INSTITUTE OF DESIGN (IDN)

IDN 502
Making the User-Centered Case
Covers the rhetoric of design case making using verbal, quantitative, visual, and spatial modes of persuasion. Includes a survey of document and presentation types useful in the product development process.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 504
Introduction to Observing Users
This class will introduce students to theory and methods of behavioral observation, description, and analysis.
Lecture: 0 **Lab:** 0 **Credits:** 3

IDN 506
Research Planning and Execution
This course examines research methods used throughout the design and development process from process, financial, and results standpoints with a focus on planning research activities.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 508
Principles and Methods of User Research
This course is a survey of the research methods commonly used in design research and gives an overview of distinctions between primary and secondary research, quantitative and qualitative research, and online and in-person research in order to prepare students for research-intensive projects.
Lecture: 0 **Lab:** 0 **Credits:** 3

IDN 510
Research Photography
This course aims to give design researchers the knowledge and tools to consistently make the right decisions when capturing and selecting photographs to use in storytelling.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 512
Interview Methods
The focus of this course is to gain familiarity with an underlying set of the principles and practices of ethnographic interviewing.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 514
Experience Modeling
This course is intended to familiarize students with the methods and practice of experience modeling. It entails a deep understanding of people in naturalistic, everyday settings and interpretive methods of analysis to create representations of the organization of everyday life.
Lecture: 3 **Lab:** 0 **Credits:** 1.5,3

IDN 516
Cultural Probes
This course examines methods that aim to understand the cultural meaning that artifacts have to people.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 517
Stimlulus in Design Research
This course will introduce students to the whens and hows of creating and using stimulus effectively in their practice of design research.
Lecture: 1.5 **Lab:** 0 **Credits:** 1.5

IDN 518
Survey Methods
This class aims to familiarize designers with the tools and techniques that are commonly used by quantitative researchers such as surveys and statistical analysis. Students will learn how to design, understand, and evaluate surveys and other quantitative research tools and techniques as well as how to use online survey tools in their own work.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 520
Co-Design and Participatory Research
This course will introduce students to co-design methods including when to use co-design methods, what are the advantages and disadvantages of co-design methods, and how to create engaging co-design workshops.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 522
Coding and Analysis
This course will allow students to gain rigorous training in how to develop coding schemes, code qualitative data, and gain a deeper analysis of users based on field research.
Prerequisite(s): [(IDN 504)]
Lecture: 0 **Lab:** 0 **Credits:** 1.5

IDN 526
Online Research Methods
This class covers methods and tools used in online research with a focus on the design of research objectives, implementation of their study protocol, and moderation of study participants.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 530
Introduction to Design Planning
Introduces students to the broad context of design planning. It includes a discussion of the general forces acting upon an organization (competition, technological developments, channels of information, and product distribution) and ways to understand the people who use design.
Lecture: 0 **Lab:** 0 **Credits:** 1.5,3

IDN 532
Business Frameworks and Strategy
A descriptive course in business strategy for designers covering new venture strategy, competitive strategy, marketing strategy and tactics, decision sciences, entrepreneurship, private equity, business plan writing, innovation, introductory finance, and self-discovery. This course will build a series of non-mathematical models of success and failure in both entrepreneurial and corporate settings.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 534
Business Models and Value Webs
This course will consider the relationship between theories and practice in the two very different realms of economics and design.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 535
Organizational Models of Innovation
This course will examine traditional and emerging models for how large organizations and other corporate entities engage to develop innovative offerings. Readings will cover recent developments in cooperative and open-sourced forms of innovation development.
Lecture: 1.5 **Lab:** 0 **Credits:** 1.5

IDN 536
Introduction to Portfolio Planning
This course is an introduction to the techniques and processes involved in portfolio planning. We will explore the role of portfolio planning in typical organizations and how it relates to other processes like strategy and specific product development.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 537
New Venture Design
New Venture Design will teach aspiring entrepreneurs how to build design-led start-ups and new ventures, making this course ideal for students with new business ideas that they have been itching to design and launch. This exploration will happen across the four critical elements of a new venture: brand / value proposition; user experience; business model; and organization. Students will walk away with an understanding of how to architect new ventures using a combination of user empathy, market data, and intuition.
Lecture: 1.5 **Lab:** 0 **Credits:** 1.5

IDN 538
Design Planning Workshop
This course covers the application of design planning methods and theory to real-world challenges. With a team-based, hands-on approach, students will tackle all stages of problem solving from initial framing to final solution proposals. Students may take this class multiple times, non-concurrently, for a maximum of 12 credits towards their degree.
Lecture: 0 **Lab:** 0 **Credits:** 3

