%).

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 524 Interaction Design Workshop
Faculty: Tom MacTavish

Course Overview
This workshop offers students an opportunity to explore issues related to persuasive interaction design and complex behavior change design challenges and build their skill in conducting user and contextual research, analysis to identify insights and design principles that may be used to reframe and refine solutions, and to create novel design concepts.

This workshop will explore persuasive interaction design as a technique to help people practice new, desired behavior changes. In particular, we will explore building new habits and long-term adherence to new protocols in self-managed behavior contexts. The course will offer students the opportunity to practice methods for design research, concept development, interaction design, rapid prototyping, and concept validation.

Learning Objectives
Provide a workshop environment that supports students in applying interaction design theory and developing craft skills for building on design research findings and practicing user experience design that encompasses user experience design, interaction design and, as appropriate to support participant goals, for behavior change with persuasive interaction design techniques.

Learning Outcomes
Students will be able to demonstrate an understanding of user experience design methods, interaction design theory, behavior change models and how they can be used in creating compelling prototypes and solutions.

Course Outline
21 Aug  Fundamentals – Class Process, Focus Area, and Forming Teams
28 Aug  Secondary Research and Building Context
04 Sep  Labor Day
11 Sep  Conducting Primary Research
18 Sep  Fieldwork
25 Sep* Describing the situation, challenges and opportunities to our sponsor
02 Oct  Persona Development
09 Oct  Mid-term Break
16 Oct  Scenario Development
23 Oct  Concept Development
30 Oct  Prototyping Methods
06 Nov  Prototyping Practicum #1
13 Nov  Prototyping Practicum #2
20 Nov  Evaluation Methods
27 Nov  How to best make your case to the client
04 Dec* Final presentation

* Sponsoring representatives will be on-site

Format & Grading
< TBD >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 526 Digital Development Workshop
Faculty: Zach Pino

Course Overview
This course is designed to teach current and emerging methods and tools to develop ideas into interactive prototyped deliverables. The course challenges students to explore how a combined knowledge of design research methods and technology and engineering tools can contribute to better designed outcomes. Each semester, the course takes on a specific topic and a new set of technologies, allowing students to retake the course and acquire new skills and exposure to novel technological prototyping tools.

Fall 2017 - Making Things Move
Static objects, interfaces, and imagery are increasingly being replaced by interactive, responsive, animated, and reactive experiences. This change has empowered designers of kinetic objects and animators to explore time and delight as critical aspects of a fully designed experience.

Structured around an introduction to the Raspberry Pi electronics and computing platform, this workshop tasks students with designing images and objects that *move*. Beginning with totally analog design tools, students will discover how mechanisms like gear trains, hinges and ball joints, linkages, and collapsing mechanisms can contribute to the behaviors and functionality of designed objects. Powered motion will then be introduced, driven by python code on the Raspberry Pi -- and motors, magnets, and servos will propel novel, interactive experiences. Advancing into autonomous motion, students will work with digital and analog sensors so that their designs can fully engage with 3-dimensional space and confront the same issues that currently challenge autonomous vehicles. Lessons in programmatic animation tools throughout the course will provide methods for students to better understand and document their kinetic works.

A final project will task students with building a responsive object, featuring some kinetic behavior, that reacts to the world in programmatic ways.

Learning Objectives
• Gain fluency with the Raspberry Pi and/or Arduino prototyping platforms
• Find and implement open source code and libraries
• Write well-structured code in Python and/or Arduino-Flavored C++
• Develop perseverance through confronting technological limitations and failures
• Demonstrate a high-level understanding of concepts in piloted and autonomous motion
• Implement a wide variety of analog and digital sensors and synthesize the results into a computational understanding of the world
• Use mathematical, computational, and physics principles to address design problems

Learning Outcomes
Students in this course will complete many small experiments, with both shop tools and computer code. A final portfolio-quality piece will be developed and prototyped not as a technology-demonstration, but rather as a fully-designed object.

Course Outline
1. Introduction to Raspberry Pi and other Microcontrollers
2. Analog Motion: Rolling and Gear-Trains
3. Analog Motion: Collapsing and Expanding Mechanisms
4. Radial and Linear Motion: DC Motors
5. Piloted Motion: More Motor Experiments
6. Controlled Motion: Servos, Steppers, Solenoids
7. Locomotion on Surfaces: Walking Systems
8. Locomotion in Fluids: Swimming and Flight
9. Artificial Awareness: Light, Sound, and Motion Sensors
10. Feedback: Lights, Speakers, and Internet Communication
11. Project Worktime
12. Project Worktime
13. Final Presentation

Format & Grading
Each class will be divided into an interactive tutorial focusing on a specific topic, followed by building time in which students will be presented with an assigned real-word challenge for their designs to conquer.

Grading Rubric:
- 40% Weekly assignments
- 20% Class Participation
- 20% Ambition and Perseverance
- 20% Final Project

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 528 Prototyping Interactions
Faculty: Ali Karbassi

Course Overview
Web development technologies are increasingly important tools in a designer’s kit, aiding in every aspect of the design process from research to presentation. There is no platform as universal and distributed as the world wide web, and mastering its complementary software languages and tools provides designers tremendous design expressiveness and broad reach to diverse audiences across the planet.

The aim of this course is to prepare students to confidently build projects with front-end web development tools including websites, web applications, games, databases, programmatic imagery, content management systems, pattern matching algorithms, and animated and interactive content. Attention will be paid to all aspects of the full-stack web development process including server management and software deployment. This is not a portfolio development course — the aim throughout the course’s four language-focused modules will be skill mastery through challenging, targeted, weekly exercises.

Special attention throughout the course will be paid to designing and developing for all users and devices. Discussions about best practices for digital accessibility and related technologies like screen readers and assisted input devices will be reinforced and revisited throughout the course.

Learning Objectives
• Expose students to methods of prototyping useful across different stages of interaction design
• Develop the skill to effectively explore relationships between intangible ideas/data and the formal elements that make an idea accessible

Learning Outcomes
At the end of the seminar, students should be able to envision, evaluate, and communicate interaction design ideas within a web-based environment using industry-standard tools.

Course Outline
• Understanding terminal and the command line
• Software based Version Control
• Introductions to web-based programming languages
• Hypertext Markup Language
• Cascading Style Sheets
• HTML/CSS frameworks
• Developing for all users and devices
• Understanding limitations and designing towards an open web
• Development using Javascript
• Accessing the DOM with jQuery
• Final Presentations and review

Format & Grading
Each class time will be divided into lecture and workshop time. Lecture consists of interactive work to master a new concept through doing. Weekly additional homework exercises will task students with applying and mastering the coding principles covered in all previous weeks.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 530 Interaction Design for Immersive Systems
Faculty: Tom MacTavish

Course Overview
This course explores interaction design issues for immersive media experiences that are enabled by visual formats such as multiple displays and immersive displays (e.g. head mounted displays) and are used for applications such as vehicle simulators and augmented reality environments. In particular, we will look at the use of interaction models and techniques to provide users/participants with useful performance support by understanding principles and applying strategies for managing multimodal interaction, task delegation, adaptive interactions, and persuasive technologies. Consider the new world of interaction enabled by products such as Pokemon Go, HoloLens, Cardboard, and Oculus Rift.

Learning Objectives
Students will learn terminology and concepts related to immersive environments and systems such as the mixed reality spectrum, multimodal interaction, embodied conversational agents, and elements of a context aware system.

Learning Outcomes
After concluding this course, the graduate will have gained perspective on the field of immersive systems and be able to identify different types of immersive experiences, design challenges and principles that can be used to research and design engaging immersive environments and experiences. The students will be create and present designs that use these principles and demonstrate their understanding of immersive systems concepts.

Course Outline
- Meeting 1: Immersive Environments
- Meeting 2: Embodied Interaction
- Meeting 3: Multimodal Interaction
- Meeting 4: Context Aware Systems
- Meeting 5: Embodied Conversational Agents
- Meeting 6: Collaborative Environments and Gamification
- Meeting 7: Student Presentations

Format & Grading
Typically, classes are conducted as a combination of lectures by the professor, discussions among class members, in-class exercises, and homework that is presented at subsequent classes. Attendance and participation in all the classes is important.

Students are graded on their classroom involvement (30%), their individual project (50%), and in class assignments (20%).

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 532 Interaction Design for Embedded Systems
Faculty: Tom MacTavish

Course Overview
This course explores interaction design principles, opportunities, and issues for embedded systems. It includes evaluating and creating product concepts for vertical markets and various levels of computing performance, modality affordances, and constraints.

Learning Objectives
Students will learn theory, models, and vocabulary for understanding aspects of embedded systems and will consider the design constraints and opportunities presented in those environments.

Learning Outcomes
Students will be able to analyze and discuss embedded systems using contemporary concepts and create interactive experiences that will make effective use of them.

Course Outline
< TBD >

Format & Grading
Students will work on individual projects.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 534 Interactive Space
Faculty: Anijo Mathew

Course Overview
In a world mediated by computing, we live our lives in intersections between the virtual world and the physical world. Physical architecture is now often augmented, and at times, supplanted by virtual or hybrid architectures. This seminar will examine different variations of interactive and reactive spaces. The seminar will concentrate on the theory and construction of, identities and characteristics of actors embedded in, and the technology employed in the design of such spaces. In this seminar, students will be exposed to the continuum between physical and virtual, focusing on interactive concepts in virtual space (such as Second Life, MMORPGs), physical space (such Smart Homes, Networked Cities), or hybrids of the two.

Learning Objectives
Students will use a lecture + assignment method to study and critique examples of interactive spaces. Through these examples, students will gain the ability to evaluate the technological, economic, and socio-cultural implications of interactive spaces and places which offer new ways of working, playing, praying, learning etc.

Learning Outcomes
Students will be able to analyze and discuss interactive spaces using contemporary concepts, theories, and research, as well as create interactive spaces in place of or in conjunction with traditional brick and mortar environments.

Course Outline
The course is mapped across a continuum between physical and virtual reality. Each week, the lecture and assignment will focus on one node on the continuum. Students will be assigned to teams that look at a semester-long problem from the perspective each of the nodes.

Format & Grading
The class is structured as a series of lectures followed by an in-class activity. Weekly assignments focused on a problem will lead up to a final presentation.

