![Carleton University logo]

IDES 2302B • PROJECTS IIB

Instructor:	**Juan Jimenez Garcia**
	JuanJimenezGarcia@cunet.carleton.ca
	Office Location: 2496 ME
	Office Hours: Available upon request
Teaching Assistant:	FirstName LastName
	juanjimenezgarcia@cmail.carleton.ca

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 adapting products to an existing product semantic. Topics covered: principles of design, product semantics, design analysis, design synthesis, design evaluation, and modeling techniques. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity.
Prerequisite(s): IDES 2300 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. Incorporate design analysis and synthesis as components within a design process.
2. Apply manufacturing theory utilizing wood and metal materials.
3. Integrate multi-sensory aspects of design.
4. Build on freehand orthographic and perspective sketching competency including construction, line-weight management, shading, and shadows to effectively demonstrate the idea generation process.
5. Analyze the visual language of a brand in terms of brand characteristics and design cues.
6. Incorporate design constraints in project standards.
7. Build on knowledge of technical drawings utilizing Computer Aided Design (CAD) software to produce General Arrangement drawings showing all parts and assembly including a Bill of Material.
8. Compile and present professional-looking presentation boards using analog and/or digital methods.
9. Work safely in labs and studios under supervision and develop physical prototyping and model-making knowledge and skills in medium to high fidelity materials using analog tools.
10. Demonstrate professional behaviour as an industrial designer.

Course Deliverables

These are the deliverables for this course. For more detailed information, please see the Course Schedule, **IDES 2302B PROJECTS IIB W26 - Juan Jimenez Garcia - Course Schedule**, in Brightspace.

Project 1	De-clutter	25%	Jan 27th
Project 2	Automata	30%	Mar 3rd
Project 3	Product Brand Extension	30%	Mar 31st

Sketching Practice	5%	Apr 1st
Participation & Professionalism	10%	

Student Access to Exam, Quizzes, and feedback on Academic Work

Carleton University is committed to providing students with appropriate and timely feedback on their work. Please see undergraduate regulations Article 5.3 and graduate regulations Article 23 for more information.

First assigned academic work will be evaluated and returned prior to the 10th teaching day of term.

Students have the right to have questions regarding their grades addressed and to view all material, including material that has not been returned such as final examinations. Please see undergraduate regulations Article 3.3.4 and graduate regulations Article 15 and Graduate Grade Appeal Process for more information.

This course has no exam.

Cost of Educational 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.

> **Project 1 (De-Clutter)**: Product materials are primarily sheet wood and metal. Some plastic sheets (variety), fabrics (variety), extruded elements, dowels, and hardware are additionally permitted. Overall product dimensions must be smaller than **a 2 ft cube**. If a product larger than this size is anticipated, it should be discussed with the professor.

Sheet Wood (Plywood):
- Common Sizes: 4 ft x 8 ft sheets.
- Thickness Options: 1/4 inch, 1/2 inch, 3/4 inch.
- Price Range: Approximately $30 to $80 per sheet, depending on thickness and grade.

Metal Sheets (Steel):
- Common Sizes: 2 ft x 2 ft sheets.
- Thickness (Gauge): Varies; commonly 16 to 24 gauge.
- Price Range: Approximately $15 to $65 per sheet, depending on size and thickness.

Plastic Sheets (Acrylic or Polycarbonate):
- Common Sizes: Varies; often sold in 12 in x 24 in or 24 in x 24 in sheets.
- Thickness Options: Varies; commonly 1/8 inch to 1/4 inch.
- Price Range: Approx. $10 to $50 per sheet, depending on size, thickness, and type.

Fabrics:
- Types: Cotton, polyester, nylon, etc.
- Price Range: Approximately $10 to $30 per meter, depending on fabric type and quality.

Extruded Elements (e.g., Aluminum Extrusions):
- Common Sizes: Lengths of 8 ft or more; cross-sectional dimensions vary.
- Price Range: Approximately $20 to $50 per piece, depending on size and profile.

Dowels:
- Materials: Wood or metal.
- Common Sizes: Lengths of 36 inches; diameters vary.

- Price Range: Approximately $2 to $10 per dowel, depending on material and size.

Hardware (e.g., Screws, Nails, Hinges):

Price Range: Approximately $5 to $20 per pack, depending on type and quantity.

Project 2 (Automata):

Chipboard sheets: (for prototype)

Size: 12" x 12"

Cost: $1.29 per sheet

Plywood (for final model)

Size: Square foot (12" x 12")

Cost: $2 per square foot.

