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Course Description

Designers use many research methods established by other disciplines, adapt even more, and develop their own for research within the creative process of human centered design. This course will present an opportunity to explore several of the research methods currently employed by the design professions, to understand the basis of these methods, and to gain first-hand experience through direct application of methods within a design project. In addition to the practical considerations for carrying out research in education and professional design practice, the course will provide a context of themes by which research may be understood, including quantitative and qualitative, objective and subjective, structured and unstructured, fixed and flexible.

This course has an explicit integration with the graduate Design Studio 51-712, such that methods are introduced "just-in-time" for hands-on experience in developing the Studio project. The presentation of methods will follow a sequence of Exploratory, Generative, and Evaluative research, coinciding with the Studio project stages of Discovery and Exploration, Concept Generation, and Refinement and Evaluation. Specific methods presented throughout the course will include ethnographic and observational studies for user and product research, contextual inquiry, archival research, surveys, interviews and questionnaires, participatory techniques and creative co-design for concept generation, prototyping and testing, basic statistics, and the role of visual communication within the design research process, collected, analyzed, and expressed through drawing, collage, modeling, photography, and diagrams. The emphasis is on gathering information from people throughout the creative process, rather than isolating research as a separate activity from design.

Although the course is linked to the Studio project, material will be sufficiently broad to imply other concurrent and future applications. The course should equip students with the necessary tools to determine appropriate methods for specific design research needs, how to find supporting resources, and when to seek help. In addition, an understanding of design research methods will be an invaluable tool in the ability to critically evaluate existing research.

Audience

This course is a required course for all first year MDES and MPS students in the School of Design, offered in the spring semester. For MDES students, this timing coincides with preparation for summer internships and the forthcoming thesis year. Others may request enrollment in the course but must either enroll concurrently in Design Studio 51-712, or have a parallel project of appropriate scope and timing for methods application.

Format and Organization

This class meets for two sessions of 80 minutes each week, and the instructor will participate in at least one session of Studio II each week. The instructor conducts the sessions on Tuesdays and the format will include lecture, discussion, case studies, and presentations by faculty, guests, and students.

The Teaching Assistant will lead class sessions on Thursdays. The format will be "recitations" designed to help guide students through the process of understanding methods for appropriate selection and application in their projects, using a combination of hands-on workshop exercises and meetings with teams.

LEARNING OBJECTIVES AND EVALUATION
Objectives of this course are that you will be able to:
- Demonstrate knowledge of research methods available to designers
- Determine appropriate methods for specific design research needs
- Plan and apply research methods within the design process
- Synthesize and analyze research for design insight and application
- Critically evaluate existing research

Grades will be determined by evidence of course material integrated into the studio project (70%), participation in class (20%), and occasional short assignments (10%). In most cases your grade for Research Methods and Studio II will be equated. For students not enrolled in Studio II, assessments will be based on evidence of course material applied to a parallel project, with deliverables required on a similar schedule to the Studio II project.

REFERENCES

Required Text:
Hanington, Bruce & Martin, Bella. *Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions*. Beverly, MA: Rockport Publishers, 2012.

Recommended:
Goodwin, Kim. *Designing for the Digital Age: How to Create Human-Centered Products and Services*. Indianapolis, IN: Wiley, 2009.

Hackos, JoAnn T & Redish, Janice C. *User and Task Analysis for Interface Design*. NY: John Wiley & Sons, 1998.

Hall, Erika. *Just Enough Research*. New York: A Book Apart, 2013.

IDEO Method Cards, 2003. Also available as an iPhone app.

Koskinen, I., Zimmerman, J. et al. *Design Research Through Practice From the Lab, Field, and Showroom*. Elsevier / Morgan Kaufmann, 2011.

Kuniavsky, Mike. *Observing the User Experience: A Practitioner's Guide to User Research*. San Francisco: Elsevier / Morgan Kaufmann, 2012.

Laurel, Brenda. *Design Research: Methods and Perspectives*. Cambridge, MA: MIT Press, 2003.

Nippert-Eng, Christena. *Watching Closely: A Guide to Ethnographic Observation*. New York: Oxford University Press, 2015.

References – Continued

Robson, Colin. *Real World Research: A Resource for Users of Social Research Methods in Applied Settings*, 3rd edition. Wiley, 2011.

Sommer, Robert & Sommer, Barbara. *A Practical Guide to Behavioral Research: Tools and Techniques,* 5th edition. NY: Oxford, 2001.

Sanders, Liz & Stappers, Pieter Jan. *Convivial Toolbox: Generative Research for the Front End of Design*. Amsterdam: BIS Publishers, 2013.

Zeisel, John. *Inquiry by Design: Environment / Behavior / Neuroscience in Architecture, Interiors, Landscape, and Planning*. NY: Norton, 2006.

Overview of Topics

Stages correspond to Studio 51-712 project

Stage 1 Definition

Methods overview: inventories and frameworks
Territory Maps and Stakeholder Maps

Stage 2 Discovery and Exploration

Exploratory research methods
User and product studies
Design ethnography
Interviews, questionnaires and surveys
Diaries and photo journals
Observation and documentation
Unobtrusive and trace measures
Contextual inquiry
Cultural probes and inventories
Simulation and role-playing
Literature reviews
Design implications and inspiration
Design research and ethics

Stage 3 Concept generation

Generative research methods
Personas and scenarios
Participatory and collaborative design
Projective techniques: expressive exercises
Constructive techniques: concept generation
Creative toolkits
Collages, diagrams and mapping
Velcro modeling
Content analysis

Stage 4 Refinement and evaluation

Evaluative research methods
Gauging human-product interactions
Paper and product prototyping
Product and interface testing
Thinkaloud protocol
Heuristic evaluation
Structured observation
Laboratory and field tests
The experimental model
Descriptive statistics and graphing

Stage 5 Reflection and communication

Summarizing research
Reporting and presenting