CARLETON UNIVERSITY
SCHOOL OF INDUSTRIAL DESIGN

COURSE OUTLINE IDES 4310B • CAPSTONE PROJECT • Fall-Winter (2024/2025)

Instructor: Nathalie Tambay

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Location: **434 AP**

Office Hours: In class or by appointment.

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Office Hours: In class or 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

Application of design principles in a comprehensive design project. Problem area should be product-oriented and of sufficient complexity. Normally undertaken in consultation with off-campus organizations and/or industry. Supervised by faculty and/or sessional members.

Includes: Experiential Learning Activity.
Precludes additional credit for IDES 4300 (no longer offered).
Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.
Studio and lectures six hours a week in Fall and twelve hours a week in Winter.

Learning Outcomes

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

1. Apply research methods to define a unique design problem.
2. Bridge their research to the development of an appropriate design proposal.
3. Evaluate their proposed design solution with relevant stakeholders reflective of practitioner behaviour.
4. Demonstrate a basic understanding and need for ethics to develop and evaluate appropriate designs.
5. Use appropriate methods and materials to develop and assess design solutions.
6. Produce a range of appropriate professional deliverables at each phase as reflected in the fields of design.
7. Establish a good working relationship with external partners, which includes receiving and incorporating feedback from partner groups.

Course Deliverables

These are the deliverables for this course. Please see 'Appendix A Course Schedule' for more detailed information.

Fall Term – 40% of Final Grade

Phase 1: Discovery & Ideation	10%
TCPS 2: CORE-2022 Certificate User Research Plan Design Intent Review Presentation	
Phase 2: Concept Design	15%
Design Brief v.2.0 Review Presentation	
Phase 3: Preliminary Design	15%

Test Plan
Design Brief v.3.0
Review Presentation
Process Book (Draft)

Winter Term – 60% of Final Grade

Please 4: Definitive Design	15%
Review Presentation	
Phase 5: Final Design	15%
Review Presentation Technical Package (Draft)	
Phase 6: Final Documentation	25%
Design Poster Design Model Design Video Technical Package Process Book	
Participation & Professionalism (covers both terms)	5%

Student Access to Quiz, Test and Exam Papers

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

Required Materials

All Materials required for the course and their costs are listed below. Please note some materials costs are dependent on the project and the materials chosen so a range listing minimum and maximum values will be given.

All materials and equipment will be determined by each individual student project. You will be required to source and purchase necessary supplies throughout the year as needed. The range of costs for this course is $160 - $1000, determined by the requirements of each individual student project and accounting

for minimum of costs associated with Mandatory printed materials that will be used for the Grad Show and the Process Report booklet printing (~$120 poster + $40 booklet).

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 Assignments

Students who do not hand in assignments on time will have their earned grade reduced by 10% per day at the instructor's discretion. If you foresee not meeting the submission due date and are requesting an extension, please provide your instructor with a minimum of 24 hours' notice.

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.

Health and Safety

Students must participate in training to access all the SID Labs and Maker Space. Apart from this training, students are required to follow the health and safety standards of the School of Industrial Design as well as Carleton's health and safety standards. All materials related to SID health and safety are available here Health and Safety and it is expected that students review and understand these materials and apply these standards throughout their studies.

Use of Studio Spaces

Access to studio space to attend courses and complete assignments is an important part of student success. To support access, specific studios have been designated to certain years and/or sections.

1st Year Studio Section A – Studio A
1st Year Studio Section B – Studio B
2nd Year Studio Section A – Studio A
2nd Year Studio Section B – Studio B
3rd Year Studio Section A & B – Studio C
4th Year Studio All Sections (Capstone and Minor) – Studio D
MDes Studio – MDes Studio

Students are welcome and encouraged to use their designated spaces to work during non-studio hours. Out of respect for your colleagues, instructors, and Carleton cleaning staff, ensure you leave the space in good condition. This includes cleaning your area and storing your items in your designated storage space. The School will not be responsible for items that are not stored properly.

