

COURSE OUTLINE IDES 3302B • PROJECTS IIIB • Winter (2023)

Instructor: Chiara Del Gaudio

ChiaraDelGaudio@cunet.carleton.ca

Location: **3472 Mackenzie**

Office Hours: During studio lecture hours or by appointment.

Teaching Assistant: First Name Last Name

YiLuo5@cmail.carleton.ca

Office Hours: During studio lecture hours or by appointment.

Course Time and Location: Please refer to Carleton Central under Student Services – Registration or Search Schedule: https://central.carleton.ca/prod/bwysched.p_select_term?wsea_code=EXT

Course Description

Introduction to the principles of innovation as found in industrial design. Invention, innovation, entrepreneurship, basic mechanisms. 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 3301 (no longer offered).

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Studio and lectures six hours a week.

Learning Outcomes

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

1. Generate creative and compelling design solutions through the meeting to the deliverables presented in a design brief.
2. Develop a final design solution that integrates a test protocol for quality assurance of a specific product requirement and a detailed assembly drawing with Bill of Materials.

3. Demonstrate an ability to develop prototypes to explore, prove and understand ergonomics, materials, and structures as a collective requirement.
4. Design and test a mechanism incorporating movement through sliding, hinging, or another relevant principle of movement.
5. Recognize the relationships between aesthetic, ergonomic, and usability to develop an industrial design solution.
6. Employ research synthesis tools used in IDES 3601, to identify latent user needs and contextual concerns.
7. Apply the given business and/or technological requirements presented by a third party to develop a product opportunity.
8. Demonstrate professional behavior.

Course Deliverables

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

Project

In this project, starting from an assigned open brief, students will design and prototype a system of products (including materials objects, and connecting/overarching processes and services) for addressing/contributing to a given situation and for a specific environment. This will require engagement with research for design, radical innovation, system thinking, ideation, synthesis, prototyping, concept development, and realization. Students will work in teams to design the system; then, individually, they will further develop one of the elements of the system. Each student will also design and develop in detail a component of their element through exploration of structural principles and mechanisms, and iterative modeling.

The focus will be on students' collaborative work, critical thinking, and overall quality and refinement of the final design.

As part of this project, students will participate and submit their designs to a competition that will be suggested by the instructor. On this, students will have to show the ability to meet the competition requirements in terms of addressing the brief, communicating the idea, and appropriate professional outcomes.

A detailed project description, including background, objectives, process, and evaluation criteria, can be found in Appendix B, which will be provided by the instructor in the first week of the term.

Evaluation Information

Evaluation will be based on the quality of the design outcomes and on the demonstration of the required design skills. The evaluation is distributed as follows:

- Mid-term evaluation: 30%
- Competition: 15%
- Final evaluation: 55%

Student Access to Quiz, Test and Exam Papers

Examinations will be returned to students with comments and explanations.

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.

Standard design studio tools to enable note-taking, design research, concept generation, sketching, design mock-ups, cad design development and their presentation (slides/boards).

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 contributions.

Attendance

Attendance during class time is required.

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 result in a grade of F.

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/>

- **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 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>

Statement on Pandemic Measures

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are [several actions you can take](#) to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you're sick, washing your hands and maintaining proper respiratory and cough etiquette.

Feeling sick? Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you should follow Carleton's [symptom-reporting protocols](#).

Masks: Masks are no longer mandatory in university buildings and facilities. However, we continue to recommend masking when indoors, particularly if physical distancing cannot be maintained. We are aware that personal preferences regarding optional mask use will vary greatly, and we ask that we all show consideration and care for each other during this transition.

Vaccines: While proof of vaccination is no longer required to access campus or participate in in-person Carleton activities, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible and submit their booster dose information in [cuScreen](#) as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 response and health and safety requirements please see the [University's COVID-19 website](#)

and review the [Frequently Asked Questions \(FAQs\)](#). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca.

