CARLETON UNIVERSITY
SCHOOL OF INDUSTRIAL DESIGN

COURSE OUTLINE IDES 3310A+B • PROJECTS IIIA • FALL(2021) version 2021.08.31

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Office Hours: During studio hours or by appointment

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Office Hours: During studio hours or by appointment

Time and Location: In class at Carleton University, Azreili Pavillion. Please refer to Carleton Central under Student Services – Registration – Search Schedule: https://central.carleton.ca/prod/bwysched.p_select_term?wsea_code=EXT

Note: Components of class lectures and activities may be recorded to support the distributed nature of the class participants and to allow a-synchronous review.

Course Description

Introduction to the design principles associated with the evaluation and re-design of an existing product. Topics include: user/machine relationship, component packaging, and manufacturability. The design project(s) explore some or all of the design principles covered in the lectures. Includes: Experiential Learning Activity. Precludes additional credit for IDES 3300 (no longer offered). Prerequisite(s): IDES 2302 or permission of the School of Industrial Design. Studio and lectures twelve hours a week.

Learning Outcomes

By the end of this course, students will be able to:

1. Use a systematic design process in a comprehensive design project, utilizing multiple design phases with specific deliverables.
2. Apply product analysis methods to identify product shortcomings and design opportunities.
3. Incorporate design principles and relevant theory from previous design courses.

4. Apply industrial design sketching techniques and methods to demonstrate breadth of ideation, and refining concepts through iterations that are appropriately presented.
5. Create physical prototypes at different levels of fidelity to explore, test and verify design solutions.
6. Apply digital design software in the design process, with emphasis on testing alternative ideas through professional rendering, and technical drawings to communicate the final design intent.
7. Produce a concise a project report illustrating the design consideration and phases, and summarization of the work completed.
8. Communicate progress to peers and advisors through in class presentations.
9. Demonstrate professional behavior as an industrial designer.
10. Exhibit the ability to receive and respond to peer and instructor evaluation.

Course Deliverables

These are the deliverables for this course:

1. Warm Up Project 1

   In class project presented in the first day studio and will be reviewed in-class the following week. Project is a desk-top design project to develop a solution for a human centered design problem.

2. Studio Project

   A compressive design project is to redesign and existing product within a particular product category, focussing on incremental innovation in a specific market segment. Five (approx.) distinctive products will be presented to which students will be broken into groups of four to five individuals to review and analyse the basic function and purpose of the product. Each student will then develop a user centred innovative design, significantly altering the product form for a particular target market. The project will be divided into three distinctive phases in a defined timeline with associated deliverables. This is a major portfolio project; all work should be documented electronically.

3. Attendance, Participation and Individual Development

   Discretionary grade based on the instructors informed opinion of the students' performance in class. It is a reflection of the instructor's experience and ability to judge the student's soft skills that may not be captured in deliverables, but rather through their behaviour in class.

Please see Appendix A for Timeline Chart & Appendix B Deliverable Information.

Grading Document:

The final grade for the course will be based:

1.	Warm up Project (P1)	5%
2.	Major Project (P2)	
	a. Research / Concept	20%
	b. Definitive Design	20%
	c. Final Design	50%
3.	Studio Performance	5%
		Total 100%

Readings (*recommended readings include, but not limited to)*

Baskinger, M. and Bradel, B. Drawing Ideas. Watson-Guptill Publications, 2013.

Crouch, C and Pearce, J. Doing Research in Design. London: Berg,2012

Eissen, K. and Steur, R. Drawing Techniques for Product Designers. BIS Publishers, 2007.

Hallgrimson, B. Prototyping and Model Making for Product Designers. Laurence King Publishing Ltd., 2012

Henry, K. Drawing For Product Designers. Laurence King Publishing Ltd., 2012

Rodgers, P. and Milton, A. Product Design. Laurence King Publishing Ltd., 2011

Milton, A. and Rodgers, P. Research Methods for Product Design. Laurence King Publishing Ltd., 2013

Terstiege, G. The Making of Design, Basel; Boston: Birkhauser, 2009

Required Materials

Utilize the tools that you have purchased for previous years studios. Over time you have discovered mediums that you feel work for you. You must have the most relevant subset of these for every studio session.

Visit http: //www.idsketching.com/thesketchlab/materials-guide/ as a reminder of some the sketch materials designers' use.

