GENERAL COURSE INFORMATION AND SCHEDULING

Instructors
Lois Frankel (Section A)
Chantal Trudel (Section B)

Office Hours
During studio hours and by appointment.

Office
Lois: 3472, Mackenzie Bldg. (ME)
(w) 613-520-2600 ext.5675 (e) lois.frankel@carleton.ca
Chantal: 3476, Mackenzie Bldg. (ME)
(w) 613-520-2600 ext.5626 (e) chantal.trudel@carleton.ca

Teaching Assistants
Samantha Lovelace samanthalovelace@cmail.carleton.ca
Renee Isaac-Saper reneeisaacsaper@cmail.carleton.ca

Office Hours
During studio hours and by appointment.

Course Time and Location (students are expected to be in studio, lab or doing fieldwork)
**Fall:** Friday 9:35-12:25/13:35-16:25 in Canal Bldg. (CB) 4105
**Consult Room:** 9:35-16:25 in 2103 CB (select dates only)

Course Description
Application of design principles in a comprehensive design project. Problem area chosen should be product oriented and of sufficient complexity. Normally undertaken in consultation with off-campus organizations and industry; supervised by faculty members.

Learning Outcomes
By the end of this course, students will be able to:
1. Follow a phased approach to a comprehensive industrial design project of major scope.
2. Define a clear design problem/opportunity through research, analysis and synthesis.
3. Identify, develop, and apply appropriate design research methods (for example: literature review, user-centered research approaches, expert interviews, competitive and comparative product analysis, sketching prototyping, sketch & video modelling).
4. Visually document research and ongoing design thinking (sketch reporting).
5. Develop a product specification test plan that incorporates protocols such as: ethics applications for human testing, ergonomic function testing, usability testing, form evaluation, and manufacturing feasibility.
6. Apply product verification test plan above.
7. Iteratively refine a design solution based on information learned through evaluation by refining technical descriptive specifications, developing low-fidelity to high-fidelity
physical, interactive and/or virtual models (for example: explorative models, usability
test prototypes, appearance models, working prototypes, or interface simulations).
8. Formally present design activities using audio-visual methods current to the industrial
design profession.
9. Provide thorough and organized documentation throughout the development of the
design solution, using a range of media and formats, as appropriate for each phase of the
project (for example: iterative design briefs, research reports, progress posters, video
scenarios, personas, slide presentations, blogs, wikis, final report).
10. Keep instructor and partners well informed about project progress, including ongoing
and final project documentation as agreed upon.
11. Adopt professional/responsible behaviour.
12. Demonstrate the ability to receive and incorporate feedback from instructor through
consultation.

GENERAL COURSE CONTENT INFORMATION

Course Overview
The Major Project course is the final “capstone” studio and serves to demonstrate professional
readiness. The projects form the main focus of the year-end graduation exhibit.

The major project expands upon previous projects that students have worked on in the school in
significant ways. It lasts an entire year and follows an incremental multi-phased approach (see
below). Course instructors act as facilitators with external organizations, as class mentors, and as
evaluators of the students’ professional capabilities. Students may also interact with people from
external organizations with an interest in their work who will offer their expertise and assistance
in terms of identifying real-world problems, providing direction, valuable information, and
insight.

This course draws upon the many professional competencies that students need to demonstrate,
details of which are provided in Learning Outcomes 1-12 noted above.

COURSE INFORMATION AND SCHEDULING

Phased Approach
Comprehensive and complex projects are highly process-oriented and are normally developed
through a series of phases, with each phase culminating in milestones or deliverables. The fall
and winter semesters differ in scope and focus. During the fall semester, students focus on
preliminary research to define a problem as well as developing project ideas in consultation with
the instructor and outside stakeholders. In the winter semester, students further their
investigation by testing and/or evaluating ideas and deepening their development process in
order to create viable product solutions.

Phase 1: User Experience & Related Research (to define Opportunity)
Phase 2: Ideation & Evaluation Planning
Phase 3: Usability & Experience Implications
Phase 4: Iterative Design Refinement
Phase 5: Final Design Concept and Documentation
Fall Phases 2017

Phase 1: User Experience & Related Research (to Define Opportunity)
The first phase consists of fundamental research activities around user scenarios: secondary research, primary research and reflection through writing and design media. Students will conduct secondary research by reading background information on their topic/theme. This knowledge will then be augmented through primary research, which includes site visits, meetings and/or fieldwork with collaborators and end-users, as appropriate. Instructors have submitted a course-based ethics application on the behalf of students to conduct primary research. This phase also includes an ideation workshop where students reflect, react to and capture what they have learned during the first weeks of research through design media.