Grading will be based on:
- 70% in-class participation
- 20% in class activity/assignment
- 10% class involvement/energy

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 536 Extensions of Media and Technology
Faculty: Anijo Mathew

Course Overview
This seminar engages students in a critical discussion about contemporary media and technology and the socio-cultural contexts in which they are situated. Theoretical notions as well as contemporary critique of media, technology and their appropriations will be explored through lecture and discussion sessions.

Learning Objectives
Students will gain critical understanding of the extensions of media and technology in specific social and cultural contexts.

Learning Outcomes
Students will be able to analyze and discuss how media and technology extend beyond their technical purview into the lives of everyday users. Using these contemporary concepts, students will be able to create interactive experiences that are better suited to the specific social and cultural contexts of users.

Course Outline
<TBD>

Format & Grading
<TBD>

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 537 Designing Futures
Faculty: Laura Forlano

Course Overview
How are futures imagined, performed and made durable over time? Where and how are futures being made? Who is included and who is excluded from these futures? What is the role, agency and responsibility of design in making futures by creating the conditions for emergent behaviors, interactions, subjectivities and societies? Where are the opportunities for design to create alternative possible futures in a world of emergent, complex socio-technical systems? This course overviews a wide range of methodologies and approaches that have been used to engage in narratives about these futures including backcasting & histories of the future, predictive analytics and big data, forecasting and trend analysis, visioning & “visioneering”, scenario planning, anticipatory design, speculative and critical design, science fiction, design fiction, speculative fabulation and feminist futures, Afroturism and decolonizing design.

This course will use emerging social theories to critically analyze technocentric, human-centric and, even, post-human approaches to futures by considering social and cultural, ethical and legal, health and environmental, political and economic issues related to emerging technologies. Specifically, the course will engage with emerging technologies such as media, identity & augmented reality; algorithms & predictive analytics; artificial intelligence & robots; biotechnology & life sciences; sensors, networks & the ‘internet of things’; distributed networks and computing; new materials, fabrication & 3D printing; big data & quantified self; logistics, mobility, drones & autonomous vehicles; energy, waste & the ‘smart grid’; platforms, crowdsourcing & collaboration; and, payments & crypto-currencies.

Learning Objectives
< tbd >

Learning Outcomes
< tbd >

Course Outline
< tbd >

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 538 Networked Cities
Faculty: Laura Forlano

Course Overview
This course will explore the relationships between people and socio-technical systems with respect to the future of living and working in cities. Specific topics may include: emerging innovation spaces and user-driven innovation; privacy and surveillance; collaborative, open source and sharing economies; distributed and networked forms of organizing; citizenship, the role of the public and public space; social innovation and sustainability. Rather than focusing on designing solutions, this course emphasizes the discovery of language and terminology, the definition of new questions and approaches, and the creation of artifacts, probes, scenarios and prototypes that are important for thinking about emergent, future-oriented areas of design.

Learning Objectives
Students will become familiar with key theories from communications, science and technology studies and design in order to develop a nuanced understanding of the relationships between people, technologies and places. Emphasis is placed on applying user research methods (ethnographic observation, qualitative interviewing, data analysis) in order to reframe issues, define design guidelines and create artifacts, probes, scenarios and prototypes.

Learning Outcomes
• Become familiar with theories from communications, science, and technology studies
• Develop a sophisticated, critical perspective on the relationships between people, technologies and places
• Use ethnographic observation, qualitative interviewing, with secondary research and data analysis
• Gain experience with methodologies such as inventive methods, critical making, design fiction, critical and speculative design along with guidelines for creating artifacts, probes, scenarios and prototypes.

Course Outline
1. Introduction to Networked Cities
2. History of Communication Technology / Ethnographic Observations
3. Social Construction of Technology / Qualitative Interviews
4. Actor Network Theory / Secondary Research
5. Urban Computing and Urban Informatics / Ecosystem Maps
6. Innovation Networks and Innovation Spaces / Data Analysis
7. Values in Design / User Flows
8. Collaborative Cities / Paper prototyping
9. Networked Economy / Scenarios
10. Networked Labor / Wireframes

Format & Grading
Class time will be focused on lectures and discussions, hands-on activities and field trips as well as individual and group review and critique of ongoing project work. The course will be reading intensive; students will read approximately 30-60 pages of graduate-level material per week during the first half of the course. This course is also research-intensive. About half of the semester (50%) will be spent on gaining a deep understanding of the topic. The second half of the semester (50%) will be spent on using methodologies such as inventive methods, critical making, design fiction, critical and speculative design to create artifacts, probes, scenarios and prototypes that reframe existing issues and assumptions. Grading will be based on: 20% Class Participation, 30% Weekly Assignments, 50% Final Project

Enrollment Restrictions
IDN 504 Observing Users recommended prior to this course. This course is open to all Institute of Design students.
IDX 540 Networked Objects  
Faculty: Laura Forlano

Course Overview  
This workshop will explore the relationship between digital technologies - new media, urban screens, sensors and radio-frequency identification chips (RFID), mobile and wireless technology, and ubiquitous computing – as they are embedded into physical products/artifacts, spaces and environments as well as architecture and buildings, which is commonly referred to as the “internet of things.”

This workshop takes a critical perspective on technology drawing on theories from communications, science and technology studies and design. The goal of the class is to experiment with and prototype emergent networked objects in order to learn about the opportunities, affordances and constraints of integrating them into our everyday life.

Learning Objectives  
Students will become familiar with key theories from communications, science and technology studies and design in order to develop a nuanced understanding of the relationships between people, technologies and places. Emphasis is placed on using a critical design approach to prototyping emergent networked objects. Students will use interaction design methods such as ecosystem maps, paper prototypes, process flows, scenarios, wireframes in order to create rich narratives for products, services and systems.

Learning Outcomes  
• Become familiar with theories from communications, science and technology studies  
• Develop a sophisticated understanding of the relationships between people, technologies and places  
• Gain experience in prototyping using a critical design approach  
• Learn to evaluate prototypes as tools for thinking  
• Gain experience in interaction design methods such as paper prototyping and well as creating scenarios and wireframes

Course Outline  
1. Critical perspective about technology / the “internet of things.”  
2. Existing technologies / reflection on opportunities and constraints  
3. Emergent networked objects / critical design, critical making, design fiction and speculative design approaches

Format & Grading  
Class time will be focused on lectures and discussions, hands-on activities and field trips as well as individual and group review and critique of ongoing project work. The class will be reading intensive and it is expected that students will read approximately 30-pages of graduate level material per week.

Grading will be based on: 20% Class Participation, 30% Weekly Assignments, 50% Final Project

Enrollment Restrictions  
IDN 504 Observing Users recommended prior to this course. This course is open to all Institute of Design students.
IDX 542 Analysis + Synthesis in Design
Faculty: Jeremy Alexis, Peter Zapf

Course Overview
Design analysis is primarily concerned with generating insights that drive the development of new products, services, and communications. Although there is a clear focus on the user, this mode of analysis also includes business and technical issues and frameworks. Design synthesis is concerned with generating solutions that act on the insights developed in design analysis. These solutions can be combination of new products, services, interactions, and communications.

This course is an introduction to the typical process and tools designers use to understand fuzzy problems and develop insightful directions to pursue. It will start with a review of different approaches to analysis and synthesis. Students will then work on a real world project, allowing them to progress through the major phases of the process, including problem framing, creating frameworks for analysis, using existing frameworks for analysis, generating insights, and establishing a point of view.

Learning Objectives
Students enrolled in this course will learn a variety of approaches modes and tools of analysis and synthesis that generate deep insights and innovative solutions. Typical heuristics along with more elaborate and structured approaches will be covered. Both generative as well as evaluative techniques will be included to maximize exposure to the field of design and its philosophy.

Learning Outcomes
When completed with this course, students will be able to:
• Describe the role of analysis and synthesis in the design process
• Outline a range of approaches and methods, highlighting their strengths and weaknesses
• Select analysis and synthesis methods appropriate for a client and problem
• Execute the selected analysis and synthesis methods in the context of a design project

Course Outline
1. Solving business problems
2. Product and engineering design
3. Design thinking
4. Strategy formulation
5. Start up thinking
6. Lean thinking

Format & Grading
First 6 weeks – Class will begin with a lecture that introduces the week’s analysis/synthesis approach. Students (working in small teams that will change each week) will then have the remainder of the class to finish a simple, in class project to practice and apply the methods. For homework, students will create a critical reflection piece about the methods, including the following content:
• Best uses of the methods
• Limitations of the methods
• Ways to broaden and deepen the methods
• How I might use them on current and future projects?
Second 6 weeks – Students will be assigned to a team and will be provided a real client design problem. The student team will be responsible for assessing the key issues and then selecting the right combination of analysis / synthesis methods to solve the case. The students will then execute the project. The faculty will primarily act as a mentor / coach for this half of the class.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 548 Innovation Methods
Faculty: Vijay Kumar

Course Overview
The course will present an overview of some of the key principles that drive “Design Innovation” followed by a broad look at the design innovation process, various methods, and frameworks. Based on the book “101 Design Methods: A Structured Approach for Driving Innovation in Your Organization”, this course will cover seven modes of innovation: sense intent, know context, know users, frame insights, explore concepts, frame solutions, and realize offerings. The course will also discuss how design innovators and innovation leaders in organizations can effectively use this learning for research, training, project, and strategic applications.

Learning Objectives
Students will go through all stages of the innovation process and practice the use of several structured methods. By applying these methods on a project students will learn about the benefits and limitations of each method. This learning will help them make decisions about which method to use as they encounter various innovation challenges. They will also learn about the kind of information needed as inputs for using these methods as well as the nature of outputs generated.

Learning Outcomes
Student will be able to:
• Understand the value of using structured methods for an innovation process
• Articulate a variety of methods for innovation, their benefits and limitations in practice
• Select the most appropriate methods for specific innovation challenges at hand

Course Outline
1. Integrated Innovation: Drivers, Strategies, Modes, Mindsets, and Methods
2. Sense Intent: Trends Matrix, Intent Statement, From … To Exploration
3. Know Context: Eras Map, Analogous Models, Competitors-Complementors Map
4. Know People: User Observation Database, User Pictures Interview, Image Sorting
5. Frame Insights: Observation to Insights, Insights Sorting, Descriptive Value Web
6. Explore Concepts: Concept Generating Matrix, Concept Sorting, Persona Definition
7. Frame Solutions: Concept Evaluation, Solution Storyboard, Solution Roadmap
8. Realize Offerings: Strategy Roadmap, Implementation Plan, Team Formation Plan
9. Cultivating an innovation culture in organizations
10. Project Presentation and feedback

Format & Grading
The course is intended as a series of presentations mixed with hands-on exercises and discussions. Teams of 3 to 5 students will be formed at the beginning of the course. Each team will select a project topic and work on the application of key methods introduced in the class.