Materials suggested and not limited to:

- One pack of HP Bright White Ink Jet paper or Similar 8 ½ x 11"
- Roll of masking/drafting tape (25mm)
- Various Nylon Tipped or Roller Ball Pens - investigate different pens, you will get a feel for what you like, When it comes to pens purchase Black , My personal favorite ball point for drawing is the BIC Crystal , medium point.

- Verithin and Drawing Pencils – Color selection – Non-Repro Blue, Indigo Blue, and /or Black,
- Designer Markers – gray scale and preferred accent colours
- Segmented Knife – Olfa like, and replacement blades required (a pack of 50 is recommended)
- Cork back steel ruler - 14" +
- Cutting Board – Small 30cm x 45cm for use in studio
- Hot Glue Gun and Glue Sticks…. (Small craft glue guns are not sufficient)
- Engineer Square or equivalent
- 100 and 220 Grit Wet Dry Sand Paper with a Sanding Block
- One set of Safety Goggles/Glasses,
- Dust masks, they can be purchased at SID shops.

Computer Requirements

Bring your laptop to class. Please refer to the computer requirements on the School of Industrial Design Website. You may be asked by your instructor to refer to other information or requirements related to computer work. http://www.id.carleton.ca/undergraduate/about-the-bid-program/computer-requirements

Software:

Software that should be installed on laptop:

Adobe Suite - Photoshop, Illustrator, InDesign (Schools of Industrial Design versions).

SolidWorks and KeyShot (School of Industrial Design versions).

A scan app for your phone to allow easy capture and upload in-progress work to Miro.

Individual/Group Work

Courses may include individual and group work. It is important in collaborative work that students clearly demonstrate their individual contribution.

Review/Presentation Attendance

Attendance at scheduled SID Reviews/Presentations is mandatory. These are equivalent to exams when indicated in the course outline. Failure to attend the Review/Presentation without reasonable cause, will result in a grade of F. Students arriving late for the Review/Presentation or not remaining for the complete session without approval from the instructor, will be addressed on a case-by-case basis at the discretion of the instructor.

If you are not able to attend a Review/Presentation, foresee arriving late or need to leave before it is complete, please email your instructor in advance explaining the reason for the situation. It is important

that you provide a reasonable rationale for your absence, late arrival or early departure. In the event of an illness or death in the family, you will be required to sign a form verifying your claim and this form is available through the SID administration office.

Late Submission of Lecture & Studio Deliverables

Students who do not hand in deliverables on time will have their earned grade reduced by 10% per day up to a maximum of 3 days.

Participation and Professionalism

Active participation and professional conduct (e.g. class discussion, consultations with instructors, work ethic, etc.) are important in lecture and studio courses and may be formally evaluated by a grade. Professionalism also includes Carleton's Policy on Academic Integrity described in more detail below with links to content which you are required to review.

Academic Integrity

Carleton's Policy on Academic Integrity is available at: https://carleton.ca/registrar/academic-integrity/ and covers the following topics:

*Plagiarism (*e.g. submitting work in whole or in part by someone else, failing to acknowledge sources through the use of proper citations when using another's work).

Test and Exam Rules **(**e.g. attempting to read another student's exam paper, speaking to another student even if the subject matter is irrelevant to the text, using material not authorized by the examiner).

Other Violations (e.g. improper access to confidential information, disruption in classroom activities, misrepresentation of facts for any academic purpose).

This policy governs the academic behavior of students. In industrial design, ideas and concepts come from a multitude of sources and may be modified and utilized in the design and development process. The student should reference such sources appropriately and it is strongly advised that you read Carleton's Policy on Academic Integrity prior to conducting any work at the University.

Requests for Academic Accommodation

You may require special arrangements to meet your academic obligations during the term. For an accommodation request for any of the following topics below, refer to the link provided for more information: https://students.carleton.ca/course-outline/

- *Parental Leave*
- *Religious/Spiritual Obligation*
- *Academic Accommodations for Students with Disabilities*
- *Survivors of Sexual Violence*
- *Accommodations for Student Activities*

Student Responsibility

The student is responsible for knowing the content of this course outline; the schedule of classes, assignments, and/or Reviews; and the material that was covered when absent. The studio is a professional environment and students should be working during the scheduled hours.

Unless otherwise arranged, the class will meet during scheduled class hours. Please note that attendance is important since issues and questions may be raised in class, and announcements made, along with information disseminated through Brightspace. As external professionals are often involved in our work, scheduling changes for guest lectures, presentations, and Reviews may occur at short notice, requiring students to stay informed.

