Course Outline IDES 3310 • Section A • Projects IIIA • Fall 2019

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Teaching Assistant: Eric Wolfe
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Office Hours: During studio/lecture hours or by appointment.

Time and Location: Studio: Monday 9:35 – 12:35 / 1:35 – 4:25
Room: Azrieli Pavilion 448B

Course Description:

Introduction to the design principles associated with the evaluation and redesign 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 lectures. Includes Experiential Learning Activity, Precludes additional credit IDES 3300 (no longer offered). Prerequisite(s): IDES2302 or permission of the School of Industrial Design. Studio and lectures 6 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 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 process document that summarizes and illustrates the design consideration processes completed in development of the final design.

8. Communicate progress to peers and advisors through in class presentation.

9. Exhibit the ability to receive and respond to peer and instructor evaluations.

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


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


**Computer Requirements:**

Please refer to the computer requirements on the School of Industrial Design Website:

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

**Software:**

Software that should be installed on laptop:

- Adobe Suite (Photoshop, Illustrator and InDesign)
- SolidWorks and KeyShot (schools versions)

**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 for every studio session.

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
- Segmented Knife – Olfa like, 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.

Course Deliverables:

These are the deliverables for this course:

1. Warm Up Project

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

2. Studio Project

   A compressive design project is to redesign and existing product within a particular product category, focusing on incremental innovation in a specific market segments. Five 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 oriented innovative design, significantly altering the product form for a particular target market. The project will be divided into three distinctive deliverables 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 students soft skills that may not be captured in deliverables, but rather through their behaviour in class.

Please see Appendix A for Time Line Graphic & Appendix B Deliverable information.

Grading Document:

The final grade for the course will be based:

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

Individual/Group Work:

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

Studio Review Attendance:

Attendance at scheduled SID Reviews is mandatory. These are equivalent to exams when indicated in the course outline. Failure to attend the Review without reasonable cause, will result in a grade of F. Students arriving late for the Review 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, 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.

Student Access to Quiz, Test and Exam Papers:
Choose an item

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

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).

The 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.
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 cuLearn. 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 B

## COURSE DELIVERABLES

### WARM UP

<table>
<thead>
<tr>
<th>Get the Cobwebs Out:</th>
<th>5%</th>
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<tbody>
<tr>
<td>In-class project, pinup presented the following week</td>
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<tr>
<td>Requirements - Table Top Modeling and Presentations Tiles</td>
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### MAJOR PROJECT

| Project Category Section: | |
|---------------------------||
| Each student will develop their own Design Brief based on the product category chosen and specific market segment. |

<table>
<thead>
<tr>
<th>Research &amp; Concept:</th>
<th>20%</th>
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<tbody>
<tr>
<td>Apply a systematic investigation into existing products within the chosen category. Do product analysis identifying product shortcomings and opportunities.</td>
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<tr>
<td>Concept development must show process, alternative solutions and breath of ideation through models sketches, videos, etc.</td>
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<tr>
<td>Assessment - Thoroughness of research, analysis/synthesis, problem opportunity. Concepts demonstrate depth of ideation, user centered approach, completeness and quality of all work presented.</td>
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| Testing Session: | |
|-----------------||
| In studio testing session with classmates. |
| Use of low fidelity modeling to investigate the different aspects of your design. |
| Safety guidelines will be followed, any works like models must be presented to instructor prior to testing. Documentation can be through photo's, videos, and sketching user experience to develop an narrative. |

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<thead>
<tr>
<th>Definitive Design:</th>
<th>20%</th>
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<tbody>
<tr>
<td>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.</td>
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<tr>
<td>Assessment - Table top presentation, can use digital slide presentation, prototype models presented, in an organized manner. Show clarity of innovation, usability,investigations, functionality, materials and processes, and form development</td>
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<tr>
<th>Final Design:</th>
<th>50%</th>
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<tr>
<td>Walk around 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.</td>
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<tr>
<td>Worked presented: Final looks like model, process and testing materials, final working/technical drawings, tied presentation board, computer persuasive illustrations, narrative of user experience and process document summarizing the work completed</td>
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</tr>
<tr>
<td>Assessment - Student must show clarity of planning and process, detail form, function and manufacturing resolution, final appearance model quality and workmanship technical completeness.</td>
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### STUDIO PERFORMANCE

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<tr>
<th>Demonstrate:</th>
<th>5%</th>
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<tr>
<td>Active participation and professional conduct (e.g. class discussion, consultations with instructors, work ethic, etc.)</td>
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</table>

| 100% |