Active participation contributing to the topic discussion is encouraged. Students are expected to take a proactive role in defining their work plan and activities throughout the course. Half of the grade will be based on in-class performance, particularly on contribution to discussions and application of methods during hands-on exercises. The other half will be based on the student’s contribution to the project. For this, the emphasis will be on innovative approaches, quality of results, and teamwork. Evaluation of project contribution might also include reviews by teammates.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 550 Building and Understanding Context
Faculty: Sara Johnson

Course Overview
This course will improve critical thinking skills when considering with the wide variety of inputs and insight that often accompanies design initiatives. Understanding the context of a particular design challenge is critical to ensuring an insightful and reliable solution. Most design challenges today require an astute understanding of the many dynamics —social, political, economic, cultural, aesthetic and environmental— at play to see a path forward. Context in this sense is the surrounding landscape of trends and influences across all aspects of design from brand, form, and interaction to platforms, IP, and underlying business models. The course will include basic overviews of argumentation, secondary research, and group-based discussion methods.

Learning Objectives
• Provide a forum for students to build a repertoire of approaches to quickly understand the context of any design challenge
• Hone critical thinking skills to question the validity of reference information and conclusions drawn from them
• Expose students to contemporary issues in the field of design

Learning Outcomes
• Students will be able to collect, organize, and interpret secondary information for the purposes of problem orientation
• Student will be comfortable debating points of view developed as a result of building a context of understanding

Course Outline
1. Introduction
2. Secondary Research
3. digital/physical; computation/craft; human/machine; human/nonhuman
4. local/global; provincial/cosmopolitan
5. male/female; black/white; rich/poor; gay/straight; mad/sane; able/disabled
6. new/old; innovate/repair; maker/made; evolutionary/revolutionary
7. nature/culture; civilized/primitive; active/passive; subject/object; science/art
8. producer/consumer; producer/user; user/nonuser
9. market/non-market; public/private; individually owned/shared
10. individual/community; self/other; mind/body; rational/irrational; right/wrong; truth/illusion; objective/subjective
11. past/future; time/space; utopias/dystopias
12. Final Presentations/Participations

Format & Grading
Classes will have lectures on basic tools and frameworks for context building and critique. However, most classes will be focused on identifying and discussing the situation surrounding a variety of existing products, services, and environments. The bulk of the course will revolve around in-class reviews of contextual assessment assignments.

Enrollment restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 552 Managing Interdisciplinary Teams
Faculty: Jeremy Alexis

Course Overview
This course will teach methods and tools that focus a team's creativity and analysis on the right deliverables, and explore how the basic functional methods of the business world—things like schedules, budgets, emails and meetings—can be informed by design thinking leadership to be more effective for teams composed of multiple disciplines.

In both professional and academic careers, there is an increased need for the skills and experience required for managing and leading inter-disciplinary teams. Producing results, on time and on budget, is a critical part of leadership—and doing so while keeping a team motivated, enthusiastic, and engaged in the final output is the sign of an effective team leader.

Learning Objectives
This class is focused on teaching the principles and theories of managing an interdisciplinary team, and then applying these theories as a manager in a team setting. Although based on management theory commonly applied in for-profit enterprises, this course will also prepare students for the various aspects of designing, implementing, managing, and maintaining a collaborative, interdisciplinary academic research project.

Learning Outcomes
• Students will be gain valuable and direct experience in managing a team comprised of different disciplines through a typical design challenge
• Students will be coached on effective engagement strategies and understand their own leadership styles

Format & Grading
Students will be asked to manage a team of undergraduate students in the IPRO 397 program. The IPRO 397 faculty will work with, monitor, and coach the graduate students while they are managing the 397 teams. The students will be responsible for managing a team, but they will be closely observed by the 397 faculty for coaching and guidance. IPRO 397 will meet on either Tuesday evening from 6:15 – 9:30, Thursday afternoon 3:15 – 5:50, and Friday morning 9:00 – 11:40. Students should block out ONE of these times / sections on their schedule.

Each class will follow a similar structure:
• Review what happened in the 397 class the previous week: what worked, what did not, and why?
• Lecture: topic of the week (the topics have been selected to be useful / relevant to what will be occurring in the 397 class that week).
• Outline the plan for this week, including integrating the lecture content into the coaching plan.

Course Outline
1. Team forming, chartering and activation
2. Making plans / communication
3. Motivation and vision
4. Handling criticism / providing critique
5. Improvising when things go wrong
6. Diligence and deliverables
7. Fostering creativity
8. Decision-making
9. Leadership types and styles
10. Team and individual assessment
11. Preparing and managing a team near deadlines

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 553 Engaging Stakeholders in Innovation
Faculty: Ruben Ocampo

Course Overview
This course focuses on the social dynamics of design as an agent of change and innovation, introducing students to simple frameworks to help them get ideas off the ground and gain support within their organizations. As leaders in large organizations wonder where their next big idea will come from, individuals and teams within these organizations wonder how to get their great ideas to gain traction and attention among executives and peers. The void between ideas and sponsorship gets wider and wider the larger and more hierarchical organizations become, and designers usually struggle to get their ideas to “speak for themselves” in the midst of conflicting priorities.

Learning Objectives
The course will explore cognitive models and simple methods to engage key stakeholders and facilitate organizational buy-in. This is not a process of “idea socialization” or “checking boxes,” but rather of iterative engagement and ongoing organizational dialogue through design leadership to increase the probability that innovation efforts will have consistent and robust sponsorship across different levels of the organization.

Learning Outcomes
By the end of the course, students will be able to:
• Use methods and frameworks to gauge objectives and expectations of different stakeholders around innovation investments and efforts
• Be comfortable designing and facilitating innovation sessions with different types of stakeholders
• Create “boundaries” and “white space” around design projects and innovation portfolios in order to guide stakeholders and give them room to contribute ideas in order to create buy-in

Course Outline
• Team formation, theories of engagement
• Assessing current organizational and external factors to create a case for change through design, evaluating key stakeholders and understanding their motivations
• Creating a sense of visionary aspiration
• Cohering teams around hypothesis/ideas/strategies to close the gap between the present and the desired situation
• Determining the key enablers and barriers to execute change strategies, sharing/delegating responsibilities with/among key stakeholders and project teams
• Final presentations

Format & Grading
Class time will be spent putting methods, principles and frameworks into practice through team activities. The course will be very hands-on, facilitation of a diverse range of stakeholder sessions will be the main type of engagement activity practiced, and EVERY student is expected to lead the facilitation of at least one session or a large part of a session during the course.

We will work in teams of 3 to 4 people. Classes 1 and 2 will be mainly lecture-based, and student activities will focus on team formation and familiarization with key topics. Starting on week 3, every class will include a facilitation demonstration by the professor, followed by practice sessions facilitated by individuals/teams, and closed with a presentation of useful methods and frameworks. Grades will be based on: 30% Individual facilitation, 30% Team assignments, 20% Class participation, 20% Attendance

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. This course is mainly aimed at students in their second year of the MDES program.
IDX 560 Analysis + Synthesis for Non-Designers
Faculty: Peter Zapf

Course Overview
This course is an introduction to the typical process and tools designers use to understand fuzzy problems and develop insightful directions to pursue. The techniques of the field of design are becoming an integral part of many innovative efforts within and across organizations. Understanding the underlying nature of this distinct approach to problem solving will help those in practically any industry be stronger at finding insights that lead to new products, services, interactions, and communications.

Learning Objectives
Students enrolled in this course will learn the modes and tools of analysis and synthesis that generate deep insights and innovative solutions. Typical heuristics along with more elaborate and structured approaches will be covered including:

- Problem framing
- Creating and using existing frameworks for analysis
- Generating insights
- Establishing a point of view
- Exploring and evaluating solutions

Learning Outcomes
When completed with this course, students will be able to:

- Describe basic design processes and how they leverage inductive / abductive / deductive thinking
- Distinguish between initial framing and reframing of problems
- Use pre-existing frameworks to aid in problem solving activities
- Know what makes for good design principles and how they are used
- Facilitate and contribute to productive ideation sessions
- Cluster and combine concepts to develop platforms, concepts systems, and higher-level strategies
- Understand the basics of sketching and storytelling to help communicate new ideas

Course Outline
1. Overview of different analysis approaches / problem framing
2. Creating a framework for analysis
3. Assessing desirability: user focused frameworks
4. Assessing viability: business focused frameworks
5. Assessing viability: capability and technology frameworks
6. Creating custom frameworks and generating a point of view
7. Why Synthesis?
8. HMW Statements, Open-Ended Approaches
9. Structured Approaches
10. Additional Methods and Storytelling
11. Concept Evaluation and Workshop Facilitation
12. Final Presentation

Format & Grading
<TBD>

Enrollment Constraints
Open to all graduate students of IIT. (Students of the Institute of Design should enroll in IDX 542)
IDX 562 Multidisciplinary Prototyping
Faculty: Anijo Mathew

Course Overview
MultiDisciplinary Prototyping will approach projects with a real-world impact from a multidisciplinary stance. In this class, students will work with students from other disciplines around campus to engage design-led innovation methods and solve a real-world challenge provided by a company or organization.

Learning Objectives
Each class will take a multidisciplinary stance with approximately 16 students from different departments across IllinoisTech including Design, Business, Architecture, Science, Engineering and Applied Technology. Students will learn how to work with team members from different disciplines, approach a given project challenge from a multidisciplinary perspective, manage time and resources to complete a project of this nature, and present collaborative ideas to external stakeholders.

Learning Outcomes
In the class, students will be exposed to different design innovation and entrepreneurial tools, frameworks and methods. Students will learn how to:

• engage primary and secondary research for design-led innovation
• reframe problems using user and business criterias
• apply the balance breakthrough model to innovation projects
• learn to prototype in lieu of benchmarking ideas
• build business and financial models for startup ideas
• engage systemic solutions to complex problems
• engage project planning and roadmapping for multidisciplinary projects.

Course Outline
Each semester, the project will be sponsored by a different company or organization, which provides a real-world challenge for the students to work on. Based on the sponsoring organisation, course outline and schedule will change per semester. Contact instructor for more information.