Academic Integrity

Carleton's Policy on Academic Integrity is available at: https://carleton.ca/registrar/academic-integrity/ and covers the following violations, but is not limited to:

- ***Plagiarism***
    - *Submitting work written 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*
    - *Attempting to read another student's exam paper*
    - *Speaking to another student (even if the subject matter is irrelevant to text)*
    - *Using material not authorized by the examiner*
- ***Other Violations***
    - *Improper access to confidential information such as exams or test questions*
    - *Disruption of classroom activities or periods of instruction*
    - *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 before conducting any work at the University.

Use of Artificial Intelligence (AI) Technologies

To effectively address the incorporation of AI technologies, specifically generative AI tools, into courses, we have instituted the following guidelines. Further information can be found here - https://carleton.ca/tls/teachingresources/generative-artificial-intelligence/recommendations-and-guidelines/. Another useful resource is the Library's guide on AI tools - https://library.carleton.ca/guides/subject/artificial-intelligence-ai-tools.

1. Academic Integrity Standards: In the absence of explicit permission from the instructor within a given course, the use of generative AI tools to create content, (e.g., text, code, images, summaries, videos, etc.), is deemed a breach of academic integrity standards.

2. Instructor's Discretion: Instructors have the authority to grant permission for the use of generative AI tools, (e.g., ChatGPT and similar tools), based on alignment with the course's educational objectives and learning outcomes. Assignment and examination guidelines will be written to explicitly reflect this granted permission.

3. Clear Instructions: Should instructors choose to permit the use of generative AI tools, an assessment guideline will provide students with clear and detailed direction, including;

    i. Identification of specific generative AI tools that are acceptable for use.
    ii. Clarity on the approved applications of these tools.

These measures aim to create a balanced and transparent educational environment, ensuring both academic integrity and the responsible integration of AI technologies into the learning experience.

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 below topics, refer to this link - https://students.carleton.ca/course-outline/ and open the needed section.

Topics:

- *Pregnancy Obligations*
- *Religious/Spiritual Obligation*
- *Academic Accommodations for Students with Disabilities*
- *Survivors of Sexual Violence*
- *Accommodations for Student Activities*
- *Academic Considerations for Medical and Other Extenuating Circumstances*
- *Scheduling and Examination Support*

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, refer to this link - https://wellness.carleton.ca/ and open the needed section.

Topics:

- *Counselling*
- *Resource Guide*
    - *Thriving on Campus*
    - *Everyday Stress*
    - *Mild Mental Health Concerns*
    - *Moderate Mental Health Concerns*
    - *Complex Mental Health Concerns*
- *Umbrella Project*

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.

Complex and comprehensive design projects are highly process-oriented, often developed through a series of phases culminating in a set of deliverables. During the fall semester, students will conduct exploratory research to build an understanding of people and context, and to identify problems and

opportunities for new design solutions. Concepts will be explored and developed through an iterative process in consultation with the instructor and industry partners and experts. With additional prototyping this will evolve to a preliminary design. In the winter semester, students will refine their design by testing and evaluating their ideas into a definitive design. A final design solution will be developed, and a compelling communication package will be created to share the results with an external audience. Below is a basic schedule to help guide the projects through these phases. It is important to note that design never really follows a straight path, and it is often difficult to constrain the process to a strict set of activities and timeline; but it is also important to have structure, and this schedule along with the identified deliverables provide the necessary support to complete the projects successfully.

Note 1: this course schedule is subject to change based on various factors including project needs, availability of project stakeholders, etc. such as moving the day to the Friday (this will happen Jan 31, 2025).

Note 2: Occasionally a completely independent guest speaker will be invited to spur, inspire, advise on this new theme offering. All are encouraged to attend as they will be scheduled during Studio sessions.

Note 3: We will have meetings with Advisor groups during September (ideally within studio time) that are not specifically indicated. A general goal will be to have available Advisors attend Major Presentations.

