Institute of Design

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Dean:
Patrick F. Whitney

A Legacy of Experimenting and Responding to Change
The Institute of Design has continuously explored emerging ideas about how design interacts with society. At its founding as the New Bauhaus in 1937, the faculty and students experimented with new visual languages and use of new media and material. The school was renamed the Institute of Design (ID) in 1944 and merged with Illinois Institute of Technology in 1949. In the mid-1950s, while the main stream of design focused on visual embellishment of communications and products, ID faculty recognized design could be useful in the large-scale problems facing business and society and were the first to incorporate approaches from the social sciences with the design process. In the 1960s, two decades before it was common, ID pioneered the use of computers to support analysis and synthesis in design. In the late 1980s, ID faculty noticed an increasing need for organizations to link their strategy to a deeper understanding of people. Thus, ID created tracks of study in strategic design planning and human-centered design to complement traditional specialties like communication design and product design. As design addressed larger problems and increased its influence in various parts of organizations, it became evident that design needed a more formal body of knowledge. To help increase the rigor and speed of the development of new theories and methods in design, and with the support of the GE Foundation, ID created the first Ph.D. program in design in the United States. Today, ID is focused on using design methods to address complex problems that confront organizations and society at large.

ID Today
IIT Institute of Design attracts students and faculty from around the world who want to create and learn new design methods to address major challenges of organizations and society at large. The 200-person community of graduate students, full-time and adjunct faculty, staff, and visiting researchers are very diverse yet share a common goal.

The diversity at ID comes from the interesting people who join. Entering students, on average, have six years of professional experience in design or in other fields including the social sciences, engineering, business, and the arts. Some are recent graduates from the best universities in the world while others may have thirty years of work experience or graduate degrees in a variety of fields. About forty percent come from outside the United States. ID consistently has gender balance amongst the student body. Twelve full-time and forty adjunct faculty members represent a phenomenal range of experiences from academic research to leadership within design firms and centers of innovation at large companies. Visiting researchers come from government agencies and other universities around the world, representing a variety of fields such as design, law, and business.

Those who join ID share the goal of using design methods to help define and solve challenges facing companies, governments, and civic organizations. They have noticed that standard ways to plan for next-generation products, messages, and services lack efficacy because the nature of business and the lives of users are more complex, ambiguous, and fast changing than before. They believe structured design methods can define and explore strategic options to make organizations more productive and improve the daily life of people.

ID Degree Programs
ID’s programs are markedly different from other graduate design programs because we teach rigorous methods, focus on complex problems, and link strategy to a human-centered viewpoint.

The Master of Design (M.Des.) program is for students who want to achieve mastery of advanced design. Students can take a variety of classes to form one or more specialties. These include communication design, interaction design, product design, strategic planning, user research, design methods, and systems design. This full-time program has a two-year duration for those holding degrees in industrial or communication design and a three-year duration for those with degrees in other fields.

The M.Des./M.B.A. program allows a student to earn a Master of Business Administration degree (through IIT Stuart School of Business) while concurrently earning the Master of Design degree.

The Master of Design Methods (M.D.M.) program is for mid-career professionals from a variety of backgrounds who want to augment their current abilities by learning advanced design methods. Students may have backgrounds from design or other fields and should have at least ten years of experience leading projects in either design or innovation. The M.D.M. can be earned full-time over two semesters or part-time (attending a modified weekend format) over four semesters.

The Ph.D. program is for researchers who seek to contribute to theories and methods core to the field of design.
### Degrees Offered
- Master of Design (M.Des.)
- Master of Design Methods (M.D.M.)
- Master of Design/Master of Business Administration (M.Des./M.B.A.)
- Doctor of Philosophy (Ph.D.)

### Faculty Research
Full-time and adjunct faculty represent specific areas of expertise critical to the field, like product design, communication design, information design, design planning, the history of design, interactive diagrams, cognitive psychology, anthropology, semantics of form, imaging, and computer science. The faculty at ID conducts various types of research supported by foundations, companies, government agencies, and individuals. In general, the research intends to add to the body of knowledge in design while at the same time demonstrates how design can be applied to a variety of problems that often seem extremely complicated or vexingly ambiguous. See id.iit.edu for more information.

### Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Position and Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexis, Jeremy</td>
<td>Senior Lecturer and Director of Interprofessional Projects (IPRO). B.Arch., Illinois Institute of Technology; M.Des., IIT Institute of Design.</td>
</tr>
<tr>
<td>Basapur, Santosh</td>
<td>Lecturer of Design and Planning Coordinator for Human Factors and Systems.</td>
</tr>
<tr>
<td>Erwin, Kim</td>
<td>Assistant Professor. B.A., Loyola University; M.Des., IIT Institute of Design.</td>
</tr>
<tr>
<td>Forlano, Laura E.</td>
<td>Assistant Professor. B.A., Skidmore College; Diploma, John Hopkins University; Master of International Affairs, M.Phil., Ph.D., Columbia University.</td>
</tr>
<tr>
<td>Ichikawa, Tomoko</td>
<td>Senior Lecturer. B.A., International Christian University (Japan); M.S., Illinois Institute of Technology.</td>
</tr>
<tr>
<td>Kumar, Vijay</td>
<td>Professor. B.S., National Institute of Design (India); M.S., Illinois Institute of Technology.</td>
</tr>
<tr>
<td>MacTavish, Thomas J.</td>
<td>Assistant Professor. B.A., Central Michigan University; M.A., University of Iowa; M.A., University of Michigan.</td>
</tr>
<tr>
<td>Mathew, Anijo</td>
<td>Associate Professor. B.Arch., Birla Institute of Technology (India); M.Des. Harvard University.</td>
</tr>
<tr>
<td>Mayfield, Matthew</td>
<td>Senior Lecturer and Assistant Dean, Academics. B.S., Illinois Institute of Technology; M.C.S., University of Chicago.</td>
</tr>
<tr>
<td>Ruecker, Stan</td>
<td>Associate Professor. B.A., B.Sc., University of Regina; M.Des., Ph.D., University of Alberta (Canada).</td>
</tr>
<tr>
<td>Sato, Keiichi</td>
<td>Charles Owen Professor. B.S., M.S, Osaka Institute of Technology (Japan); M.S., IIT Institute of Design.</td>
</tr>
<tr>
<td>Thaler, Martin</td>
<td>Senior Lecturer. B.F.A., Rhode Island School of Design; M.F.A., Royal College of Art (England).</td>
</tr>
<tr>
<td>Whitney, Patrick F.</td>
<td>Steelcase/Robert C. Pew Professor of Design and Dean. B.F.A., University of Alberta (Canada); M.F.A., Cranbrook Academy of Art.</td>
</tr>
</tbody>
</table>
Admission Requirements

Admission to all degree programs at ID is highly competitive. Meeting the minimum requirements does not guarantee admission. Test scores and GPA are just two of several important factors considered.

Master of Design

For admission to the Master of Design (M.Des.) and Master of Design / Master of Business Administration (M.Des./M.B.A.) programs, an applicant must hold a baccalaureate degree from an accredited educational institution with a minimum cumulative GPA of 3.0/4.0, have a strong record of academic achievement, and be highly recommended. Applicants should have a minimum of two years of professional experience. Applicants from countries whose native language is not English must submit scores for TOEFL (100 minimum) or IELTS (7 minimum). Portfolios are required for applicants who possess design degrees. Applicants without design degrees are encouraged to apply to the MDes program. All applicants without an undergraduate degree in industrial or communication design must submit GRE (310 minimum) or GMAT (600 minimum) scores. Regardless of previous degrees, students may be required to complete prerequisite design courses before starting their MDes requirements.

Master of Design Methods

In addition to the requirements for Master of Design, applicants to the Master of Design Methods program should have at least ten years of professional experience in leading teams creating novel, effective products, communications or services. A document or portfolio representing this work is required along with three letters of recommendation from professional colleagues. For those without design degrees, the quality of this professional work substitutes for GRE/GMAT test scores.

