

RESEARCH METHODS FOR DESIGN

Design 51-744 | Spring 2018 | Tuesday/Thursday 10:00-11:20 am + Studio II MW 1:30-4:20 pm | MM215

INSTRUCTOR

Bruce Hanington

MM 201

268-1641

hanington@cmu.edu

TEACHING ASSISTANT

Manya Krishnaswamy

MM 216

manyak@andrew.cmu.edu

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 II course 51-712, such that methods are introduced “just-in-time” for hands-on experience in developing the Studio II project. Following a brief stage of Definition, the presentation of methods will follow a sequence of Exploratory, Generative, and Evaluative research, coinciding with the Studio II 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, synthesis and analysis techniques, 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 II 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, the 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 II 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.

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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.

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.

In addition to the required text, a number of other recommended books, articles, and online resources are outlined at:

designresearchmethods.com

You are encouraged to make frequent use of this site for additional information and references to support methods investigations.

PLAGIARISM

The University and the School of Design regard plagiarism as a serious academic offense. Depending on the content and context of the offense, and at the recommendation of the course instructor, the penalty shall be either failure of the assignment or failure of the course. There's more information online at:

www.cmu.edu/policies/documents/Cheating.html.

Here's the gist of what it says: Plagiarism includes but is not limited to, failure to indicate the source with quotation marks or footnotes where appropriate if any of the following are reproduced in the work submitted by a student: 1. a phrase, written or musical; 2. a graphic element; 3. a proof; 4. specific language; 5. an idea derived from the work, published or unpublished, of another person.

Note that plagiarism does not only refer to copying portions of written text, but also includes copying designs and other visuals such as photographs without proper attribution. While less obvious than written plagiarism, design plagiarism is often characterized as copying both the design (type, color, composition, image style, etc.) and the concept/communication goal of a project. With design examples easy to find online, it is important to use what you find as references and not copy them directly.

TAKING CARE OF YOURSELF

Take care of yourself this semester. Do your best to maintain a healthy lifestyle by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit their website at <http://www.cmu.edu/counseling/>. Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.

If you or someone you know is feeling suicidal or in danger of self-harm, call someone immediately, day or night:

CaPS: 412-268-2922

Re:solve Crisis Network: 888-796-8226

If the situation is life threatening, call the police:

On campus: CMU Police: 412-268-2323

Off campus: 911

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
Participatory and collaborative design
Projective techniques: expressive exercises
Constructive techniques: concept generation
Creative toolkits
Collages, diagrams and mapping
Velcro modeling
Content analysis
Personas and scenarios
Lo-fidelity and experience prototyping

Stage 4 Refinement and evaluation

Evaluative research methods
Gauging human-product interactions
Mid-hi fidelity prototyping
Usability testing
Think-aloud protocol
Heuristic evaluation
Structured observation
Laboratory and field tests
The experimental model

Stage 5 Reflection and communication

Summarizing research
Reporting, presenting, and reflecting