The deliverables for this phase include a Design Brief, a presentation (Review), a group Report, and a Digital Media presence of group work. These deliverables should fully capture the activities and findings from this phase (Refer to Appendix A).

Phase 2: Ideation & Evaluation Planning
The objective of this phase is to converge toward a clear concept that explores and addresses the opportunity identified in Phase 1. Students will evolve their ideas from Phase 1 through additional sketching, detailed drawing development and simple low fidelity prototypes (as appropriate to the topic) to explore issues and opportunities through design (e.g. concepts that support a desired activity, experience or outcome through functionality, sensory or cognitive elements, affordances or cues, usability heuristics, etc.). They need to identify and prioritize the most risky elements in their proposed solutions that require evaluation, as well those that can be supported through secondary research and can go without evaluating at this time. Additional research will inevitably occur during this phase as students discover new information that helps them strategize their test plan.

The deliverables for this phase include a Final Design Brief, a presentation (Review), a Report produced by your group with individual sections emphasizing conceptual development, a Test Plan and associated Ethics Application (Addendum) for usability testing methods or user experience evaluation that exceed the scope of the course-based ethics protocol, updates to your Digital Media presence and any additional work that has been developed as described above (Refer to Appendix A).

Winter Phases 2018

Phase 3: Usability & Experience Implications
Innovative concepts and ideas are usually fraught with uncertainty. This phase focuses on developing, testing and evaluating the riskiest aspects of the proposed design concepts, which could naturally include some negative or unexpected feedback and a need to redesign. Testing plans developed and approved in the previous term will be implemented to assess aspects of how the design concept meets or does not meet users’ needs, capabilities, or other requirements as outlined in the previous Design Brief.
The deliverables for this phase include a first draft PDS (Product Design Specification) based on evidence from usability testing and other methods of evaluation (prototypes, use scenarios, and mixed media capturing testing and evaluation activities). Students will participate in an informal Presentation, update their Digital Media presence and produce a Report documenting the testing process and results that led to the PDS. The PDS should be detailed with visualizations that capture the “Design Intent” leading to Phase 4 and should include a revised scenario of use (Refer to Appendix A).

**Phase 4: Iterative Design Refinement**

During this phase, students will demonstrate the ability to apply the information gained from Phase 3 to resolve any outstanding issues and develop formal details, the final sensory aspects of the design, final physical and/or virtual functional elements, material and manufacturing/production/costing options as appropriate. It is imperative that students understand that iterative design focuses on refining and iterating many variations iterations (sketches, foam and or fabric models, wire frames, working prototypes, interface simulations, experimental CAD models, specific feature iterations, etc.) of the concept to refine and fine-tune the design details. Students will benefit from staying on course, while exploring subtle details of significant design features. This is the time to avoid distraction that may undermine your progress with surprising information or developments.

The deliverables for this phase include: an updated PDS, many models and drawings of the refinement explorations, 1 model and drawing that captures the final design intent, display for presentation at a Design Community Forum for soliciting feedback, updates to students’ Digital Media presence and a Report (refer to Appendix A).

**Phase 5: Final Design Concept and Documentation**

The objective of Phase 5 is to produce all the final deliverables— that will be individually agreed upon with the instructor in writing and be unique to each project. The signed checklist document typically includes: appearance and/or working models (physical, interactive and/or virtual) of an appropriate scale; general assembly drawings, exploded views, an agreed list of part drawings, a finalized PDS/Design Brief; Scenarios of use (videos or storyboards); exhibition-quality presentation boards, models, and multi-media content should feature Scenarios of Use and Immersive Product Demonstrations. Technical drawings, and in the case of digital design projects, other relevant technical documentation (e.g. general assemblies, exploded views, information architecture, user interface, service design diagrams, etc.) should be included to show the design in detail (e.g. final appearance, how it will be manufactured, features, bill of materials, functional interactives, use scenario videos/visuals).

The final activity in Phase 5 involves organizing documentation from phases 1-5 and providing supporting documentation and files to the instructor. This final documentation will constitute a record for the School, for project partners, and be useful for portfolio development. It may be seen as the final repository of work at the School of Industrial Design.