Doctor of Philosophy

Applicants to the Ph.D. program must hold a master’s degree in design from an accredited educational institution, have a distinguished record of academic achievement, and be very highly recommended. Applicants without a master’s degree should apply for the M.Des. program. Doctoral applicants with a master’s degree in design must show evidence of distinguished academic and, if appropriate, professional work in their fields. Depending on the applicant’s academic background and intended area of study, other prerequisite courses may also be required.
Design

Master of Design

54 credit hours

The Master of Design (M.Des.) program is a two-year, 54 credit-hour degree program intended for those seeking professional mastery at the highest level in the field. The program does not require the formal selection of a concentration area or a final thesis project. Students may construct their own curriculum after taking a core of methods courses focused on understanding users, analyzing complex information, and exploring and prototyping alternative solutions. Examples of individual courses of study include communication design, interaction design, product design, strategic planning, user research, design methods research, and systems design.

Residence
The M.Des. program requires continuous full-time study at the Institute of Design for a minimum of four semesters. Students must enroll in at least 13.5 credit hours of course work each semester.

Curriculum

54 credit hours (84 if foundation courses are necessary)

Required Courses
7.5 credit hours
IDN 504 Introduction to Observing Users
IDN 530 Introduction to Design Planning
IDX 508 Human Factors in Design
IDX 542 Techniques in Design Analysis

Foundation Courses
30 credit hours
These courses are prerequisite for students without an undergraduate degree in industrial or communication design and must be completed prior to proceeding with any other M.Des. requirements.
IDN 481 Introduction to Design 1
IDN 482 Introduction to Design 2
IDN 483 Introduction to Communication Design 1
IDN 484 Introduction to Communication Design 2
IDN 485 Introduction to Product Design 1
IDN 486 Introduction to Product Design 2
IDN 487 Introduction to Photography
IDN 488 Introduction to Digital Media

Elective Courses
46.5 credit hours
Students select a series of courses to meet the objectives of the student’s professional goals. Choices will be made in consultation with the student’s advisor and will count for at least 40.5 credit hours of the required program. Up to 6.0 credits may be taken outside of ID with the approval of the student’s advisor.
IDN 502 Making the User Centered Case
IDN 506 Research Planning and Execution
IDN 508 Principles and Methods of User Research
IDN 510 Research Photography
IDN 512 Interview Methods
IDN 514 Experience Modeling
IDN 516 Cultural Probes
IDN 518 Survey Methods
IDN 520 Co-Design and Participatory Research Methods
IDN 522 Coding and Analysis
IDN 524 Ethical and Responsible Research
IDN 526 Online Research Methods
IDN 528 Collecting and Using Video Data
IDN 532 Business Frameworks and Strategy
IDN 534 Business Models and Value Webs
IDN 536 Introduction to Portfolio Planning
IDN 538 Design Planning Workshop
IDN 540 Planning Implementation
IDN 542 Behavioral Economics
IDN 543 Communication Methods
IDN 544 Diagram Development
IDN 546 Metaphor and Analogy in Design
IDN 548 Advanced Diagramming
IDN 550 Communication Design Workshop
IDN 552 Fundamentals of Visual Communication
IDN 554 Theories of Communication
IDN 556 Communication in the Planning Process
IDN 558 Innovation Narratives
IDN 560 Writing as Sketching
IDN 562 Modeling Complexity
IDN 564 Information Structuring and Management
IDN 566 Systems Approach to Design
IDN 568 Service Systems Workshop
IDN 570 Structured Planning Workshop
IDN 572 Platform-Based Design Strategy
IDN 574 Design Process and Knowledge
IDN 576 Systems Modeling and Prototyping
IDN 578 Human System Integration
## Master of Design - continued