IDN 539
Social and Economic Context of Design
This course examines the broader issues and forces that affect the conditions of how design can be effective within typical organizations. Through exercises and application of frameworks to examine these forces, students learn to recognize and adapt design plans to changing contexts.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 540
Planning Implementation
Introduces frameworks and methods for effectively implementing change in organizations. Using cases, students will identify principles, actions, and measures that mitigate risk, improve implementation success, and inform stronger designs.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 542
Behavioral Economics
This course will introduce how concepts from the field of behavioral economics can be thought of as another kind of "human factor" and ways in which they can help inform the process of design thinking.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 543
Communication Strategies
This class introduces students to key concepts and methods to communicate design work. This includes a conceptual shift from communication as transmission of content to collaborative construction to better engage and align stakeholders in design work.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 544
Diagram Development
Explores the language of diagrams as a communication means to represent different types of abstract, relational information. Students will be introduced to design principles of developing effective diagrams and multiple types of diagrams.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 546
Metaphor and Analogy in Design
This class explores metaphor for its utility as a powerful thinking and communication tool drawing from research in academic fields such as cognitive linguistics and visual communications. Students will consider metaphors and analogies (as well as similes, allegories, metonymies, and other visual/verbal devices) for their power open up new thinking, frame change and suggest action -- all critical communication milestones in design planning.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 548
Advanced Diagramming
This class focuses on the study and development of visualizations to expand information presentation by using dynamic, interactive properties. Explorations to include data narratives, data visualization, time-based visualizations, analyzing motion, narration, transitions, and other visual properties that can enhance comprehension.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 550
Communication Design Workshop
A project-oriented workshop focusing on applying design principles to link theoretical methods to practice in the area of human-centered communication design. Students may take this class multiple times, non-concurrently, for a maximum of 12 credits towards their degree.
Lecture: 0 **Lab:** 0 **Credits:** 3

IDN 552
Fundamentals of Visual Communication
Discusses pictures, abstract symbols, text, numbers, diagrams, three-dimensional form, and other sign systems in the context of communicating a designed offering. Additional teachings include the basics of visual communication principles to aid in developing effective communications.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 554

Theories of Communication

This class introduces students to theories of communication from other academic fields for application in design. It explores broadly the conception of communication to include relevant perspectives from education, social psychology, phenomenology and knowledge management.

Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 556

Communication in the Planning Process

This class teaches students how to use communication as a design method 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.

Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 562

Modeling Complexity

How does one visually capture and represent complex systems, topics, and activities that are too large to conceptualize using memory and cognition alone? Modeling complexity is a visual approach to large-scale problem definition that seeks to represent the full picture of a system by applying theories of visual perception and known techniques for representing relationships in data.

Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 564

Information Structuring and Management

The class 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.

Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 566

Systems Approach to Design

The primary goal of the course is to understand systems thinking and approaches in design. The course reviews historical development of systems approaches and introduces systems concepts and approach to 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.

Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 568

Service Systems Workshop

This workshop introduces concepts of services, design principles, and methods that are needed for the design of service systems. Topics include the nature of services, customer acquisition and retention, value propositions in service business, service prototyping and pilot testing, stakeholder management, infrastructure, and operational and implementation issues. Students may take this class multiple times, non-concurrently, for a maximum of 12 credits towards their degree.

Lecture: 0 **Lab:** 0 **Credits:** 3

IDN 570

Structured Planning Workshop

Introduces structured planning methodology and applies it to complex design problems at the system level. Team techniques are emphasized, and formatted information handling and computer-supported structuring processes are used through the design process from project definition to information development, structuring, concept development, and communication. Students may take this class multiple times, non-concurrently, for a maximum of 12 credits towards their degree.

Lecture: 0 **Lab:** 0 **Credits:** 3

IDN 571

Systems and Systems Theory in Design

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. Class 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.

Lecture: 1.5 **Lab:** 0 **Credits:** 1.5

IDN 572

Platform-Based Design Strategy

Platform is 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. This course explores how platforms provide a base to accommodate many options that can support diverse contexts and user needs.

Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 573

Sustainable Solutions Workshop

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 well-being of communities.

Lecture: 3 **Lab:** 0 **Credits:** 3

IDN 574
Design Process and Knowledge
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 and interdisciplinary collaboration as well as developing and managing effective design processes, methods, and organizations for enabling innovative design.
Lecture: 3 **Lab:** 0 **Credits:** 1.5

IDN 575
Sustainable Systems Seminar
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.
Lecture: 1.5 **Lab:** 0 **Credits:** 1.5

IDN 576
Systems Modeling and Prototyping
This workshop class 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.
Lecture: 0 **Lab:** 0 **Credits:** 3

IDN 578
Human System Integration
This course teaches students the principles of socio-technical system design. 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.
Lecture: 3 **Lab:** 0 **Credits:** 3

IDN 685
Ph. D. Principles and Methods of Design Research
Introduces the basic principles and methods for assembling, developing, and analyzing information in the tasks of design research. Techniques for collecting data, testing hypotheses, and presenting conclusions are learned in the context of conducting a pilot research project.
Lecture: 0 **Lab:** 0 **Credits:** 1.5

IDN 687
Ph. D. Philosophical Context of Design Research
Explores the philosophical framework for conducting research and building knowledge in the field of design. Topics include concepts from epistemology, phenomology, and structuralism. Comparisons are made between design research and research in other fields.
Lecture: 0 **Lab:** 0 **Credits:** 1.5

IDN 689
Ph.D. Research Seminar
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.
Lecture: 3 **Lab:** 0 **Credits:** 3

IDN 691
Research and Thesis for Ph. D. Degree
Research and thesis writing.
Credit: Variable