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

Appendix B – Project Guidelines

appendix A - course schedule

week	date	phase	topics	studio activities	home assignments	deliverable
1	Jan. 10 *in the morning the class will happen at Rideau Hub	Research for Design.	Introduction to the course (content, structure, procedures, behaviour, expectations). Design process, contextual research and co-design for research. Introduction to the project and to the partner organization.	Brainstorming. Mind-mapping. Understanding of the given brief and initial brief definition. Design process planning. Contextual research.	Contextual Research. Field research design (interview questions, observation protocol, co-design research tools ideation).	
2	Jan. 17	Research for Design.	Counter-brief. Blue Skies research. Scenario building.	Field Research (data collection). Research synthesis (data analysis and counter-brief n.1). Blue-Skies research (data collection).	Research synthesis: design values and final counter brief. Research report.	
3	Jan. 24	Design Scenarios. Idea generation (system).	Class Reviews: Research. Design scenarios. System concepts.	Class Reviews: Research. Scenario building and strategy/ies definition; brainstorming (system).	Design scenarios visualization and communication. Contextual and Blue Skies research for the system.	
4	Jan .31	Preliminary concept definition, selection, and visualization (system). Idea generation (element).	System (group) ideas exploration and selection; and element (individual) ideas generation and selection.	Exploratory and explanatory sketches for the system (form, function, scenario of use, connection within the system).	Exploratory sketches for the element, idea selection (2-3), explanatory sketches and proof of concept prototypes.	

				Brainstorming (elements), contextual and blue skies research (elements).		
5	Feb. 07 *in the morning the class will happen at Rideau Hub	Mid-project presentations and reviews. (*presentations might happen at Incubator13 – Rideau Hub. To be confirmed.) Concept exploration (element) and detailing (system and element).	System and element concept presentation and review. Sketches and prototypes for idea exploration and development.	Presentations. Concept (element) selection, detailing (sketches – concept and related changes on system) and initial development (sketches and prototypes).	Concept (element) development and refinement (exploratory and explanatory sketches, research, lo-fi prototypes).	Research report. Design report (part 1). Research, design scenarios and concept (system and elements) presentation boards.
6	Feb. 14	Individual concept refinement and technical development.	Prototypes for idea development, for test and for evaluation (functionality).	Individual Reviews: concept refinement and development, identification of the component to be further developed. <u>Reviews with Walter Zanetti</u> on concept technical development (component). Prototypes for idea development, for test and for evaluation (functionality of the element).	Component technical development: research, and idea generation. Competition: submission materials.	
Feb. 20-24, 2023 Break – No classes						
7	Feb. 28	Design specification.	Concept development (component).	Individual Reviews: competition materials.	Component: final definition of structure/mechanism, technical requirements.	Competition materials (for internal review and feedback) – *optional.

			Concept technical Development (element).	<u>Reviews with Walter Zanetti</u> on concept technical development (element and component). Concept development (component): idea development, technical requirements, prototypes. Concept technical development (element): materials and manufacturing.	Element: scale model and tests.	
8	Mar. 07	Competition presentations. Design Specifications.	Presentations. Physical model for component.	Presentations. Physical model for component.	Test and evaluation (model)	Submission to the competition & presentations. *Last day to send out requests to the shops
9	Mar. 14	Final (scale) models and representations.	Reviews (for small improvements). Digital model and renderings, scale model (group and individual) and appropriate representation of the system.	Working on scale model, digital model, renderings and appropriate representations.	Working on scale model, digital model, renderings and appropriate representations.	
10	Mar. 21	Technical drawings.	Technical drawings.	Technical drawings.	Technical drawings, representation of the concepts.	
11	Mar. 28	Project communication	Presentation boards.	Presentation boards.	Presentation boards. Design report.	
12	Apr. 4 * the class will happen at Rideau Hub	Project final presentations (*presentations might happen at Incubator13 – Rideau	Project final presentations.	Project final presentations.		Design report (part 2), digital model, scale model, technical drawings, presentation boards.

		Hub – to be confirmed).				
--	--	-------------------------	--	--	--	--