**Elective Courses**

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<thead>
<tr>
<th>IDX</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>502</td>
<td>New Product Definition</td>
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<td>504</td>
<td>Prototyping Methods</td>
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<td>506</td>
<td>Form and Materials</td>
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<td>510</td>
<td>Design Development and Implementation</td>
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<td>512</td>
<td>Product Design Workshop</td>
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<td>514</td>
<td>Product Architecture and Platforms</td>
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<td>516</td>
<td>Advanced Product Design</td>
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<td>518</td>
<td>Interaction Design Methods</td>
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<td>520</td>
<td>History of Interaction Design</td>
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<td>522</td>
<td>Persuasive Interaction Design</td>
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<tr>
<td>524</td>
<td>Interaction Design Workshop</td>
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<td>526</td>
<td>Digital Development Workshop</td>
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<td>528</td>
<td>Prototyping Interactions</td>
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<td>530</td>
<td>Interaction Design for Immersive Systems</td>
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<td>532</td>
<td>Interaction Design for Embedded Systems</td>
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<td>534</td>
<td>Interactive Space</td>
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<td>536</td>
<td>Extensions of Media and Technology</td>
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<td>538</td>
<td>Networked Cities</td>
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<td>540</td>
<td>Networked Objects</td>
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<td>544</td>
<td>Techniques in Design Synthesis</td>
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<td>546</td>
<td>Intellectual Property in Design</td>
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<td>548</td>
<td>Innovation Methods</td>
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<td>550</td>
<td>Building and Understanding Context</td>
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<tr>
<td>594</td>
<td>Faculty Research</td>
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<td>597</td>
<td>Special Topics</td>
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## Master of Design Methods

30 credit hours

The Master of Design Methods (M.D.M.) is a nine-month full-time (or four-semester part-time) executive master’s degree for exceptional design, management, engineering, and other professionals who wish to acquire robust design methods and frameworks and apply them to the development of products, communications, services, and systems. M.D.M. courses cover design methods and frameworks in areas such as user observation and research; prototyping of new services, products and businesses; creating systems of innovation; visualizing alternative futures; and linking user innovation to organizational strategy.

### Residence

The M.D.M. can be taken in two semesters (full-time) with a minimum of 15 credit hours each semester or over four semesters (part-time), attending an alternate modified-weekend format, with a minimum of 7.5 credit hours each semester.

### Curriculum

30 hours

**Required Courses**

7.5 hours

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>IDN 504</td>
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<td>IDX 508</td>
<td>Human Factors in Design</td>
</tr>
<tr>
<td>IDX 542</td>
<td>Techniques in Design Analysis</td>
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</table>

**Elective Courses**

22.5 hours

Students select a series of courses from the available studios and lectures to meet the objectives of the student’s professional goals. Choices will be made in consultation with the student’s advisor and will count for at least 22.5 hours of the program. Students select from the same pool of elective classes as found under the Master of Design description (M.D.M. part-time program may include additional pre-determined electives).

## Master of Design/Master of Business Administration

44 Institute of Design Credits
36 Stuart School of Business Credits

**Required Courses**

7.5 Credit Hours from Institute of Design

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30 Credit Hours from Stuart School of Business

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>BUS 510</td>
<td>Building an Innovative and Sustainable Business</td>
</tr>
<tr>
<td>BUS 550</td>
<td>Business Analytics for Competitive Advantage</td>
</tr>
<tr>
<td>BUS 590</td>
<td>Business Innovation in the Next Economy</td>
</tr>
<tr>
<td>MBA 501</td>
<td>Accounting for Strategic Decision Making</td>
</tr>
<tr>
<td>MBA 505</td>
<td>Contemporary Economic Analysis &amp; Game Theory</td>
</tr>
<tr>
<td>MBA 506</td>
<td>Leading and Managing Knowledge Intensive Organiza</td>
</tr>
<tr>
<td>MBA 509</td>
<td>Financial Management in a Globalized World</td>
</tr>
<tr>
<td>MBA 511</td>
<td>Creating, Communicating, &amp; Delivering Customer V</td>
</tr>
<tr>
<td>MBA 513</td>
<td>Operations &amp; Technology Management</td>
</tr>
</tbody>
</table>

**Elective Courses**

30.5 credit hours - Institute of Design
3 credit hours - Stuart School of Business

The program director or academic advisor will develop a curriculum plan when the student begins the dual-degree program. Students select a series of courses from the available studios and lectures to meet the objectives of the student’s professional goals. Students select from the same pool of elective classes as found under the Master of Design description.

