

**COURSE OUTLINE IDES 3310A • PROJECTS IIIA • Fall (2023)**

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Location: **2498 ME**

Office Hours: by appointment

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Office Hours: by appointment

**Course Time and Location:**

Course locations are no longer displayed on the public class schedule and are subject to change. For the latest information please refer to Carleton Central under Student Services – Registration – Student Timetable.

**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 the 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. Create documentation that illustrates the design process and execution.
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. Please see 'Appendix A Course Schedule' for more detailed information.

### ***Warm-up Project***

**5%**

A one-week project introduced in the first day of studio and reviewed the following week. This is a desktop design project to get warmed up with human-centered problem-solving and rapid sketching, modeling, and presenting.

*Deliverables: Presentation Boards & Design Model*

### ***Major Project***

**90%**

A compressive design project to redesign an existing product within a particular product category, focusing on incremental innovation in a specific market segment. Five or six distinctive products will be presented to which students will be broken into groups of four to five individuals to study and analyze the basic function and purpose of the product. Each student will then develop a user-centered innovative design, significantly altering the product form for a particular target market. The

project will be divided into four distinctive phases in a defined timeline with associated deliverables. This is a major portfolio project – all work should be documented electronically.

Phase 1: Research & Concept Development 20%

*Deliverables: Design Brief, Group Research Presentation & Concept Presentation*

Phase 2: Prototyping & Testing 20%

*Deliverables: Prototype Testing Presentation & Video*

Phase 3: Final Design 35%

*Deliverables: Final Design Presentation & Design Model*

Phase 4: Final Documentation 15%

*Deliverables: GA Drawings & Process Book*

**Participation & Professionalism 5%**

A discretionary grade based on the student's observed performance and conduct in class. It is a reflection of the student's soft skills that may not be captured in deliverables, but rather through their actions and behaviors. Attendance and communication play a major role in this evaluation.

### **Student Access to Quiz, Test and Exam Papers**

Examinations are for evaluation purposes only and will not be returned to the student.

### **Required Materials**

Materials required for the course are listed below. You may be asked by your instructor to refer to Brightspace for a more comprehensive list of required materials.

#### **Books:**

The following books are not required, but will be useful references to support your work throughout the semester (some are available online through Ares library reserves, accessible from Brightspace):

Baskinger, M. & Bardel, W. (2013). *Drawing ideas: A hand-drawn approach for better design*. Watson-Guptill Publications.

Hallgrimsson, B. (2019). *Prototyping and modelmaking for product design* (Second edition). Laurence King Publishing.

Henry, K. (2012). *Drawing for product designers*. Laurence King Publishing.

Martin, B. & Hanington, B. (2019). *Universal methods of design (expanded and revised): 125 ways to research complex problems, develop innovative ideas, and design effective solutions*. Rockport Publishers.

Milton, A. & Rodgers, P. (2013). *Research methods for product design*. Laurence King Publishing.

Rodgers, P. & Milton, A. (2011). *Product design*. Laurence King Publishing.

Terstiege, G. (Ed.). (2009). *The making of design: From the first model to the final product*. Walter de Gruyter GmbH.

Weinschenk, S. (2020). *100 Things Every Designer Needs to Know About People* (Second edition). New Riders.

### **Tools & Mediums:**

Utilize the tools that you have accumulated from previous years' studio courses. Over time, you have discovered mediums that you feel work for you. You must have the most relevant subset of these mediums with you for every studio session.

The following tools and mediums are some suggestions:

- One pack of 8 ½ x 11", 18lb bright white ink jet paper or similar
- Roll of masking/drafting tape (25mm)
- Various nylon-tipped, rollerball, and/or ball-point pens (e.g., black BIC Crystal, medium point)
- Colored drawing pencils (e.g., Verithin non-repro blue, indigo blue, and/or black)
- Designer markers (gray scale and preferred accent colors)
- Cork-back steel ruler (14" minimum)
- Self-healing cutting mat (12" x 18" minimum)
- Segmented utility knife and replacement blades (a pack of 50 is recommended)
- 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 and a sanding block
- Safety goggles/glasses
- Dust masks (can be purchased at SID shops)

### ***Computer Software:***

The latest versions of the following software (provided by the School of Industrial Design) must be installed on your personal laptop computer:

- SolidWorks
- KeyShot
- Illustrator
- Photoshop
- InDesign
- Premiere Pro

It is also recommended to have an image scanning application on your mobile device(s) to allow for quick and easy digital capture of in-progress analog work.

### ***Project Specific Materials:***

Other specific materials will be dependent upon each individual project. You must be prepared to purchase or acquire the appropriate materials necessary for you to complete your own unique design activities throughout the semester.