Format & Grading
Classes will have lectures on tools, methods, and frameworks for multidisciplinary innovation and entrepreneurship. The projects will be collaborative and involve teamwork. In-class reviews of assignments on a regular basis will lead up to a mid-review and final presentation to sponsoring organization. In most cases, final presentations are made to the executive leadership of the sponsoring company/organization.

Enrollment Restrictions
Open to all graduate students of IIT. Recommended for second year students at Institute of Design.
IDX 597 Special Topics: Sharing Economy
Faculty: Twisha Shah-Brandenburg, Carrie Blumenfeld

Course Overview
The business world is constantly being challenged by small and emerging players that take away significant market share at rapid paces. Large businesses are in need of developing new ways to create their product portfolios and introduce more nimble ways of beta-testing products based on their existing brand presence.

One of the biggest frustrations planners / strategists face is how to effectively take good ideas that come from multiple sources and create an operational strategy that is embedded in meaningful customer insights.

This is a course that focuses on developing products and services influenced by emergent economic models.

Learning Objectives
This course will teach students how to gather insights from companies that make up the sharing economies model and apply learnings from them to create innovative and effective solutions for existing businesses. This class is suited for students interested in planning and strategy roles in the context of in-house departments.

This is a class that will focus on hands-on application and execution, versus theory. Classes will have short lectures and reading materials but the majority of class time will be focused in collaborative team-based learning activities

Learning Outcomes
• Introducing organizations to future planning
• Practice rapid prototyping, and low-to-mid fidelity prototyping
• Introduce core components of viable strategic roadmaps
• Understanding corporate models, processes, traditional success drivers and reframing how organizations beta test
• Effectively present their ideas to stakeholders

Course Outline
1. What’s your landscape (Understanding Emerging Trends that impact today’s marketplace)
2. Who are your players? (Understanding Users + Providers in the Service Economy)
3. Creating Competitive Offerings
4. Early Beta Testing (Assessing Viability of Concept)
5. Communicating to different stakeholders - Building narratives.
6. Build your case study
7. Final presentations

Enrollment Restrictions
This course is open to all Institute of Design students.
IDX 597 Special Topics: Data Driven Service Design
Faculty: Ann Conway, Mark Faga

Course Overview
This course will introduce how to use data to design “smart” services that anticipate user needs, present contextual information, generate business insights, and learn and improve over time. The course will focus on how to identify and harness data generated by the service and turn it into a knowledge system that can create new value for users and the business.

Students will ideate how existing data repositories can be used to improve user touchpoints or support the operational or technical layers of a service. Students will also design research questions that can be answered by data generated within the service, and prototype a data process or logic that applies those data insights and intelligence to service touchpoints.

Learning Objectives
Students will understand the critical role that data plays in service design and feel comfortable working with data as a design material during the discovery and prototyping phases of a design process. After this course, students will be able to collaborate with data scientists and engineers by asking thoughtful questions about a body of data and understanding how artificial intelligence can be strategically used in a service.

Learning Outcomes
• Students will understand the types of data that are at play in service interactions, including contextual data, personal data, historical data, and user-generated data.
• Students will be able to diagram the data inputs and outputs of a system and illustrate a data layer within a service blueprint.
• Students will formulate research questions and interrogate a dataset to answer them.
• Students will articulate the logic of an algorithm that applies data insights to support a user interaction.
• Students will understand how data visualizations and artificial intelligence can be applied to anticipate user needs, reduce friction, present information that guides a user in decision-making and supports him in a process, and connects individual components into a more efficient, networked system.

Course Outline
Class participation: 25%, Final project 75%
• Take a “dumb” system and make it “smart”: e.g., design the fitness center of the future. Fitness centers don’t leverage most of the data they generate, which could be used to network equipment, help users track goals, personalize the experience, optimize the efficiency of the facility, etc.
• Diagram all of the existing data in a current state fitness center service blueprint
• Identify user needs and operational/technical inefficiencies that could be solved with data insights.
• Write a research plan that shows what questions you are trying to answer, what data you would need (existing or newly generated), and the analysis you would do.
• Create a new service blueprint that shows the data/intelligence layer and how it informs the backstage and front-stage interactions.
• Identify business insights that could be generated from data analysis of the new system.

Enrollment Restrictions
This course is open to all Institute of Design students.
IDX 597 Special Topics: Design Leadership and Integration
Faculty: Stephanie Smith

Course Overview
Design is an incredibly sought after panacea for the most pressing problems of organizations today. From design thinking to innovation, it takes many forms — often without rhyme or reason for how it’s integrated within an organization. Design can’t solve all the problems of an organization, and yet it is still believed to be essential for competitive advantage in today’s global economies. Why? This course will help ground an understanding of the context of design and design leadership in contemporary organizations, including its peculiarities relative to traditional forms of leadership - and help students develop an authentic design leadership identity and point of view on the future of design. An abundance of guest lecturers will bring in real-world experience from name brand organizations around the world to the course.

Learning Objectives
This course will explore current practices of design and design leadership within organizations, including challenging some of the popularized notions of the role of design today. By understanding the nature of design practice in a pragmatic sense, students will be better equipped to identify, develop, and embody effective design leadership at any organization.

Learning Outcomes
By the end of this course, students will have:
- An understanding of how design is different as a discipline relative to traditional forms of leadership within organizations (eg, design’s special sauce)
- An understanding of the various models of design and design leadership within organizations (eg, how design shows up)
- An understanding of effective uses of design within large organizational contexts (eg, how to get design to work)

Course Outline
1. What kind of design leader are you? The unique challenges of design leaders in organizations
2. What makes design unique? The hidden thread restoring humanity to corporations today
3. What makes design powerful? Power, ambition, and pace in the race to innovate
4. Where does design live? The ways design shows up, both hidden and explicit, within organizations
5. What are design’s limits? Boundaries, conflict, and the silver bullet complex
6. How does design succeed? When the rubber hits the road
7. Where will design go next? Design at the frontiers of business, technology, and beyond the organization

Format & Grading
This course will be mostly focused on lecture, readings and in-class activities, with real-world case studies and practitioner examples supporting each class. Grading is based on quality of class participation and individual work. No exams given.

Enrollment Restrictions
This course is open to all Institute of Design students. No prerequisites, though IDX 597 Leadership & Innovation and IDX 553 Engaging Stakeholders in Innovation may be good complements to this seminar course.
IDX 597 Special Topics: Whole View Planning
Faculty: Patrick Whitney

Course Overview
This is a hands-on class in which students will develop a plan and prototypes that increase the effectiveness of the World Health Organization. In particular, it will propose a social communications platform that makes use of the “on the ground knowledge” of health care workers, NGOs and citizens. This knowledge is lost in the current communications system of the WHO. It is believed that using informal knowledge can have a wide range of benefits, including having new sources of data for research labs to detecting infectious diseases before they become pandemics.

Students will be provided with qualitative data from regions in Brazil that are traditionally incubators for infectious diseases. Students will be involved in diverse activities including analyzing ethnographic data, identifying patterns in the daily activities of medical workers, examining providers of food and water, and investigating the relevant habits of people living in the area.

There will be frequent visits from experts in design, other fields related to design, and public health. Students will participate in design critiques, discuss their insights with the expert and defend their concepts.

Students will also be involved in reframing problems, using early stage prototypes, concept creation and design of flexible systems and other design practices.

Learning Outcomes
Upon successful completion of this course, students should be able to:
1. Make presentations and arguments based on abductive logic even when faced with ambiguous and incomplete information
2. Reframe the problem in the midst of addressing the problem.
3. Create early-stage prototypes that are fast, cheap and discovery-focused.
4. Create prototypes that help explain organizational strategy.
5. Sketch changes in an organization’s offering, value web, activity system and the user experience.

Course Outline
<TBD>

Required Reading

(Book) Kumar, V. (2013). 101 design methods: a structured approach for driving innovation in your organization. Wiley.

Format & Grading
This class will consist of:
• Short lectures about design, followed by students applying the principles described in the lecture.
• Discussion about their work with visiting experts.
• Every other week students will do a new iteration showing potential innovations at the WHO or other organizations.
• Students will encouraged to work in small teams but may choose to work alone. Students are expected to be active contributors to discussions, attend every class and read the required paper and book.

The final grade for this course will be based equally on three things:
1. Quality of concepts and presentation of concepts.
2. Active and thoughtful contribution to class discussion.
3. Facility with using “whole view model” for analyzing organizations and proposing change.

Enrollment Restrictions
This course is open to all Institute of Design students.
IDX 597 Special Topics: 3D Form Through Data (Digital Fabrication)

Faculty: Zach Pino

Course Overview
Digital fabrication tools, long heralded by designers and engineers as a more sustainable, efficient, and capable replacement to traditional manufacturing techniques, are becoming widespread and accessible enough to support new kinds of products, businesses, and experiences. In this course, students will learn to implement a wide variety of digital fabrication tools alongside the language, limitations, and capabilities of contemporary and near-future digital manufacture.

While exploring these emerging technologies, students will also experiment in how technologies can intervene in other stages of the design process — creating designed results with computer code, algorithms, datasets, evolutionary form-finding, and artificial intelligence.

After teaching a machine how to draw an image in hand-written, scalable vector graphics (SVG) code, students will move towards creating algorithmic line, shape, pattern, and 3-dimensional form. Advanced Rhinoceros 3D, Grasshopper, and 3d scanners will be used as prototyping tools for generating programmatic form in SVG, G-Code, and point clouds. Computer-controlled lasers (laser-cutting), plastic-extruding nozzles (3d printing), mold-making and object replication (3d-scanning), and digital milling tools (Computer Numeric Control [CNC] machine) will be the main focuses of the course — providing students opportunities to physicalize their complex, algorithmic forms.

Students will achieve competency in these techniques through iterative experimentation by the end of the course. A final project will task students with designing and fabricating a functional piece of furniture using all of the techniques demonstrated in the course.

Learning Objectives
• Repeatedly implement many digital fabrication techniques
• Attain a high-level understanding of digital fabrication technologies and their appropriate uses and limitations
• Become more comfortable with failure and persevere through technical challenges.
• Acquire a basic understanding of programmatic form expression in SVG, Grasshopper, G-Code, and Point Clouds
• Confront the 'designer-agency' issues inherent to contemporary design practices that implement programmatic design tools
• Use mathematical and computational principles to address design problems

Learning Outcomes
Students in this course will complete many small experiments, with both shop tools and computer code. A final portfolio-quality piece will be developed and thought about not as a technology-demonstration, but rather as a fully-designed object.