Typically, students will reduce the overall credit requirements of typical individual degree programs because M.B.A. will double count 6 M.Des. credits towards general electives and 6 credits towards the design leadership concentration, and M.Des. will double count 6 M.B.A. credits towards electives. The program director may make exceptions to this plan depending upon the student’s individual situation.
Design

Doctor of Philosophy

107 credit hours
Language examination
Comprehensive examination
Dissertation

The Ph.D. in design at IIT Institute of Design is an exemplary program of coursework and academic research in an international environment for supporting top candidates in the field. We have an outstanding record of achievement by our alumni, many of who are engaged at the highest levels of research and teaching. The Ph.D. leads to a dissertation that will extend the body of knowledge in design theory and process.

Requirements
The Ph.D. candidate must have a master’s degree in an area relevant to design. The program requires a minimum of three years of study beyond the master’s degree. For the first four semesters, students must be enrolled at a minimum of 12 credit hours at the Institute of Design. Satisfactory reading knowledge of German, Japanese, French, or Russian must be met before the student applies to take the comprehensive examination.

Schedule
The program begins with three or four semesters primarily of coursework with some research credit hours, followed by a qualifying exam based on the courses. After passing the qualifying exam, the student continues to work on a research proposal that demonstrates sufficient understanding of the research area, a novel significant concept as a basis for Ph.D. research, and well-organized research methods and processes. A Ph.D. examination committee will then be formed to approve the proposal during the comprehensive exam. Upon completion of the dissertation, the Ph.D. candidate will present the research results to the examination committee for the degree to be granted by the university.

Curriculum

Total: 107 credit hours
Coursework: 59 credit hours (including maximum 32 credit hours transferrable from master’s program)
Dissertation research: 48 credit hours

Research
48 credit hours
The research component starts small and grows as the student progresses through his or her candidacy. The dissertation created from this work is intended to create a substantial and original contribution to design knowledge. Typically, 12 credits are earned over the first three terms; the remainder is earned over, at minimum, three additional terms.

Coursework
59 credit hours
Course work includes credit hours transferrable from the master’s program. The maximum credit hours transferrable is 32. Classes include full- or half-semester courses selected from the university’s course offerings to complement objectives of the student’s program. They include 15 credit hours of required courses and 12 credit hours of elective courses as determined by the advisor. Most course work credits are earned within the first three terms of enrollment.

Required courses
(15 credit hours)

IDN 574 Design Process and Knowledge
IDN 576 Systems Modeling and Prototyping
IDN 685 Ph.D. Principles and Methods of Design Research
IDN 687 Ph.D. Philosophical Context of Design Research
IDN 689 Ph.D. Research Seminar (taken twice)
PSYC 545 Graduate Statistics 1 (or equivalent)
Course Descriptions

Numbers in parentheses indicate class, lab, and credit hours, respectively. Graduate standing in the Institute of Design is a prerequisite for all courses.

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.
(3-0-1.5)

IDN 504
Introduction to Observing Users
This class will introduce students to theory and methods of behavioral observation, description, and analysis.
(0-3-3)

IDN 506
Research Planning & 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.
(3-0-1.5)

IDN 508
Principles & 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.
(0-3-3)

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.
(3-0-1.5)

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.
(3-0-1.5)

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.
ERR!

IDN 516
Cultural Probes
This course examines methods that aim to understand the cultural meaning that artifacts have to people.
(3-0-1.5)

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.
(3-0-1.5)

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.
(3-0-1.5)

IDN 522
Coding & 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)]
(0-1.5-1.5)

IDN 524
Ethical & Responsible Research
This course will prepare students to conduct ethical and responsible research in both academic and industry settings. This includes understanding the Institutional Research Board process, creating protocols for informed consent by users, understanding what can and cannot be done in terms of data collection, and understanding data management and storage.
(3-0-1.5)

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.
(3-0-1.5)

IDN 528
Collecting & Using Video Data
This course will introduce students to the use of video data including when to collect video data, what are the advantages and disadvantages of using video data, and how to use video data for storytelling in presentations.
(3-0-1.5)

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.
ERR!