The Final Report is an individual report submitted by each student. The Reports should however be consistently formatted by each group and have a graphic layout that is representative for the group. The total Report content and length will be decided upon in consultation with instructor.

Deliverables for this phase include: a final PDS, a Final Presentation (Final Review), exhibiton
quality material as noted above, a completed Digital Media presence, a Final Report documenting all 5 phases, and the File Repository which is a USB stick with all project source files (pdfs handed in throughout the year plus source files) from Phase 1 - Phase 5 (e.g. photos, videos, briefs, Adobe files, CAD files, slideshows and other material). Students will make a final formal presentation of their work to faculty and collaborators (refer to Appendix A).

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### COURSE COMPLETION AND EVALUATION INFORMATION

#### Course Completion Requirements
Students need to achieve an overall passing grade of C-, in order to pass the course. In addition, each student needs to complete and achieve at least a D in every phase of the course in order to meet the criteria for a passing grade. Students who receive a grade below C- in any phase must consult with the instructor before continuing on to the next phase.

#### Course Evaluation Information
The following provides information on evaluation for each phase. Please review Appendix A for basic information on deliverables.

#### Fall Term 2017  
40% of Final Grade

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: User Experience &amp; Related Research (to Define Opportunity)</td>
<td>15%</td>
</tr>
</tbody>
</table>

  *Review - 5%
  *Design Brief, Report & Digital Media - 10%

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2: Ideation &amp; Evaluation Planning</td>
<td>25%</td>
</tr>
</tbody>
</table>

  *Review - 10%
  *Final Design Brief, Ethics Application (Addendum), Test/Evaluation Plan, Report & Digital Media - 15%

#### Winter Term 2018  
60% of Final Grade

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 3: Usability &amp; Experience Implications</td>
<td>20%</td>
</tr>
</tbody>
</table>

  *Report & Digital Media 10%
  *Consultations & PDS Draft 10%

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 4: Iterative Design Refinement</td>
<td>15%</td>
</tr>
</tbody>
</table>

  *Community Consultation  5%
  *Report, Digital Media & refined PDS 10%

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 5: Final Design Concept and Documentation</td>
<td>25%</td>
</tr>
</tbody>
</table>
Final Review 10%
Report, Digital Media, final PDS & File Repository 15%
Professionalism and Process in Evaluation

All phases include a professionalism grade embedded in each deliverable for active participation and professional comport. Students should be able to demonstrate work that is of world class quality and a manner expected in professional work environments. Students are expected to attend studio sessions and reviews on time and arrive in studio each week prepared to discuss and interactively contribute to the overall class knowledge about the weekly themes.