Laser cutting cost: $2 per minute (Bring the illustrator file on your own USB)

Product materials for this deliverable are mostly paper sheets for sketching and final drawings, such as kraft paper, bond, and other drawing materials such as pens, pencils, coloured pencils, markers, crayons, etc.

Project 3 (Product brand extension): Product materials required for this deliverable are clay and clay tools for modelling; paper sheets for sketching and final drawings, such as kraft paper and bond, and other drawing materials, such as pens, pencils, coloured pencils, markers, crayons, etc., same as Project 2.

Clay:

Students will have the option to purchase clay directly from the School, as in previous years. Additionally, a limited amount of used clay will be available for building up clay models, if needed.

Clay – Modelling tools:

New clay tool kits have been purchased for student use. Due to their high cost, a refundable deposit of $25.00 will be required for each kit. The deposit will be reimbursed upon the return of the kit, provided all tools are clean and accounted for.

Clay Cost: $10.00 per billet

Tool Kit Deposit: $25.00

Students are encouraged to handle tools responsibly to ensure their availability for future use.

"Students are not required to purchase textbooks or other learning materials for this course."

Technology Requirements

Please refer to the technology requirements on the School of Industrial Design Website (https://carleton.ca/id/student-info/it-support/technology-requirements/). You may be asked by your instructor to refer to Brightspace for other information or requirements related to coursework.

Individual/Group Work

Courses may include individual and group work, and the majority of the grade must reflect individual work. This will support the assessment of individual performance, which may be difficult to determine in group projects. It is also important in collaborative work that students clearly demonstrate their individual contributions.

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 instructor's discretion.

If you are unable 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.

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. Students are welcome and encouraged to use available studio 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 whenever you are leaving the 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

Integrated AI Use – Support for Complex Tasks
Students are encouraged to use AI tools for initiating tasks, troubleshooting errors and engaging in complex activities to advance their knowledge and build skills.
- Research (e.g., using AI, such as Microsoft Word's Researcher tool to find and summarize scholarly articles)

Documenting Use of AI It is necessary to document your use of AI in this course, using the following guidelines:
- Transparently document AI usage, including specific tools and contributions (e.g., 'Literature review section generated using ChatGPT')
- Critically evaluate and refine AI-generated outputs to demonstrate understanding and originality
- AI should enhance, not replace, the student's learning process
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As our understanding of the uses of AI and its relationship to student work and academic integrity continue to evolve, students are required to discuss their use of AI in any circumstance not described here with the course instructor to ensure it supports the learning goals for the course. Students can access resources related to citing Generative AI on the MacOdrum Library website. Plus, additional AI resources are also available on Carleton's Artificial Intelligence Hub.

Requests for Academic Accommodation

Carleton is committed to providing academic accessibility for all individuals. You may require special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the *Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances*, are outlined on the Academic Accommodations website (students.carleton.ca/course-outline). The website covers the below topics.
Topics:
- Pregnancy Obligations
- Religious/Spiritual Obligation
- Academic Accommodations for Students with Disabilities
- Survivors of Sexual Violence
- Accommodation 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*

    o *Thriving on Campus*
    o *Everyday Stress*
    o *Mild Mental Health Concerns*
    o *Moderate Mental Health Concerns*
    o *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.

Course Schedule

Course Schedule: **IDES 2302B PROJECTS IIB W26 - Juan Jimenez Garcia - Course Schedule**.

Date		Activities[1]	Deliverables for the following week
Week 1 Jan 7		Research & Early Exploration	Submit to Brightspace:

			Speculative Needs Profile (AI)
			Interview Notes + Comparison Matrix
			Insight Summary (300 - 400 words)
			Exploration Sketches & Annotations (11 × 17 in PDF)
			Collage of Existing Products (11 × 17 in PDF)
			Bring your actual clutter items and basic prototyping materials to class.
Week 2 Jan 14		Design Concept Development	Submit to Brightspace: Two Concept Directions Final Concept Sketch (3/4 view) Orthographic Views with Notes Prototype Plan (materials + processes)
Week 3 Jan 21		Prototype Round 1	Bring the prototype to class for feedback.
Week 4 Jan 28		Prototype Round 2 + Preparing Final Presentation	Bring the refined prototype and prepare a draft of your communication materials.
Week 5 Feb 4		Final Presentation	1. Full-Scale Appearance Model Must fit within a 2 ft cube unless approved otherwise. 2. Presentation Boards (11 × 17 in)* - Board 1 – Problem & Synthesis - Board 2 – Design Development - Boards 3 & 4 – Final Concept Infographics 3. Catalogue Shot (8 × 10 in)* - Your model photographed in context (or simulated context). 4. Final Reflection (200–300 words)* Address: • What AI predicted correctly • What AI misunderstood • What real people clarified or changed • How insights shaped your final design • Your thoughts on AI as a design tool 5. 4–5 Minute Presentation - Tell the story of your process, insights, design decisions, and model construction. *points 2, 3, and 4 should be submitted in Brightspace by Tuesday Feb 3rd, 11:59 pm.
Week 5 Feb 4 (by the end of		Project 2 is introduced Research & Early Exploration	Deliverable (submitted to Brightspace by Feb 3, 11:59 pm): • Based on your initial understanding, create more than 10 idea sketches.

the class)			• Select the most promising idea you consider and bring to class an initial paper prototype.
Week 6 Feb 11	**Automata**	Design Concept Development	Deliverable (bring to class): • An initial works-like prototype • A digital simulation
Feb 18		Winter Break	
Week 7 Feb 25		Detailing the Final Concept	Deliverable: • Bring to class the work in progress final automaton prototype. • Bring to class a draft version, 11X17 inch board that explains the concept behind the artifact, explaining: - The societal shift you interpreted - The core dynamic you extracted - How the mechanism expresses this dynamic • By the end of that day (Feb 25th) upload this work in progress: a digital version of the board and a high-quality photo of the artifact.
Week8 Mar 4		Final Presentation	1. Bring to class the final automata model for exhibition. 2. Prepare a 3 min pitch that explains it. 3. Bring to class a final printed 11X17 inch board that explains the concept behind the artifact, explaining: a. The societal shift you interpreted b. The core dynamic you extracted c. How the mechanism expresses this dynamic. 4. By 11:59 pm on March 4th, please upload a digital version of the board and a high-quality photo of the artifact.
Week 9 Mar 11		Brand Analysis	4x presentation boards (11 x 17 in), submitted to Brightspace by 11:59 pm on March 10th, and printed and brought to Week 10 class. Only one student needs to submit for the group.
Week 10 Mar 18	**Brand Extension**	Concept Development	Each team member will individually develop a concept, including a ¾ view, appropriate orthographic views (Helmets at 1:1 scale), and any additional views necessary to effectively communicate the form. These drawings will be pinned up during Session 10 for further development in class. Submission Details: • Deadline: March 17tth by 11:59 PM • Format: Scanned hand-drawn or digital drawings • Submission: Each team member must upload their concept to Brightspace Ensure that your submission clearly conveys the design intent.
Week 11 Mar 25		Final Design Development	Work on a 1:1 scale clay model of your helmet on the head form with the clay and tools provided. - Make sure to review your design progress with your instructor.

Week			
			- Each group is required to create a half-model of a helmet for the final design. A half-model requires less modelling effort and can be placed against a mirror to visualize the full shape. While modelling the entire design is more satisfying, achieving good symmetry can be quite challenging and time-consuming. - The final model must be left in its natural clay finish. - Document the modelling process. - Work on the other final deliverables.

Week 12
Apr 1
		Final Presentation	The following are to be submitted on Brightspace by 11:59 pm on Mar. 31st (only one student needs to submit for the group) AND bring to class to pin up all the boards.
			
			1. Board 1. Resubmit the brand analysis boards if there were any changes.
			2. Board 2. Tech Drawings – Using the SID template, create a General Arrangement drawing(s) of your helmet (11 x 17 in). Add relevant annotations. The drawing must have:
			   a. one side view
			   b. one front view
			   c. one cross-section view that shows the various parts/elements/layers (alongside a B.O.M.)
			3. Board 3. An infographic poster (11 x 17 in), with a high-quality image(s) of the helmet, showcasing key elements and how they connect to the brand. These images can be hand-rendered with pens, markers, etc., created on a tablet or computer with Procreate, Photoshop, Illustrator, etc., enhancing photographs, but cannot be 3D modelled. Board graphics should be compelling and follow the brand's design language.
			4. Boards 4 and 5: 2x presentation boards (11 x 17 in), showing the process of building the physical model. Use mostly photos, with text where necessary.
			5. Board 6: All concept exploration sketches done on kraft paper (free size and extension).
			
			The clay helmet model on the head form.