IDN 532
Business Frameworks & 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.
(3-0-1.5)
Design

IDN 534 Business Models & Value Webs
This course will consider the relationship between theories and practice in the two very different realms of economics and design.
(3-0-1.5)

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.
(3-0-1.5)

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.
Prerequisite(s): [(IDN 530)]
(0-3-3)

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.
(3-0-1.5)

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.
(3-0-1.5)

IDN 543 Communication Methods
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.
(3-0-1.5)

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.
(3-0-1.5)

IDN 546 Metaphor & 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.
(3-0-1.5)

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.
(3-0-1.5)

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.
(0-3-3)

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.
(3-0-1.5)

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.
(3-0-1.5)

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.
Prerequisite(s): [(IDN 483) OR (IDN 552)]
(3-0-1.5)

IDN 558 Innovation Narratives
In this course, students utilize the Hero’s Journey as a framework to build consumer empathy, branded innovations, and meaningful experiences. This course will teach a short introduction to the Hero’s Journey followed by a series of individual and team exercises.
(3-0-1.5)

IDN 560 Writing as Sketching
Building on the foursquare model of abstraction, this class will explore writing as a tool. It uses sketching as its guiding metaphor and will take students on a journey from a simple line through techniques that add depth and perspective to one’s writing. Classes will include discussion and in-class writing activities that will encourage students to practice and iterate through feedback and critique.
(0-3-3)
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.  
(3-0-1.5)

IDN 564  
**Information Structuring & 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.  
(3-0-1.5)

IDN 566  
**Systems Approach to Design**  
Introduces concepts, principles, and methods for defining, understanding, and designing complex design problems using systems concepts and approaches. Particularly, various forms of system modeling methods are used to represent the overall domain of interest, design concepts for revealing complex, non-inceptive relationships. Important topics include systems theory and methodologies, modeling, causality, and formalisms.  
(3-0-1.5)

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.  
(0-3-3)

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.  
(0-3-3)

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.  
(3-0-1.5)

IDN 574  
**Design Process & 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.  
(3-0-1.5)

IDN 576  
**Systems Modeling & 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.  
(0-3-3)

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.  
(3-0-1.5)

IDN 685  
**Ph.D. Principles & 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.  
(3-0-1.5)

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, phenomenology, and structuralism. Comparisons are made between design research and research in other fields.  
(3-0-1.5)

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.  
(3-0-3)

IDN 691  
**Research & Thesis for Ph. D. Degree**  
Research and thesis writing.  
(Credit: Variable)
IDX 502  
New Product Definition  
This course introduces students to the professional and theoretical aspects of the product definition process. It covers the process of creating a new product definition in detail, the characteristics of new product definition documents, aspects of organizational structure and dynamics as they relate to developing new product definitions, and sources of innovation.  
(0-3-3)

IDX 504  
Prototyping Methods  
Prototyping is a key method that designers use to navigate the design development process. Although prototyping is often thought of as coming at the end of the process to verify a design 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 the selected direction.  
(3-0-1.5)

IDX 506  
Form & Materials  
In this course students will examine what, how, and why product form happens. Topics include the relationship between a product’s form and corporate identity, visual trends, new materials, manufacturing techniques, semantics, product architecture, and ergonomics.  
(3-0-1.5)

IDX 508  
Human Factors in Design  
Analysis of issues involved in a design project with a human factors perspective is an important step during user research and the design development process. Knowing the basic concepts and principles of human factors will enable students to be user centered in their approach.  
(3-0-1.5)

IDX 510  
Design Development & Implementation  
An introduction to the common methods used to produce or manufacture products. Alternative processes, materials and finishing methods, relative costs, and applicability to design of products will be explored.  
(3-0-1.5)

IDX 512  
Product Design Workshop  
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. Students may take this class multiple times, non-concurrently, for a maximum of 12 credits towards their degree.  
(0-3-3)