It is imperative that students document all aspects of their projects formally throughout the term as a record of process and also to communicate their development with industry partners. In this course, in particular, it is not only about what the students end up designing, as it is about how they can demonstrate the process that they undertook as well as the insights and learning gained through the phases. The instructor will help refocus students who try to jump ahead by ignoring critical steps in the process.
<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Major Activity &amp; Deliverables</th>
<th>What to Work on this Week (This week’s activities and preparation needed for the following week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S6</td>
<td>Orientation</td>
<td><strong>Background reading (see Summer Project Descriptions). Record/memo. Review Ethics Application.</strong></td>
<td>Explore the elements of a good plan - review research techniques such as the concept of planning, briefs, secondary/primary research, fieldwork techniques (see Ares on CuLearn). Meet with specialist librarians on your topic. Strategize and develop Digital Media presence and template for Reports. Read/review secondary resources and record/memo. Prepare progress report for next week.</td>
</tr>
<tr>
<td>1</td>
<td>S8</td>
<td>Research Plans</td>
<td><strong>On-going secondary research. Fieldwork begins - site visits/kick-off meetings with primary contacts. Prepare progress report for next week.</strong></td>
</tr>
<tr>
<td>2</td>
<td>S15</td>
<td>Context Immersion</td>
<td>Ongoing fieldwork and secondary research. Concurrent analysis. Prepare progress report for next week. Warm up your sketching skills by developing 10 Scenarios of Use for informal discussion on Week 8.</td>
</tr>
<tr>
<td>3</td>
<td>S22</td>
<td>Context Immersion</td>
<td>Ongoing fieldwork and secondary research. Concurrent analysis &amp; synthesis. Prepare Design Brief for next week.</td>
</tr>
<tr>
<td>4</td>
<td>O6</td>
<td>Design brief Due 16:30</td>
<td>Synthesize initial findings. Prepare for Review next week. Work on Report and Digital Media.</td>
</tr>
<tr>
<td>6</td>
<td>O20</td>
<td>Report &amp; Digital Media Due 16:30</td>
<td>Finalize Report and Digital Media submission. Begin reviewing techniques (e.g. concept mapping, mind mapping, scenarios, conceptual blocking (cards), journey mapping, other techniques recommended by instructor) for week 8. Warm-up your sketching skills by developing 10 Scenarios of Use for informal discussion on Week 8.</td>
</tr>
<tr>
<td>7</td>
<td>N3</td>
<td>Your Directions – Idea Generation Workshop ‘Diverge’</td>
<td>Continue working on Scenarios of Use ready for class this week. Begin working on low fidelity 2D/3D prototypes and bring 10 concepts to studio for informal discussion in Week 9.</td>
</tr>
<tr>
<td>8</td>
<td>N10</td>
<td>Your Proposed Solution - Idea Generation Workshop ‘Converge’</td>
<td>Continue working on low fidelity prototypes for class this week and bring 3 concepts to studio for informal discussion. Begin work on Test/Evaluation Plan &amp; Ethics for submission on N14 for review prior to the Consultation.</td>
</tr>
<tr>
<td>9</td>
<td>N17</td>
<td>Planning to Better Understand Proposed Solution – Usability &amp; Experience Implications Test/Evaluation Plan *Draft Due N14 16:30; Consultation on Test/Evaluation Plan &amp; Ethics Application (Addendum) N17</td>
<td><strong>Revise Test/Evaluation Plan and Ethics Application (Addendum) based on Consultation for final submission to Carleton REB (no ethics submissions will be accepted past Dec 1). Prepare Final Design Brief for next week. Work on upcoming Review.</strong></td>
</tr>
<tr>
<td>10</td>
<td>N24</td>
<td>Final Design Brief, Ethics Application (Addendum) &amp; Test/Evaluation Plan Due 16:30</td>
<td>Prepare for Review next week. Work on Report and Digital Media.</td>
</tr>
<tr>
<td>D15</td>
<td>Report &amp; Digital Media Due 16:30</td>
<td>Finalize Report and Digital Media submission. Begin scheduling pilot tests with colleagues for J12. Begin recruiting participants for testing/evaluation Week 1-2 in Winter Term (with ethics clearance only).</td>
<td></td>
</tr>
<tr>
<td>Wk</td>
<td>Date</td>
<td>Major Activity &amp; Deliverables</td>
<td>What to Work on this Week</td>
</tr>
<tr>
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</tr>
<tr>
<td>1</td>
<td>J11 J12</td>
<td>Reality Check - Testing &amp; Evaluation</td>
<td>Begin implementing Test/Evaluation Plan this week – materials, models, wireframe, prototypes, data collection instruments, etc. ready to set up and be used on J11. Pilot on colleagues on J12 to work out bugs.</td>
</tr>
<tr>
<td>2</td>
<td>J18 J19</td>
<td>Reality Check - Testing &amp; Evaluation</td>
<td>Continue implementing Test/Evaluation Plan – test on real participants and collect real data. How does the concept meet/not meet users’ needs, capabilities, or other requirements outlined in your Design Brief? Document results and conduct analysis using research methods to answer these questions. Prepare Report and Digital Media for next week (and include this information).</td>
</tr>
<tr>
<td>3</td>
<td>J25 J26</td>
<td>Insights - Consolidating Report &amp; Digital Media due J26 16:30</td>
<td>Get ready for the Consultation and prepare the PDS Draft next week by refining the analysis and preparing a summary of findings. Demonstrate methods and results that inform further design work. What is required to address the needs/preferences of the people you studied? You are welcomed and encouraged to bring updated concepts based on this work. Use this information to develop your PDS draft. What will you then explore to refine your design? Prepare a plan for ‘creative iteration’ and include it in your PDS.</td>
</tr>
<tr>
<td>4</td>
<td>F1 F2</td>
<td>Consultations on F1 9:30-16:30 and F2 9:30-noon in groups.</td>
<td>Begin working on excessive iterations to finalize the concept through back-and-forth activity in sketching, modeling, CAD, etc. Explore changes in sensory and cognitive factors such as form, colour, materials, details, components, features, UI, digital interactions, etc. Prepare 10 iterations for each objective outlined in your PDS for next week. Document the work for the Report &amp; Digital Media.</td>
</tr>
<tr>
<td>5</td>
<td>F8 F9</td>
<td>Creative Iteration &amp; Integration – Consultation</td>
<td>Prepare for informal Consultations with a minimum of 5 iteration explorations per objective outlined in the PDS for next week. Document the work for the Report &amp; Digital Media.</td>
</tr>
<tr>
<td>6</td>
<td>F15 F16</td>
<td>Creative Iteration &amp; Integration – Consultation &amp; Something Fun (F16pm)</td>
<td>Prepare for informal Consultations with a minimum of 3 refinement/options based on last week’s work for Week 7. Document the work for the Report &amp; Digital Media.</td>
</tr>
<tr>
<td>7</td>
<td>M1 M2</td>
<td>Creative Iteration &amp; Integration – Consultation</td>
<td>Pick the refinement you want to present on Week 8 for further development and prepare for the Community Feedback session next week. Document the work and prepare the Report &amp; Digital Media for next week.</td>
</tr>
<tr>
<td>8</td>
<td>M8 M9</td>
<td>Community Consultation M8: pin-up 9:30, presentations 10:00-16:30; Report, Digital Media &amp; refined PDS due M9 16:30</td>
<td>Prepare for the Community Consultation session. Document your experience of the event and include in the Report &amp; Digital Media due this week. Prepare the contract for the Final Deliverable for signing on M15.</td>
</tr>
<tr>
<td>12</td>
<td>A5 A6</td>
<td>Final Review A6 9:30-16:30 (Note: A5 cleanup 14:30; hand-in 16:30)</td>
<td>Prepare the Report, Digital Media, Final PDS and File Repository for next week.</td>
</tr>
<tr>
<td></td>
<td>A11</td>
<td>Report, Digital Media, final PDS &amp; File Repository Due 16:30</td>
<td></td>
</tr>
</tbody>
</table>
• **Individual/Group Work**  
Courses may include various combinations of individual and group work. Students must demonstrate individual aptitude. It is important where collaborative work is undertaken that students be able to clearly demonstrate that individual contribution has been made. Where the evaluation for individual work is below a passing grade, that grade will be awarded for the course.