Course Outline
1. Introduction to Digital Fabrication Capabilities and Concepts
2. SVG and Programmatic Image-Making
3. Laser-Cutting Techniques and Experiments
4. Laser-Cutting Techniques and Experiments
5. Modeling for 3D Printing and G-Code
6. 3D Printing Experiments
7. 3D Printing Experiments
8. Modeling for the CNC and G-Code
9. Preparing files for the CNC
10. Engraving and 2-Dimensional Milling
11. 3-Dimensional Milling
12. Flip-Milling and Mold-Making
13. Open Studio
14. Open Studio
15. Open Studio
16. Final Review

**Format and Grading**
This course will be structured as an experimental laboratory, with many opportunities for students to pursue their own independent areas of interest prompted by technologies demonstrated during class. This course meets in the Studio Fabrication Shop, and will use class time exclusively to make things. Students will be expected to arrive in class prepared to fabricate something using one of the many techniques demonstrated throughout the course. Grading Rubric:

40% Week-to-Week Experimentation
20% Class Participation
20% Ambition and Perseverance
20% Final Project

**Enrollment Restrictions**
This course is open to all Institute of Design students. Enrolling students should have Foundation-equivalent knowledge in Adobe Illustrator and Rhinoceros 3D.

This course serves as a prerequisite for use of the Maker-space's new CNC machine and other digital prototyping tools.
IDX 597 Special Topics: Understanding Design Languages
Faculty: Joel Kashuba

Course Overview
Design Languages are all around us and often communicate more about the brands, offerings, and experiences they’re applied to than signage or written words ever could. Being able to identify and articulate examples of design language is a valuable business skill. This course is an introduction to Design Language with a focus on both 2D and 3D attributes that can amplify them.

Learning Objectives
This course is intended to enable the students with the following:

• Ability to identify Design Languages and their component parts
• Ability to articulate the value of having a robust design language across a brand and/or business
• Ability to cite examples of strong and weak Design Languages at work and the implications of each
• A basic knowledge of how to apply Design Languages to product offerings, services, and experiences

Learning Outcomes
< tbd >

Course Outline
Class 1 - Introduction to Design Language and Brand Equity Design Tools
Class 2 - Driving Distinction and Relevance through Design Language
Class 3 - Applying Design Language- Case Studies, Hard & Soft Points, and Brand Stretch
Class 4 - Class Discussion and prep for final presentation
Class 5 - Final Presentation Assignment & Lecture: Role of Design Language in a Brand Story
Class 6 - Full Class Work Session to Prepare for Final Presentation
Class 7 - Final Presentation & Closing

Format & Grading
Mix of lecture, Facilitated Class Discussion, Exercises in Small Teams, and Student Presentations based on Homework Assignments.

Students will be graded by level of active participation in all components of class and the level of learning reflected by individual presentations. Final Presentation will be 30% of grade for course. Sketching and visualization exercises will be part of the coursework, but grading will not rely on level of artistic skill.

Enrollment Restrictions
This course is open to all Institute of Design students.
IDX 597 Special Topics: Social Entrepreneurism
Faculty: Erin Huizenga

Course Overview
Social Entrepreneurship is designed to expose students to all aspects of the business development process from the idea to the creation, financing, and running of a start-up business, benefit corporation, nonprofit organization, or new earned income model and/or program for an existing business or organization. This class won’t necessarily make you into an entrepreneur (although it might!) but it can help you assess whether an idea is a business or organizational opportunity and how to transform that opportunity into a sustainable model.

Learning Objectives
• How to develop an idea using the design thinking process
• How to assess whether and idea is a good opportunity
• How to build a valid business model
• Obtain solid understanding of Lean Start-Up
• Developing sound business strategy
• Understand how to create value
• How to market your business
• Building a successful team
• Developing and protecting intellectual property
• Developing compelling idea pitches
• Understanding how to value a business
• How to raise capital
• Understand how to allocate equity among founders and employees

Course Outline
Week One - August 21, 2017
GUEST TOPIC: Defining Benefit Corporations, L3Cs, and Nonprofits: Kathryn VandenBerk

Week Two - August 28, 2017
GUEST TOPIC: Civic Innovation: Tim Swanson, Cannon Design
DISCUSSION: Assessing Need: Carol Coletta, Kresge Foundation

Week Three - September 11, 2017
GUEST TOPIC: Education Innovation: Barry Malkin, Carnegie Learning
DISCUSSION: Synthesis and Defining your POV to move you forward

Week Four - September 18, 2017
GUEST TOPIC: Health + Wellness Innovation: Rob Stein, St. Clair Commons
DISCUSSION: Building to Learn: Experience Mapping and User Journeys for Impact

Week Five - September 25, 2017
GUEST TOPIC: Mission versus Vision, Chris Huizenga, Founder of Borough + Block
DISCUSSION: Lean Start-Up, Business Model Canvas

Week Six - October 2, 2017
GUEST TOPIC: Impact Investment: Jessica Droste Yagan, CEO of Impact Engine
DISCUSSION: Entity Formation, General Legal and Regulatory Issues

Week Seven - October 16, 2017
GUEST TOPIC: On B Corporations: Unreasonable Institute
DISCUSSION: Pivoting and the Search for White Space
Week Eight - October 23, 2017
GUEST TOPIC: The Role of Impact Initiatives for Corporations: Rubin Ocampo, consultant to Kohler
DISCUSSION: Storytelling

Week Nine - October 30, 2017
GUEST TOPIC: The Role of Impact Initiatives for Corporations: Andrew Means, UpTake
DISCUSSION: Group work and refinement

Week Ten - November 6, 2017
GUEST TOPIC: Start-Up Story of EPIC, Till, Borough + Block: Erin Huizenga

Week Eleven - November 13, 2017
GUEST TOPIC: Inspirational Start-Up Story of SkillScout: Elena Valentine, SkillScout Co-Founder
DISCUSSION: Group work and refinement

Week Twelve - November 27, 2017
FINAL PRESENTATIONS PRACTICE ROUND

Week Thirteen - December 4, 2017
FINAL PRESENTATIONS WITH GUEST CRITIQUE PANEL
(Timing TBD: potentially in the afternoon or early evening so more guests can attend.)

Grading & Format
Your grade will be compiled from these different components:
1. BUSINESS PITCH 20%
2. WEEKLY STATUS/ATTENDANCE 30%
3. BUSINESS CANVAS 20%
4. FINAL PRESENTATION 30%

For the business pitch, you will form groups of up to four people and develop an idea pitch and a complete business model with supporting documentation for an idea you will pursue. Weekly status reporting will be graded based on quality versus quantity. I place high importance on comments that move the class discussion forward. Your business canvas is the document that describes your business in some detail and proves out your thoroughness and business viability. The final presentation will be a panel critique of all work for the class.

This course emphasizes the need for teamwork and collaborative learning and support, part of your grade will be based on how well you function as a team member in the class.

Enrollment Restrictions
This course is open to all Institute of Design students.
IDX 597 Special Topics: Sustainable Systems
Faculty: Andre Nogueira

Course Overview
This course introduces students to the challenges of sustainable development, and explores systems-based approaches to inform design processes towards a more sustainable future. The course introduces key concepts and tools from existing sustainability measurement and management practices, and related them to Design processes. Students will learn how to apply system thinking through systems tools, leveraging the interconnectivity behind consequences of design decisions in order to envision sustainable solutions from the designer mindset. Students will work both individually and in teams to explore system limitations and opportunities, considering sustainable issues and existing infrastructures, while searching for possibilities in the future of design practices. Students will develop individual framework based on key concepts and methods to apply sustainability in their design practices. At every opportunity possible, the students will represent their learnings, concepts and plans using frameworks and models to convey higher-level ideas about how the emerging knowledge can be structured.

Learning Objectives
Class time will be focused on theory lectures, assignment discussions, and group activities related to weekly readings. Students should become familiar with the importance of sustainable approaches to design process, and explore new concepts and methods in conducting research through individual and group assignments. Students should learn how to analyze the sustainable challenges understanding the importance of sustainability measurement and management tools.

Learning Outcomes
1. Students will be able to understand the relevance of emerging sustainability theories to the practice of design.
2. Students will become familiar with system thinking approach towards sustainable development based on existing key concepts (e.g., metabolism, symbiosis, life cycle thinking, closed loop systems, design for sustainability, product responsibility, systems thinking) and existing key tools (systems architypes, material and energy flow analysis, life cycle assessment, carbon footprint calculations), and relate them to the design process.
3. Students will be able to utilize systems thinking methods to identify root causes of design challenges facing sustainable innovation in organizations and societies, and develop appropriate solutions to those challenges by applying systems architypes.

Course Outline
Week 1: Understanding Sustainable Development and Design Practice
Week 2: Industrial Ecology and Circular Economy
Week 3: Sustainability Performance and Integrative Reporting
Week 4: System Thinking
Week 5: Systems Architypes 1
Week 6: Systems Architypes 2
Week 7: Framework Development

Grading & Format
Case Studies 20%
Assignments 20%
Glossary 10%
Final Framework 20%
Class Participation 30%

Enrollment Restrictions
This course is open to all Institute of Design students.
IDX 597 Special Topics: Leadership and Innovation
Faculty: Lindsay Lyman

Course Overview
This hands-on course focuses on how to be an effective leader of innovation and how to make innovation happen within large organizations. We know that leadership is the #1 predictor of innovation outcomes in large organizations. Therefore, being a strong leader is a skill that will serve designers well in their careers. Throughout this course, students will cultivate their intrinsic leadership skills, learn how to influence others, and increase their ability to navigate the practical challenges of making innovation happen in large organizations.

Learning Objectives
This class explores leadership at 3 levels, all examined within an innovation context:
- Leadership of Self: “How do I challenge my own orthodoxies, be an inspiration to others, and lead through example?”
- Leadership of Others: “how do I motivate and guide my direct team, influence people within my span of control, and influence other people I work with?”
- Leadership of Organizations: “how can I improve the innovation outcomes and culture of the organizations in which I work?”