Changes to the Course Outline

The course outline may be subject to change in the event of extenuating circumstances.

Appendix material may be adjusted for in-progress improvements.

Appendix A - Course Schedule

Date A/B	Focus of in-class activities	Deliverables
Class 1 Sept. 14/15	• Introduce Project 1 (P1): User interface modeling (a 1 week project) • Studio Lecture / Discussion	• none
Class 2 Sept. 21/22	• Studio Lecture / Discussion • Introduce Project 2 (P2) ○ Selection of product focus • Form groups and develop Design Brief	• **DELIVERABLE:** PRESENTATION (P1) with Boards and Model(s)
Class 3 Sept. 28/29	• Studio Lecture / Discussion • In Class development	• none
Class 4 Oct. 05/06	• Class Lecture / Discussion • Project development	• none
Class 5 Oct. 12/13	• Review of major deliverable	• **DELIVERABLE:** PRESENTATION: RESEARCH AND CONCEPT (P1) • Group w. Individual Project Direction • Documentation (pdf) and Slide Presentation
Class 6 Oct. 19/20	• Class Lecture / Discussion • Project development (prepare for testing)	• none
Oct. 27	FALL BREAK	FALL BREAK
Class 7 Nov. 02/03	• Testing Session	• **TESTING:** Bring mock-ups and prototypes for user testing at studio
Class 8 Nov. 09/10	• In Class development / shops	• **UPLOAD DELIVERABLE:** TESTING Video and/or Photos of physical and ethnographic prototype use + learnings.
Class 9 Nov. 16/17	• Review of major deliverable	• **DELIVERABLE:** PRESENTATION (P1) DEFINITIVE DESIGN
Class 10 Nov. 23/24	• Class Lecture / Discussion • In Class development / shops	• none
Class 11 Nov.30/Dec.01	• Class Lecture / Discussion • In Class development / shops	• none
Class 12 Dec. 07/08	• Review of major deliverable	• **DELIVERABLE:** PRESENATION: FINAL REVIEW (P1)
[Dec. 17]	• *[optional: Global Innovation Awards (gia) Excellence in Student Design]*	• *[optional: ENTRY DEADLINE – Dec17]*
Exam Period Dec. 23	• none	• **DELIVERABLE:** FINAL PROCESS BOOK (P1) delivered via upload.

Appendix B – Deliverables

WARM UP

Get the Cobwebs Out: In-class project, digital presented the following week Requirements - Table top modeling and digital presentations	5%

MAJOR PROJECT

Project Category Section: Each student will develop their own Design Brief based on the product category chosen and specific market segment.	
Research & Concept: Apply a systematic investigation into existing products within the chosen category. Do product analysis identifying product shortcomings and opportunities. Concept development must show process, alternative solutions and breath of ideation through models sketches, videos, etc.. Assessment - Thoroughness of research, analysis/synthesis, problem opportunity. Concepts demonstrate depth of ideation, user centered approach, completeness and quality of all work presented.	20%
Testing Session: Testing Zoom Session . Use of low fidelity modeling to investigate the different aspects of your design. Safety guidelines will be followed, any works like modes must be presented to instructor prior to testing. Documentation can be through photo's, videos, and sketching user experience to develop an narrative.	
Definitive Design: Identify through narrative the user experience and testing results. Works like models presented. Feasibility demonstrated by mock-ups, technical drawings, computer models, investigative sketching and explanatory sketching with annotations. Assessment - Using a digital slide presentation on Zoom, prototype models will be presented, in an organized manner. Student will show clarity of innovation, usability,investigations, functionality, materials and processes, and form development	20%
Final Design: Formal presentation exhibiting a finalized design that is completely defined in terms of appearance, function, and manufacturing detail. All relevant materials presented in an organized coordinated well designed format. Worked presented: Final looks like model, process and testing materials, final working/technical drawings, digital slide presentation, digital persuasive illustrations, narrative of user experience and process document summarizing the work completed Assessment - Student must show clarity of planning and process, detail form, function and manufacturing resolution, final appearance model quality and workmanship technical completeness.	50%

STUDIO PERFORMANCE

Demonstrate: Active participation and professional conduct (e.g. class discussion, consultations with instructors, work ethic, etc.)	5%
	100%