Course Outline

Instructor
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Office hours
Office hours are by appointments. Please email me in advance.

Course time and Location
Thurs. 11:35 am - 2:25 pm
University Centre 374

Course Description
Critical analysis of research methods in design and disciplines contributing to design including anthropology, psychology, sociology, and business. Application areas include advanced materials and manufacturing processes, advanced visualization, product interaction design, extreme environments, sustainable design, design and culture, design management, and human-oriented design.

Course Objectives
This course is about the comprehensive understanding of research methods for design researchers and practitioners. Particularly, it focuses on reducing the gap between a research and a design practice so that researchers and designers could work closely together to develop reasonably innovative design solutions. During the semester, students will learn how to conduct strategic design research through collecting relevant data, analyzing the data to identify insights, synthesizing the insights to generate creative and compelling design ideas, and evaluating alternatives to narrow down an optimal solution in a collaborative team situation.

Learning Outcomes
By the end of this course, students will be able to:
1. understand systematic design process in relation to design strategy.
2. conduct both qualitative and quantitative research methods.
3. conduct desktop research for the rigorous literature review.
4. employ appropriate methods and tools to collect and analyze data to identify user insights.
5. manage group ideation process in the context of interdisciplinary collaboration.
6. employ assessment tools to evaluate alternative solutions.
7. develop a proposal to comprehensively report the research outcomes.

Course Format
This course consists of lectures, in-class exercises, and discussions. In the lectures, the principle of design research and the number of research methods are introduced with examples. For the in-class exercise, team work and group discussion are expected inside and outside of the class. Active participation in the discussions is highly recommended and attendance in all classes is required.

Books to read


Grading

<table>
<thead>
<tr>
<th>Critical review paper</th>
<th>05%</th>
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<tbody>
<tr>
<td>Three types of design research</td>
<td>05%</td>
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<tr>
<td>Life history interview</td>
<td>10%</td>
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<tr>
<td>User position map &amp; persona</td>
<td>15%</td>
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<tr>
<td>Experience map &amp; customer journey map</td>
<td>15%</td>
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<tr>
<td>Random Ideation (5%) + Mandal art (5%)</td>
<td>10%</td>
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<tr>
<td>Term project (Teamwork)</td>
<td>40%</td>
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Total 100%

Course Schedule

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<thead>
<tr>
<th>Weeks</th>
<th>Topics</th>
<th>Homework</th>
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<tbody>
<tr>
<td>Wk1.</td>
<td>Introduction to the course, Design and design research Design as a system</td>
<td>Critical review of 2 papers (5%)</td>
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<tr>
<td>Wk2.</td>
<td>Design activity and process D. research for predicting future Types of design research</td>
<td>Find examples of the three types of design research (5%)</td>
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<tr>
<td>Wk3.</td>
<td>Data gathering (Discover) Quantitative research Qualitative research</td>
<td>Life history interview (10%)</td>
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<td>Wk4.</td>
<td>Data analysis 1 (Define) Positioning map &amp; persona Experience map &amp; customer journey map</td>
<td>User position map &amp; persona (15%)</td>
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<td>Wk5.</td>
<td>No class</td>
<td>Experience map + customer journey map (15%)</td>
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<tr>
<td>Wk6.</td>
<td>Data analysis 2 (Define) Insight matrix Presentation (Position maps &amp; persona)</td>
<td>Life history interview due</td>
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<td>Wk7.</td>
<td>Creativity and design innovation Announce Term Project</td>
<td>Experience map &amp; customer journey map due</td>
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<td>Wk8.</td>
<td>Fall Break</td>
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<td>Wk9.</td>
<td>Presentation of research ethic by Research Ethics office (1 ½ hour) Review the Ethic application form</td>
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<td>Wk10.</td>
<td>Synthesis (Develop) Group ideation methods</td>
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<td>Wk11.</td>
<td>Group Ideation Workshop (Lateral thinking + vertical thinking)</td>
<td>Random Ideation(5%) in class Mandal art(5%) for homework</td>
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<tr>
<td>Wk12.</td>
<td>Evaluation Decision map, heuristic evaluation, Mock-up, Film making, desktop walk through, service staging</td>
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<td>Wk13.</td>
<td>Team collaboration in Design</td>
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<td>Wk14.</td>
<td>Final presentation</td>
<td>Presentation (20%), Report (20%)</td>
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<td>Wk15.</td>
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• Individual/Group Work
Courses may include various combinations of individual and group work. Students must demonstrate individual aptitude. It is important where collaborative work is undertaken that students be able to clearly demonstrate that individual contribution has been made. Where the evaluation for individual work is below a passing grade, that grade will be awarded for the course.

• Review Attendance
Attendance at scheduled SID reviews is mandatory. These are equivalent to exams in IDES courses when indicated in the course outline. Failure to attend will result in a grade of F. If you are not able to attend a review, you are required to call the General Office (613-520-5672) and/or send an email to id@carleton.ca to leave a message in advance. A comprehensive medical certificate or other documentation to substantiate the absence must be submitted as soon as possible after the review. The documentation must state the date of illness onset, the expected date of recovery, and the extent to which the student is incapacitated. The student is also required to set up a meeting with the instructor as soon as he or she is well enough to discuss and schedule an alternative date.

Any student in the review should submit materials for presentation and present as scheduled. In addition, a student who does not remain for the complete review session, who does not present as scheduled, or who arrives late for the review, without approval from the instructor, will receive a 10% grade reduction for that review.

• Late Submission of Deliverables
Course Deliverables for reviews and other due dates
All deliverables submitted late will accrue a 10% per day deduction from the determined grade, to a maximum of 3 days, from the original deadline time and date. Failure to submit within 3 days, without approval from the instructor, will result in a grade of F.

• Participation and Professionalism (use ONLY if those being evaluated)
Active participation and professional conduct are particularly important in studio courses and will be evaluated. At the same time, when the student’s work is reviewed at the end of the course, an evaluation will be made based on one or more of the following: in class discussion; consultations with instructors; and work ethic. However, none of these evaluations will be used to raise an overall failing grade, to a passing one, based on the quality of the work.

• Student Access to Quiz, Test, and Exam Papers
Examinations are for evaluation purposes only and will not be returned to the student.

STUDENT CONSIDERATIONS AND RESPONSIBILITIES
• Academic Accommodation (Equity Services)
You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:
Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit: http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf
Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit: http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting
accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (if applicable).

• **Instructional Offenses / Plagiarism**
The regulations of the university require that we bring to your attention regulations on Instructional Offenses, descriptions of which can be found in the current Academic Integrity Policy available on the Student Affairs website. The policy governs the academic behavior of students. At the same time it seems that students do not always understand the meaning of plagiarism and how to avoid it. In industrial design, ideas and concepts come from a multitude of sources to be modified and utilized in the design and development process. The student should reference sources appropriately.

• **Student Responsibility (studio courses)**
The student is responsible for knowing the content of this course outline, the schedule of classes, assignments, and reviews; and material covered during any absence from scheduled classes. Unless otherwise arranged, the class will meet during regularly scheduled studio hours. These meetings are mandatory; important issues and questions will be raised, and announcements might be made. Everyone is expected to be based in studio and to work during scheduled hours. The studio should be considered a professional design studio environment. Because of the special involvement of external professionals, scheduling changes for guest lectures, presentations, and reviews may occur at short notice; students should stay informed regularly.

• **Changes to the Course Outline**
The course outline may be subject to change in the event of extenuating circumstances.