Learning Outcomes
- Become a more effective innovation leader: gain self-awareness of one’s strengths and weaknesses; understand how to leverage personal strengths and adapt style where required to be a more effective influence and inspiration for others
- Build higher performing innovation teams: build the right talent and dynamics for innovation success, influence others, reduce decision making biases
- Gain practical tools to overcome barriers and create successful innovation in large organizations: understand what it takes to create and commercialize successful breakthrough innovation in a corporate or large organization context, and apply the right tactics to overcome those challenges

Course Outline
1. What is leadership?
2. Leading self
3. Leading others
4. Decision biases
5. Leadership in large organizations
6. Leadership action plan

Format & Grading
- Theory and lecture will be minimal, however a mix of case studies and current academic research will be used to introduce the principles underlying the experiential project work.
- Throughout the course an in-class simulation “game” will be played that will take students through the lifecycle of a company trying to generate breakthrough innovation. Teams of students have to work together to drive the desired outcomes, while facing all of the real challenges that prevent innovation from happening in the real world. We’ll debrief after each simulation, and discuss how leadership plays a role in overcoming these challenges.
- Out of class assignments will include individual experiments and reflection essays, and group work to prepare for the in-class simulation.
- Grading is based on quality of class participation, teamwork, and individual work. No exams given.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Fostering Creativity
Faculty: Steve Hammond

Course Overview
By its nature, Design is a creative craft. Designers explore, observe, analyze, model and build in order to provide value to their clients. As design challenges increase in complexity, designers are increasingly asked to facilitate processes and lead diverse teams in creative processes.

This course focuses on deliberate creativity: frameworks and methods to facilitate individuals and teams in Creative Problem Solving (CPS). Class discussions will deepen understanding of creativity, creative process and innovation. Students will learn and practice methods that help individuals and teams reach their creative potential. Practice of facilitation techniques will be accompanied by a deep dive into theory.

Learning Objectives
Classes will combine lecture, discussion and tool practice. Students will learn the language and frameworks of creativity along with tools to facilitate creative process. Using their own “problems”, they will learn how to diagnose the situation and apply appropriate tools to move forward toward a solution. They will develop an understanding of personal creative preference, creative process and the effect of climate and culture on group creativity.

Learning Outcomes
Students will:
• Develop a deeper understanding of creativity, creative process and innovation
• Learn and use practical frameworks that foster innovation in groups and individuals
• Become more skilled in facilitating others in creative processes
• Build a toolkit they can use in leading and facilitating creative teams.

Course Outline
1. Framing creativity, creative process and innovation
2. Creative Person, Introduction to FourSight™
3. Creative Process – the Thinking Skills Model
4. Facilitation of Creative Process
5. Facilitation and Coaching
6. Creative Environment

Format & Grading
Grading is based on the following criteria: Attendance, Class Participation, Quality of Individual and Team Assignments, Contribution to teamwork, Application of techniques to appropriate challenges.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Civic Design Research
Faculty: Denis Weil

Course Overview
This seminar applies Jay Doblin’s definition of ID as a school that leads the establishment of Design as a professional practice. Doblin postulated that what defines professional practice is the existence of theory, history, critique and established practices / methods. For a professional practice the theory first gets defined based on analyzing, codifying the emerging practice to principles and the underlying theory. Once established that theory and principles can then guide the practice to further develop and optimize the practice. This seminar will focus on the research to codify the emerging practice of Civic Design – Design in and for government, which is a growing field for designers to work in - based on researching the leading practitioners and synthesize the shared theory, principles and practices as well as an opportunity map for further development of the practice.

Learning Objectives
The seminar will allow students to gain a deep understanding of the “Vertical” of Civic Design and learn how to adapt design principles and methods to different contexts. This is a research class with focus on a “critical audit and evaluation” of the practice of civic design today.

Learning Outcomes
Students will:
• learn about the unique contextual challenges of innovation and change management in the civic sector/ government
• gain an understanding of the current ecosystem in the US and some leading global players
• codify the emerging practices of the leading practitioners in the space
• provide a critical analysis and identify further practice development opportunities

Course Outline
Module 1 – Civic Context Grounding
1. Introduction – State of Civic Design, Form teams around “Adopt” a Practitioner (Nesta, Bloomberg, Code for America/18F, Gov.org a.o.)
2. Public Sector Operational (StatsPerform, Unions, Policy) & Business models (PPP, Purchasing) – case studies

Module 2 – Unique Design principles, process and methods for Civic Design (each team to research their adapted practice)
3. Process
4. Methods
5. Principles
6. Taxonomy of Civic Design practices + Gaps/ Opportunities for further development of new and adaptation of existing Design practices
7. “Mini-Symposium” – State of civic design: best practices and opportunities to further adapt Design principles and practices to the Civic Sector (workshop with outside practitioners)

Finals week: Wrap-Up – Combined document

Format & Grading
This is a research class. Students will work in teams of 3 and be researching (i) a specific civic design practices (review of published material and interview with the leaders of the practice) and (ii) take on the summary of class discussion and codification of one of the practice area (process, methods, principles, gaps and ecosystem). Each session in Module 2 will be divided into two parts: (i) sharing/posting the observed practice by each team (analysis) and (ii) codifying the emerging shared and divergent practices (synthesis). Grading will be based on the (ii) quality of team weekly analysis & presentation (33%) and the teams part of the civic design practice codification. There will also be an individual factor based on intra-team contribution evaluation.
Enrollment Restrictions
Students should have completed all the required courses as well as a service design workshop. Civic design builds on service design but adding a very a public sector “business design” lens to the projects.
IDX 597 Special Topics: Innovation Thought Leadership
Faculty: Vijay Kumar

Course Overview
Besides skills needed to practice good design, designers need competencies to be effective "thought" leaders as well, to successfully inspire teams and other stakeholders to turn ideas into valuable solutions for the real world. For this, they need to develop a clear and systemic understanding of the key parts, relations, and dynamics of the complex challenges they face. This course will explore generic innovation systems as supporting frameworks for helping with this thought leadership. The course will explore aspects like innovation drivers, processes, innovative offerings and their attributes, user interactions and experiences, and benefits to society and environment. The course will also discuss ways to use such frameworks to foster shared innovation mindsets in organizations.

Learning Objectives
In this course students will:
• Learn how to frame up key aspects of innovation challenges.
• Get familiar with ways to learn from innovation examples, projects, and leaders.
• Learn about generic innovation frameworks that can help guide teams.
• Learn about using frameworks to support innovation process.

Learning Outcomes
On completion of this course, students will be able to:
• Guide research on key aspects of innovation challenges organizations face
• Build overview frameworks for guiding innovation projects
• Use frameworks to lead and inspire innovation teams and their mindsets

Course Outline
This course will explore components of innovation framework like:
1. Drivers of innovation and integration
2. Principles for successful innovation
3. Innovation processes and methods
4. Innovation offerings and attributes
5. Creating experiences and interactions
6. Benefitting society and environment
7. Using innovation frameworks

Format & Grading
The course is intended as a combination of presentations, readings, discussions, and project work. Important topics about innovation thought leadership will be explored in each session. Students should take a proactive role in defining their work-plan and activities throughout the course. Active participation is expected, both operationally and intellectually. The assignments will focus on in-depth research for creating frameworks. Teams of 2 to 4 students will work on selected topics to develop these frameworks.

Half of the grade will be based on in-class performance, particularly on contribution to discussions and the depth of research, analysis, and synthesis. The other half will be based on contribution to the project. For this, the emphasis will be on innovative approaches, quality of results, and teamwork. Evaluation of project contribution might also include reviews by teammates.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. However, this course is mainly aimed at students in their later stages of ID program.
IDX 597 Special Topics: MDM Seminar
Faculty: Denis Weil

Course Overview
This seminar creates a forum for reflection and peer-to-peer exchange for the MDM cohort. This forum will encourage these mid-career professionals to discuss on how they will make best use of their ID experience for their work and careers. The seminar will be discussion based around a specific topic or provocation from readings, presentation or guest speakers. The only deliverable will be the development and presentation of a personal impact statement and action plan.

Learning Objectives
The seminar will allow the mid-career professionals in our MDM program to reflect on how they will apply their new learnings in their workplace to increase their impact and change their career trajectory. Specifically, we will explore, reflect and try to come to actionable insights in three areas:

- *How to Increase impact in your work* – What are the shifts you will have to make personally on how you “show up” and how you approach your work?
- *How to exercise Design Leadership* – What is design leadership? What are you already practicing? What would you like to add? How can designers act as integrators to ensure that the design work gets implemented and has maximum impact?
- *How to start and continue to strengthen your practice* – What is your personal impact statement? How will you get started? What kind of support system will you build to pursue your career transformation?

Learning Outcomes
- Participants will each identify new high value-add additional approaches to their work
- Participants will define their definition and ambition for growing their design leadership and explore roles and practices of successful design leaders.
- Participants will develop a personal impact plan including a support system for continuing to elevate their practice

Course Outline
1. *Introductions* - Sharing career transformation goals
   Module 1 – Building Innovation Cultures
   2. Drivers
   3. Models
   4. Distractors
   5. MDM Field report
   6. Impact experiment Design

Module 2 – Assuming Design leadership
7. Roles
8. Adaptive leadership
9. MDM Field report
10. Impact experiment Design

Module 3 – Planning for Impact/Transformation
11. Personal Theory of Change
12. Transformation plan
13. MDM Field report
14. Closing

Format & Grading
50 minutes “wrap” seminar sessions (food & thought) – discussion based with different stimuli (case studies, presentations, class reflection) requiring 1 hour reading or preparation each week

Enrollment Restrictions
MDM students only (part-time and full-time, all years)
IDX 597 Special Topics: Evidence Based Design
Faculty: Mike Oren

Course Overview
This course will introduce students to the use of analytics and A/B testing to measure the success of design solutions. Having measurable results can aid a design team in justifying design decisions as well as helping justify expansion of design efforts. In addition, while qualitative research methods will not be a focus of this course, we will explore how qualitative research can help inform tests as well as how findings in quantitative research can help justify qualitative research projects.