• **Review Attendance**  
Attendance at scheduled SID reviews is mandatory. These are equivalent to exams in IDES courses when indicated in the course outline. **Failure to attend will result in a grade of F.** If you are not able to attend a review, you are required to call the General Office (613-520-5672) and/or send an email to id@carleton.ca to leave a message in advance. A comprehensive medical certificate or other documentation to substantiate the absence must be submitted as soon as possible after the review. The documentation must state the date of illness onset, the expected date of recovery, and the extent to which the student is incapacitated. The student is also required to set up a meeting with the instructor as soon as he or she is well enough to discuss and schedule an alternative date.

Any student in the review should submit materials for presentation and present as scheduled. In addition, a student who does not remain for the complete review session, who does not present as scheduled, or who arrives late for the review, without approval from the instructor, will receive a 10% grade reduction for that review.

• **Late Submission of Deliverables**  
**Course Deliverables for reviews and other due dates**  
All deliverables submitted late will accrue a 10% per day deduction from the determined grade, to a maximum of 3 days, from the original deadline time and date. Failure to submit within 3 days, without approval from the instructor, will result in a grade of F.

• **Participation and Professionalism**  
Active participation and professional conduct are particularly important in studio courses and will be evaluated. At the same time, when the student’s work is reviewed at the end of the course, an evaluation will be made based on one or more of the following: in class discussion; consultations with instructors; and work ethic. However, none of these evaluations will be used to raise an overall failing grade, to a passing one, based on the quality of the work.

**STUDENT CONSIDERATIONS AND RESPONSIBILITIES**

• **Academic Accommodation** (Equity Services)  
You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:  
**Pregnancy obligation:** write to 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 visit: [http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)  
**Religious obligation:** write to 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
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 disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). Requests made within two weeks will be reviewed on a case-by-case basis. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (if applicable).

- **Instructional Offenses / Plagiarism**
  The regulations of the university require that we bring to your attention regulations on Instructional Offenses, descriptions of which can be found in the current Academic Integrity Policy available on the Student Affairs website. The policy governs the academic behavior of students. At the same time it seems that students do not always understand the meaning of plagiarism and how to avoid it.