Appendix A - Course Schedule

Date	Focus of in-class activities	Deliverables
Discovery + Ideation		
Week 1 Sept. 05	**Introductions & Project Launch** • Course overview • Discovery & ideation overview • Ice Breaker – Introductions – Neocon July ‘24 • Design Process – as applied to Material-Led • Design-Led research • Research ethics	
Week 2 Sept. 12	**Problem Finding & Material Scoping** **Material Vignettes – for Inspiration** • User & product research overview • Progress meetings • Background research • User research planning	Material Vignettes – Session 1 Circular design and …

Week 3 Sept. 19	**Problem Finding** • Design briefs overview • Progress meetings • Background research • User research & idea-generation	***Deliverables:*** **TCPS-2 CORE-2022 certificate & User Research Plan**
Week 4 Sept. 26	**Business Brunch** **w Guest Catherine Landry** **Problem Framing / Material Research** • Design analysis & synthesis overview • User research & idea-generation • Progress and Preparation of deliverables	Open Discussion and business Talk with Local Marketing Expert
Week 5 Oct. 3	**Phase 1 Review** • Discovery & ideation presentations • Feedback & discussions • User research & concept development	***Deliverables:*** **Design Brief v.1.0 & Review Presentation**
Concept Design		
Week 6 Oct. 10	**Problem Solving** • Concept design overview • Concept Selection Rationale • Progress meetings • User research & concept development	
Week 7 Oct. 17	**Problem Solving** • Progress meetings • User research & concept development	
Break	**Fall Break**	
Week 8 Oct. 31	**Problem Solving** • Progress meetings • Concept sketches and material exploration • Concept Selection Rationale • Preparation of deliverables	
Week 9 Nov. 7	**Phase 2 Review** • Concept design presentations • Feedback & discussions • Concept refinement	***Deliverables:*** **Design Brief v.2.0 & Review Presentation**
Week 10 Nov. 14	**Prototyping** • Preliminary design overview • Progress meetings	

	• Concept refinement & prototype development	
Preliminary Design		
Week 11 Nov. 21	**Prototyping** • Progress meetings • Concept refinement & prototype development • Material samples sourcing / trade shows • Test planning	
Week 12 Nov. 28	**Prototyping** • Progress meetings • Concept refinement & prototype development • Test planning basic prototyping / materials • Preparation of deliverables	
Week 13 Dec. 05	**Phase 3 Review** • Preliminary design presentations • Feedback & discussions • Reflection & incubation	***Deliverables:*** **Design Brief v.3.0, Test Plan, Review Presentation & Process Book (draft)**
Break 23-27	**Exams & Holiday Break**	
Definitive Design		
Week 14 Jan. 9/10	**Testing** • Definitive design overview • Prototype testing & evaluation	
Week 15 Jan. 16/17	**Testing** • Progress meetings • Prototype testing & evaluation	
Week 16 Jan. 23/24	**Testing** • Progress meetings • Prototype testing & evaluation • Design revisions	
Week 17 Jan. 30	**Due – Review Presentation (Walk Around (Definitive Design + Supporting Materials)Testing** • Prototype testing & evaluation	
Jan. 31	• Progress meetings • Final Phases planning • Design revisions	***Christine Goudie:*** ***In-person Definitive Final Design Presentation***

Week 18a Feb. 06	**Review Preparation** • Preparation of deliverables	
Week 18b Feb. 07	**Phase 4 Review (Walk-Around)** • Definitive design presentations • Feedback & discussions • Detailed design development	***Deliverables:*** **Review Presentation**
Final Design		
Week 19 Feb. 13/14	**Detailed Design** • Final design overview • Progress meetings • Detailed design development	
Break 17-21	**Winter Break**	
Week 20 Feb. 27/28	Detailed Design • Progress meetings • Detailed design development	
Week 21 Mar. 06/07	**Detailed Design** • Progress meetings • Detailed design development	
Week 22a Mar. 13	**Review Preparation** • Preparation of deliverables	
Week 22b Mar. 14	**Phase 5 Review** • Final design presentations • Feedback & discussions • Final detailing & planning	***Deliverables:*** **Review Presentation & Technical Package (draft)**
Final Documents		
Week 23 Mar. 20/21	**Design Communication** • Final documentation overview • Progress meetings • Preparation of deliverables	
Week 24 Mar. 27/28	**Design Communication** • Progress meetings • Preparation of deliverables	***Deliverables:*** **DRAFT Poster (March 31)**
Week 25 Apr. 3/4	**Design Communication** • Progress meetings • Preparation of deliverables	

Week 26 Apr. 10	**Phase 5 Review** • Final documentation presentations • Feedback & discussions	***Deliverables:*** **Design Poster, Design Model, Design Video, Technical Package & Process Book**
Grad Show Apr. 26th	**47th Annual Industrial Design Graduation Exhibition**	