Learning Objectives
• Introduce students to web and app analytics as well as providing an overview of some of the more common tools
• Provide an overview of experimental design techniques necessary for the successful construction of A/B and multivariate tests
• Help students gain a comfort in thinking about design quantitatively and as testable experiments

Learning Outcomes
• Students will gain confidence in working quantitative data to understand the impacts of their design on business objectives
• Students will understand when quantitative research is appropriate and when mixed methods or purely qualitative methods are needed

Course Outline
1. Introduction: Why evidence based design isn't about choosing shades of blue
2. Understanding common metrics in web and app design
3. Lab: setting up a site to use analytics and A/B testing
4. Experimental design and understanding A/B tests
5. Multivariate testing
6. Beyond a single page: understanding the effects on a flow
7. The role of segmentation in A/B testing & analytics
8. Final presentations

Format & Grading
Classes will consist of discussions around intersections of data and design based on readings and exercises aimed at introducing students to a variety of topics related to inputting and using data in digital systems. Grades will be determined based on participation in class as well as student ability to demonstrate core course topics in their final presentation.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Agile Methods
Faculty: Adam Kallish

Course Overview
Design Thinking is about defining the right work, and agile is about doing the work right. Agile culture is about clarity of purpose and that all work directly supports the overall value delivered to markets and customers. This course will be a balance of understanding key principles, values, culture/behaviors, and practices of Agile and applying them through learning by doing with peers on an actual problem to create a prioritized backlog of work.

Learning Objectives
• understand why use agile to activate design thinking outcomes
• activate teaming practices such as social contract, daily stand-ups and retrospectives
• learn how an actual company applies agile to a market problem
• create a business model canvas
• create personas and define a problem statement to three “who, what, wow “ statements
• break down statements into user stories and cluster into epics
• create a backlog of prioritized work

Learning Outcomes
• clearly understand how agile activates design thinking
• why active collaboration and transparency can increase communications and work output
• understand how to use a kanban and a GitHub repository
• understand specific agile practices, and how they work with established design thinking practices
• understand how to break down a design problem into a backlog of work that can be delivered to market

Course Outline
1. Why use Agile to deliver solutions?
2. Problem Statements and Business Model Canvas
3. Visit company integrating design thinking and practicing agile
4. Personas and linking to problem statement
5. Story statements to epics (body of work)
6. Creation of a backlog of work and how to prioritize (work, showcase, retrospective)

Format & Grading
<TBD>

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students. 2nd year students preferred.
IDX 597 Special Topics: Field Guide to Facilitation
Faculty: Sari Gluckin

Course Overview
Facilitation is the unspoken, often untaught skill that can make all the difference in your ability to lead others through routine as well as more complex, adaptive challenges. In this class you will become a more adept, agile and attuned facilitator through hands-on practice and exposure to facilitation principles, processes and techniques. You will also learn ways to guide teams to new solutions or desired outcomes in ways that build alignment, engagement and momentum.

Learning Objectives
This course will teach students to be more agile and confident facilitators in a variety of settings and contexts.

Learning Outcomes
At the conclusion of the course, students will be able to:
• Leverage their personal thinking style as facilitators
• Experience and practice the key principles of engaging facilitation
• Optimize the levers of success: space, energy, time, content, language, resources and client engagement
• Design and lead facilitated experiences using different tools and approaches.
• Journey map a session (what are the activities and behaviors before, during and after a session)
• Practice with their own Field Notes - a compilation of learnings, self reflections, tools and techniques

Course Outline
1. Your Thinking Style, Your Strengths and Biases
2. Experience Group Problem Solving
3. Process Principles with Design Thinking Integration
4. Clarify and Ideate: Tools and Practice
5. Develop and Implement: Tools and Practice
6. Levers of Success/Journey Map
7. Field Notes, Lessons Learned the Hard Way

Format & Grading
Each class has a mix of content and hands-on practice. This class will be small so that each student has several opportunities to facilitate and practice multiple roles (client, facilitator, resource).

Class Participation - 30%
Assignments/practice sessions - 40%
Field Notes and Reflections - 30%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Data Literacy
Faculty: Laura Mast

Course Overview
Data literacy – the ability to confidently evaluate, interpret, and craft compelling stories with data – is a critical skill for designers working with data-smart products and interdisciplinary teams. But as a new skill for many, data analysis and interpretation can be intimidating - not only what to do with the data, but how.

This 7-week bootcamp-style course offers a tactical introduction to the methods, tools, and techniques for working with “quant” data in the design process. Students will use analytic softwares (Excel, Tableau, etc.) to describe and transform a wide range of common data types, gain exposure to advanced and applied analytics in the workplace, and develop perspectives on evaluating “good” from “bad” data.

Learning Objectives
• Beyond basics with common analytic software, including: cleaning and formatting data for analysis, pivot tables, writing functions and custom formulas, and creating advanced data visualizations
• Bridging theory and practice to evaluate what makes both data and data representations “good” or “bad” - technically, analytically, and socially
• How to work with typical data structures seen in the design process, like time series, census, and geospatial
• How and where data is impacting the design process in business

Learning Outcomes
This class will get students working with data quickly - providing a foundation for new designer/data “translator” roles in business. Students will gain useful best-practice skills they can apply to practice and future courses, developing a foundation for approaching data problems in the design process.

Course Outline
• Measurement and analysis planning
• Cleaning and preparing data for analysis
• Basic visualization and summary statistics
• Advanced techniques in Tableau and Excel
• Working with imperfect data
• Putting data to work

Format & Grading
Each week will explore a different aspect of working with data, supported by discussion, in-class tutorial, and homework assignments. We will use a variety of software (e.g. Excel, Tableau) in class each week, so bring your laptop with software installed.

No prior experience working with quantitative data is required for this course. Student evaluation will be based on participation and contribution to class activities, and by demonstrating mastery of discussed techniques.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Data+Design
Designing A Balanced Business Framework For The Design viable, sensible and just
Faculty: John Cain

Course Overview
A variety of technological and broader environmental transformations are changing the nature of products. Across (nearly?) any industry, smart, connected products and services are reshaping established boundaries and the nature of competition – exposing, as Michael Porter points out, “companies to new competitive opportunities and threats.” A few, well-managed organizations are making big bets – exploiting, as well and shaping, these transformations. GE Aviation, Amazon, Google, Stitch Fix and Bosch are a few leading examples. They succeed by balancing the potentials of tech against a broader set of considerations: business, design, contextual and cultural (business and public mindsets) dimensions.

As exciting are these transformations may be, recent product failures suggest that there’s more to be worked out in the age of the Data Economy. We’re failing to meet the challenge on a number of fronts. Design educator Hugh Dubberly posits “let’s face an embarrassing truth, business is stuck because we don’t know how to make successful smart, connected products.” Examples include: Juicero (the failed $400 connected juicer); clumsy voice-enabled systems; app-based solutions where no app is warranted; AIs that promote discriminatory practices and exclusionary experiences.

Through readings and short exercises, this course will explore a broad, balanced approach for making smart, connected services more viable, sensible and just. We will study a broad range of issues and considerations related to the design, build and operation of complex, adaptive systems. Included will be readings from critical authors in business, technology, HCI, STS, posthuman design and others.

Learning Objectives
• Learn key precepts, theories and frameworks that shape the design, build and operation of complex, adaptive systems to be more viable, sensible and just.
• Develop a new, integrative framework for the design and prototyping of data-smart services, drawing a range of disciplines including technologists, economists, cyberneticists, strategists and others.
• Demonstrate comprehension of course themes through a series of short ‘work out’ exercises.

Learning Outcomes
• Ability to critically assess innovation approaches for the design of data-smart services.
• Practice of a robust integrated framework
• Demonstrated familiarity with and comprehension of key principles from economics, cybernetics, the social sciences, digital technologies, systems design.

Course Outline
Week 1: Context and history of the evolution of smart-connected things
Week 2: Technology overview and general trends
Week 3: Business strategy, innovation and technology
Week 4: Models of HCI
Week 5: Bridging & alternative perspectives (from non-tech communities)
Week 6: An alternative framework: new requirements & design methods
Week 7: Present and share-out

Format & Grading
Each week we will explore one specific facet of the data economy. For each week, a set of required readings are assigned and discussed in class in debate form. For some weeks, students will be given a short project to demonstrate their command of the topic.
Demonstration of reading comprehension via discussion 33%
Weekly assignments total 33%
Final model/synthesis and shareout 34%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Applied Data

Beyond User-Centered: The New Pragmatics Of Design In The Era Of Smart, Connected Stuff
Faculty: John Cain

Course Overview
Twenty years ago, the business world began a shift as important as the industrial or the informational revolutions: a shift that placed users and their experiences at the center of the value chain, as the driver for innovation. But as with any technology or process, the market eventually turned “user-centered” into both a commodity and table stakes—required, but no longer differentiating.

Today, broad technological, social and environmental changes are forcing design practitioners to revisit established models of “the user”, and to pay closer attention to context and culture as the determining requirements for the design of smart, connected services.

In the developmental “toolkit” of research and design methods, processes, frameworks and tools, it’s time for some innovation, borrowing and synthesis. New goals for design are emerging, yet a key gap exists in the designer’s toolkit to help shape differences between:

**Potential** (of what we can make) vs. **commitment** (what we should make)

**Chance** (ignorance about how our creations are used) vs. **responsibility** (for the choices we make as designers and the implications of that work)

This class is rooted in a new understanding of human, but it is decidedly not about conventional humanistic approaches such as design for social good, or “user-centered” solutions for (albeit worthy) epic-scale problems like world hunger, healthcare, the post office or the future of work. Students will work in pairs or solo (no exceptions) on up to three projects during the course of the semester. One, a ‘simple’ smart, connected project like a Nest thermostat. Two, a smart, connected service like Alexa, Echo Look or Instacart. And three, time permitting, the design and development of a business ecosystem.

For each, students will be asked to plot potential pathways of these services to extreme ends of utopian and dystopian futures. These perspectives will allow students to critically examine the claims of technological systems to change everything for the good, or to destroy the world. Lying between these extremes is perhaps a more viable, sensible and just approach for shaping complex, data-enabled systems. Along the way, students will work with, or devise new, techniques, tools, frameworks, heuristics and approaches to shape smart, connected services to the meet the goals as above. We will not evaluate the success of individual projects from the perspectives of business viability or tech feasibility (no exceptions).

Learning Objectives & Outcomes

- Learn key precepts, theories and frameworks that shape the design, build and operation of complex, adaptive systems to be more viable, sensible and just.
- Develop a new, integrative framework for the design of data-smart services, drawing on the thinking from a range of scholars such as: technologists, HCI, appropriate design, cybernetics, posthumanism
- Demonstrate comprehension of readings through in-class discussion
- Demonstrate the ability to shape tech systems through the lens of a new understanding of ‘Human’
- How to be both generative and analytic in the mode of designing and developing data-smart services.