### **Computer Requirements**

Please refer to the computer requirements on the School of Industrial Design Website. You may be asked by your instructor to refer to Brightspace for other information or requirements related to computer work.

<http://www.id.carleton.ca/undergraduate/about-the-bid-program/computer-requirements>

### **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 that 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/>

- **Pregnancy obligation:** Please contact your instructor 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, please review the [Student Guide to Academic Accommodation \(PDF, 2.1 MB\)](#) For accommodation regarding a formally-scheduled final exam, you must complete the Pregnancy Accommodation Form ([click here](#)).
- **Religious/Spiritual Obligation:** Please contact your instructor 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, please review the [Student Guide to Academic Accommodation \(PDF, 2.1 MB\)](#)
- **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 documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. For more details, visit the [Paul Menton Centre website](#).
- **Survivors of Sexual Violence:** As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain

information about sexual violence and/or support, visit the [Equity and Inclusive Communities website](#).

- **Accommodations for Student Activities:** Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor 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, see the [Senate Policy on Accommodation for Student Activities \(PDF, 25KB\)](#).
- **The Use of Self-Declaration Forms:** In place of a doctor's note or medical certificate, students may complete the [self-declaration form](#) available on the Registrar's Office website to request academic accommodation for missed course work including tests and assignments. Students are also encouraged to connect directly with their instructors to discuss required accommodations arising from the COVID-19 situation.

### Statement on Student Mental Health

As a university student, you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you. Here is a list that may be helpful:

**Emergency Resources (on and off campus):** <https://carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

#### Carleton Resources:

- Mental Health and well-being: <https://carleton.ca/wellness/>
- Health & Counselling Services: <https://carleton.ca/health/>
- Paul Menton Centre: <https://carleton.ca/pmc/>
- Academic Advising Centre (AAC): <https://carleton.ca/academicadvising/>
- Centre for Student Academic Support (CSAS): <https://carleton.ca/csas/>
- Equity & Inclusivity Communities: <https://carleton.ca/equity/>

#### Off-Campus Resources:

- Distress Centre of Ottawa and Region: (613) 238-3311 or TEXT: 343-306-5550, <https://www.dcottawa.on.ca/>
- Mental Health Crisis Service: (613) 722-6914, 1-866-996-0991, <http://www.crisisline.ca/>
- Empower Me: 1-844-741-6389, <https://students.carleton.ca/services/empower-me-counselling-services/>
- Good2Talk: 1-866-925-5454, <https://good2talk.ca/>

- The Walk-In Counselling Clinic: <https://walkincounselling.com>

### **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 A - Course Schedule

Date	Topics / Activities	Deliverables
Week 1 Sep 12	Introductions & Course Overview Warm-up Project	
Week 2 Sep 19	<b>Warm-up Project Review</b> Major Project Overview Design Briefs & Product Research Overview Group Research & Ideation	Warm-up Project: Presentation Boards & Design Model <i>(pin-up by 9:45am)</i>
Week 3 Sep 26	Concept Development Overview Group Research, Ideation & Concept Development	
Week 4 Oct 3	Concept Development	Major Project: Phase 1 – Group Research Presentation & Design Brief <i>(submit on Brightspace by 11:59pm, Monday October 2)</i>
Week 5 Oct 10	<b>Major Project Review – Phase 1</b>	Major Project: Phase 1 – Concept Presentation <i>(submit on Brightspace by 11:59pm, Monday October 9)</i>
Week 6 Oct 17	Prototyping & Design Development Overview Prototyping	
Oct 24	Fall Break	
Week 7 Oct 31	<b>Testing Day</b> User Testing (with peers in studio)	Prototypes
Week 8 Nov 7	<b>Major Project Review – Phase 2</b>	Major Project: Phase 2 – Prototype Testing Presentation & Video <i>(submit on Brightspace by 11:59pm, Monday November 6)</i>
Week 9 Nov 14	Design Detailing & Communication Overview Detailed Design Development & Modeling	
Week 10 Nov 21	Detailed Design Development & Modeling	
Week 11 Nov 28	<b>Major Project Review – Phase 3</b>	Major Project: Phase 3 – Final Design Presentation & Design Model <i>(submit on Brightspace by 11:59pm, Monday November 27)</i>
Week 12 Dec 5	Documentation	Major Project: Phase 4 – GA Drawings & Process Book
Dec 15	<b>*OPTIONAL*</b> Global Innovation Awards (gia): Home & Housewares Student Design Competition	gia Application <i>(submit online at <a href="https://theinspiredhomeshow.com/sdc">theinspiredhomeshow.com/sdc</a>)</i>