IDX 514  
Product Architecture & Platforms  
This course introduces the concept of product architecture and platform to explore their possible applications to different types of products from different viewpoints.  
(3-0-1.5)

IDX 516  
Advanced Product Design  
This course is an opportunity for students to further explore the entire product development experience from framing through ideation to final concepts. Prerequisite(s): [(IDX 512)]  
(0-3-3)

IDX 518  
Interaction Design Methods  
This course introduces methods for effectively describing the dynamic nature of interaction and applies them to different types of design cases.  
(3-0-1.5)

IDX 520  
History of Interaction Design  
This course examines thought leaders in interaction design, their innovations, and the technology and business contexts that shaped the environment for their work. Students will review designs to better understand the elements that led to significant design breakthroughs.  
(3-0-1.5)

IDX 522  
Persuasive Interaction Design  
This course examines interactive media and focuses on design methods and techniques for improved engagement between the entity providing the offering (e.g., product or service provider) and the entity consuming the offering (e.g., users, stakeholders, and purchasers).  
(3-0-1.5)

IDX 524  
Interaction Design Workshop  
This workshop offers students the opportunity to practice methods for design research, concept development, interaction design, and rapid prototyping.  
(0-3-3)

IDX 526  
Digital Development Workshop  
This course introduces different tools and platforms for the development of interactive systems. Students will employ the different platforms to translate a concept from concept to prototypes for evaluation and communication. Students may take this class multiple times, non-concurrently, for a maximum of 12 credits towards their degree.  
(0-3-3)

IDX 528  
Prototyping Interactions  
This course introduces different methods and tools for the prototyping of interactive systems. Students will employ the different methods to translate a concept from ideation to installation through multiple layers of sketches, prototypes, and interactive peripherals.  
(0-3-3)

IDX 530  
Interaction Design for Immersive Systems  
This course explores issues in design for interactions that are enabled by affordances available in ubiquitous computing, mixed reality, and virtual reality environments.  
(3-0-1.5)

IDX 532  
Interaction Design Embedded Systems  
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, modalities, affordances, and constraints.  
(3-0-1.5)
IDX 534
Interactive Space
This seminar will look at 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.
(3-0-1.5)

IDX 536
Extensions of Media & Technology
This seminar is designed to engage 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.
(3-0-1.5)

IDX 538
Networked Cities
This course will explore the relationship between technologies – new media, urban screens, mobile and wireless technology, and ubiquitous computing – and cities and urban public spaces.
(0-3-3)

IDX 540
Networked Objects
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.”
(0-3-3)

IDX 542
Techniques in Design Analysis
Design analysis teaches you methods to analyze data you will likely encounter as part of a design project.
(3-0-1.5)

IDX 544
Techniques in Design Synthesis
This class covers the activities involved in determining what something should be. This process moves beyond the traditional end state of most analysis processes (making high level recommendations) and suggests clear, concrete solutions.
(3-0-1.5)

IDX 546
Intellectual Property in Design
This course introduces the principles and methods for securing intellectual property rights. Topics covered include utility and design patents, trademark, copyright, and trade dress.
(3-0-1.5)

IDX 548
Innovation Methods
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.

IDX 550
Building & Understanding Context
This course will improve critical thinking skills when wrestling with the wide variety of input and insight that often accompanies design initiatives. The course will include basic overviews of argumentation, secondary research, and group-based discussion methods.
(0-3-3)

IDX 552
Managing Interdisciplinary Teams
This class 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 (such as schedules, budgets, emails, and meetings) can be informed by design thinking to be more effective for teams composed of multiple disciplines.
(0-3-3)

IDX 594
Faculty Research
Classes, workshops, and seminars revolving around faculty specific research. Instructor permit only. Instructor will define requirements for enrollment. Students may take this class multiple times for a maximum of 24 credits toward their degree.
(Credit: Variable)

IDX 595
Internship
Supervision of participation in curricular practical training (CPT).
(0-0-0)

IDX 597
Special Topics
Classes that cover special and contemporary topics in design. Students may take this class multiple times for a total of 24 credits toward their degree.
(Credit: Variable)