Course Outline
<TBD>
ID Course Descriptions, version 19

Format & Grading
Comprehensions of readings and discussion 30%
Projects 70%

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Data Driven Service Design
Faculty: Denis Weil

Course Overview
Designers are often described as change-makers. However, to-date designers have acted as change-describers or -imagineers and not change-makers (and often not even change-planners). With digital transformation and the rise of emerging technologies, just imagining the change is not only no longer sufficient, but also often leading to sub-optimal solutions. Designers need to step up into the role of change-enablers rolling up our sleeves and working arm-in-arm with stakeholders to set in motion the interventions that will activate change by all actors towards a better state. In this class, we will i.) study different established and emerging change management models (Kubler –Ross’, Stages of Change, Kotter’s 8 step model of change, Ron Heifetz’ Adaptive leadership practice a.o.); and ii.) apply it to a completed design project from one of your workshops.

Learning Objectives
This class will allow students to gain an understanding of best practices in change leadership approaches, strategies and behaviors and simulate their leadership approach in team clinic settings.

Learning Outcomes
• Students will understand the types of data that are at play in service interactions, including contextual data, personal data, historical data, and user-generated data.
• Students will be able to diagram the data inputs and outputs of a system and illustrate a data layer within a service blueprint.
• Students will formulate research questions and interrogate a dataset to answer them.
• Students will articulate the logic of an algorithm that applies data insights to support a user interaction.
• Students will understand how data visualizations and artificial intelligence can be applied to anticipate user needs, reduce friction, present information that guides a user in decision-making and supports him in a process, and connects individual components into a more efficient, networked system.

Course Outline
<TBD>

Format & Grading
This is a lecture class with applied team simulations. Students will work individually and in teams: They will individually develop change leadership plans for one of their “Design plans” from a previous planning, product, service or interaction workshops and then prototype their actions with their study teams for critique and iteration. Grading will be based on mixture of their individual work, team simulations and class presentations.

Enrollment Restrictions
This course is open to all Institute of Design students. Students should have completed at least one planning, product, service or interaction workshop with a “design plan” that requires significant change for the organization it was designed for.
IDX 597 Special Topics: Conversational Interfaces
Faculty: Jeff Mau

Course Overview
Conversational Interfaces will investigate the emerging technologies and user experience involving popular voice services including Google Assistant, Amazon Alexa as well as chatbot messaging services such as Facebook Messenger and Slack bots. Over the course of the semester we will assess the state of the art, identify strategic opportunities to design solutions and create functional prototypes of our designs. Students will gain experience of the entire strategy and design process.

Learning Objectives
Explore and understand how humans use conversation to communicate, be productive and experience the world
- Foundational relationship between human conversation and voice technologies
- Extend the concept of virtual assistant as the entity model for engagement
- Gain understanding of how machine learning plays a role in crafting user experiences

Learning Outcomes
When completed, students will be able to define strategy and design products and services utilizing conversational technologies

Course Outline
Foundations of conversational experiences:
- Voice interaction as a new paradigm in computing
- Human factors of conversation to make engagement feel natural
- Machine learning to adapt to languages and dialects

Beyond basics:
- Reimagining Virtual Assistants as traditional entity model
- Machine learning to drive intimacy with the user
- Building trust by user in the system to make decisions on one’s behalf
- Exploring how mental models change from queries to conversations

Strategy:
- Where and how is conversational technology best used as a competitive advantage?
- What are the optimal user scenarios where voice technology is best implemented?
- What are the limits of the technology and how might we design the future of this new way of computing?

Format & Grading
This course is structured as a workshop meeting for three hours on Mondays, 6-9pm. A portion of class will be lectures to introduce concepts within the area of conversational design. At least half of the class time will be dedicated to designing concepts and developing functional prototypes.

While we will explore writing software, students are not required to have prior experience with software development. While voice technologies are primarily developed for the English language, students with mastery of other languages are encouraged to enroll.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.
IDX 597 Special Topics: Adaptive Leadership
Faculty: Denis Weil

Course Overview
Designers are often described as change-makers. However, to-date designers have acted as change-describers or -imagineers and not change-makers (and often not even change-planners). With digital transformation and the rise of emerging technologies, just imagining the change is not only no longer sufficient, but also often leading to sub-optimal solutions. Designers need to step up into the role of change-enablers rolling up our sleeves and working arm-in-arm with stakeholders to set in motion the interventions that will activate change by all actors towards a better state. In this class, we will i.) study different established and emerging change management models (Kubler –Ross’, Stages of Change, Kotter’s 8 step model of change, Ron Heifetz’ Adaptive leadership practice a.o.); and ii.) apply it to a completed design project from one of your workshops.

Learning Objectives
This class will allow students to gain an understanding of best practices in change leadership approaches, strategies and behaviors and simulate their leadership approach in team clinic settings.

Learning Outcomes
When completed, students will be able to define strategy and design products and services utilizing conversational technologies

Course Outline
*(TBD)*

Format & Grading
This is a lecture class with applied team simulations. Students will work individually and in teams: They will individually develop change leadership plans for one of their “Design plans” from a previous planning, product, service or interaction workshops and then prototype their actions with their study teams for critique and iteration. Grading will be based on mixture of their individual work, team simulations and class presentations.

Enrollment Restrictions
No prerequisites. This course is open to all Institute of Design students.

Students should have completed at least one planning, product, service or interaction workshop with a “design plan” that requires significant change for the organization it was designed for.
IDN 685 PhD Principles and Methods of Design Research
Faculty: Laura Forlano

Course Overview
This course surveys a range of research methods from different scientific traditions including science, social science, engineering, and design.

Through a deep reading of monographs (dissertations that have been published as books) from the social sciences and design fields, the following approaches will be discussed: experimental vs. field research, inductive vs. deductive reasoning, positivist vs. grounded theory traditions, quantitative vs. qualitative research, comparative vs. longitudinal studies, descriptive vs. generative methods, and method-driven vs. question-driven research as well as the combination of these traditions into mixed methods approaches. For example, what counts as data? How is it collected and analyzed? What is the overall purpose of the research in these various traditions and how are contributions made and measured?

Learning Objectives
Students will become familiar with key methodological approaches from science, social science, engineering and design in order to provide a strong basis for their individual research. Emphasis is placed on surveying different methodological traditions in order to understand their strengths and weaknesses.

Learning Outcomes
• Students will become familiar with research methods from different scholarly traditions
• Students will develop their own perspective on the methodological approach that they may pursue in their individual research
• Students will gain exposure to previous doctoral research, including its strengths and weaknesses

Course Outline
1. Qualitative Research
2. Quantitative Research
3. Data Collection
4. Data Coding and Analysis
5. Design Research
6. Final Presentations

Format & Grading
Class time will be focused on detailed discussions and close readings of methodological texts from different scientific traditions and scholarly monographs from leading social scientists and designers. Grades will be based on: 20% Class Participation, 30% Weekly Assignments, and 50% Final Project

Enrollment Restrictions
This class is limited to doctoral students at the Institute of Design.
IDN 687 PhD Philosophical Context of Design Research
Faculty: Laura Forlano

Course Overview
This course surveys the major philosophies and theories that underpin design research through exposure to some of the most significant scholars and public intellectuals of the last 100 years. Specifically, the following perspectives and traditions will be discussed: pragmatism, structuralism, activity theory, phenomenology, actor network theory, theories of culture and symbolic interaction. For example, what do these traditions offer the field of design and how might we advance these perspectives through design practice? How have these different philosophical traditions become embedded in current philosophies of design research and work?

Learning Objectives
Students will become familiar with key philosophical traditions in order to provide a strong basis for their individual research. Emphasis is placed on surveying different traditions in order to understand their strengths and weaknesses as well as their historical and current contributions to the field of design.

Learning Outcomes
• Students will become familiar with philosophical traditions from different disciplines in the social sciences
• Students will develop their own perspective on the theoretical approach that they may pursue in their individual research
• Students will gain exposure to leading scholars in the social sciences that have made some of the most significant philosophical contributions in the past 100 years

Course Outline
1. Pragmatism and structuralism
2. Phenomenology and activity theory
3. Theories of Culture and Symbolic Interaction
4. Actor network theory
5. Theories of Democracy and Change
6. Final Presentations

Format & Grading
Class time will be focused on detailed discussions and close readings of canonical texts from different philosophical and theoretical traditions. Grading will be based on: 20% Class Participation, 30% Weekly Assignments, and 50% Final Project

Class Restrictions
This class is limited to doctoral students at the Institute of Design.
IDN 689 PhD Research Seminar
Faculty: Laura Forlano, Carlos Teixeira, Tom MacTavish

Course Overview
This course is a "full court" seminar in which all doctoral students are invited and encouraged to participate and support your doctoral research. The purpose of this doctoral seminar is to stimulate critical, constructive and generous discussion of PhD students' research and writing in progress, to continue cultivating a lively and supportive intellectual design research community. Weekly readings will also be included to foster discussion.

Investigation and discussion by faculty and students of topics of interest from different perspectives such as building a design research discourse (reading research papers critically, selecting among publication venues); investigating alternative philosophical bases for design research (comparing empirical, pragmatic, and phenomenological approaches); or exploring methodological and theoretical conflicts in design research.

The core assignment is a completion of a paper or article for a peer-reviewed conference or journal. Alternately, the writing for the course could be a draft dissertation chapter or full doctoral research proposal, based on the guidance of your PhD advisor.

Learning Objectives
Encourage and expose PhD work to support the design research community of the Institute of Design and beyond

Learning Outcomes
Students will be able to progress on their own work and develop a rich set of critiques of each other’s work

Course Outline
Weekly discussions as set by the instructor

Format & Grading
Each week will include discussion of core readings, discussion rounds of doctoral students' plans and progress (3 core readings, writing plans), and presentations by doctoral students (critiques of recent PhD dissertations, writing-in-progress). Each student will meet 1:1 with the instructor in relation to writing plans and for review comments on draft writing.

- Identify 3 core research articles that are key works for your doctoral research (one or more can run counter to your thesis, argument is good!)
- Choose a recent PHD-design dissertation to read and write a brief methodological critique with discussion of key concepts, epistemological stance and ontological perspective, generation of knowledge for design. (Critique assignment description will be provided.)
- Each PHD candidate will be asked to present his or her writing-in-progress or research-in-progress during the semester.

Final assignment is full draft of writing for peer-reviewed conference or journal, section of dissertation proposal, or dissertation chapter.

Enrollment Restrictions
This seminar is for ID doctoral students only. Students may take this class multiple times for a total of 12 credits toward their degree.