  In industrial design, ideas and concepts come from a multitude of sources to be modified and utilized in the design and development process. The student should reference sources appropriately.

- **Student Responsibility**
  The student is responsible for knowing the content of this course outline, the schedule of classes, assignments, and reviews; and material covered during any absence from scheduled classes.

  Unless otherwise arranged, the class will meet during regularly scheduled studio hours. These meetings are mandatory; important issues and questions will be raised, and announcements might be made. Everyone is expected to be based in studio and to work during scheduled hours. The studio should be considered a professional design studio environment. Because of the special involvement of external professionals, scheduling changes for guest lectures, presentations, and reviews may occur at short notice; students should stay informed regularly.

- **Changes to the Course Outline**
  The course outline may be subject to change in the event of extenuating circumstances.
APPENDIX A

DELIVERABLES – BASIC INFORMATION

*Instructors will provide additional, more detailed information as needed throughout the year to assist you. Due dates and times are consistent throughout the year. Instructors will only adjust these dates/times if deemed necessary.

General File Naming Requirement:
- All digital file submissions must follow a specific naming convention provided below:
  TeamName_LastName_Phase#_SubmissionType_2017.Month.Day
  For example:
  MakingMusic_Frankel_Phase1_Report_2017.10.13

Design Briefs:
- Refer to Course Schedule for due dates. Always due at 16:30.
- Hand in one page and upload to CU Learn, 8.5 x 11 vertical format, black and white
- Design the Design Brief in an interesting way to compress needs in one page and well-designed worthy of presentation to a client.

Reviews:
- Refer to Course Schedule for hand-in and presentation dates.
- Duration is 9:30-16:30 (presentation schedule for groups to be posted on cuLearn prior to event). Hand-in of Review material occurs the day before the review at 16:30.
- We encourage you to use digital presentation mediums and pay close attention to legibility of text, graphics, images, video.
- Accompany presentation with engaging, creative physical or interactive mediums as appropriate to the phase of the work (e.g. artifacts, visuals of research techniques, exploratory sketches, explanatory sketches, concept drawings, use scenarios, story boards, videos, live performance or demonstrations, form models, appearance models, full and/or component prototypes of low-to-high fidelity, wireframes, digital interactives, materials/finishes boards, etc.).

Reports:
- Refer to Course Schedule for due dates. Always due at 16:30.
- Conducted in groups with individual sections as appropriate in the Fall Term.
- Reports are individual in the Winter Term.
- Indicate project members and project title.
- Use a minimum of 1” margins, 10-11 pt font with a minimum of 1.5 line spacing.
- Maximum word count (body text) per student for Reports:
  a) Phase 1-2 Reports must not exceed 3000 words per student (e.g. 5 students = 15,000 word maximum for group Reports).
  b) Phase 3 Report must not exceed 2000 words per student.
  c) Phase 4 Report is a visual documentation of the phase with a brief introduction on the phase of 250-500 words and captions describing the work.
  d) Phase 5 Report must not exceed 5000 words per student and must include relevant information from all Phases to tell a comprehensive story of the year’s work.
  e) Word count does not include words used in captions, tables, graphics, references, Ethics Application (Addendum), Test/Evaluation Plan, interview samples, scripts, etc.
f) Place additional material in Appendices (e.g. Ethics Application (Addendum), Test/Evaluation Plan, interview samples, scripts, test results, etc.)

g) Write clearly and succinctly to remain within word count.

h) Phase 2-5 Reports should include revised improvements to previous reports and capture the increased depth of understanding about the subject matter and design direction.

- For each Phase, hand in one good quality black and white printed document accompanied by one colour digital file in PDF format submitted on CuLearn (submission link on cuLearn will be provided by instructors).

Digital Media:
- Refer to Course Schedule for due dates.
- Select web platform your group can manage efficiently (e.g. Wordpress, Squarespace, Wix, GoDaddy).
- Create a group presence and an individual presence that is worthy of client presentation, demonstrates a sensitivity to web and graphic design principles.
- Follow ‘heuristic principles’ in designing your media approach (https://www.nngroup.com/articles/ten-usability-heuristics/).
- Emphasize process (design research techniques) and the results of your process (e.g. research findings, design development work).

Ethics Application (Addendum) & Test/Evaluation Plan:
- Refer to Course Schedule for due dates (please note that any final submissions received after Dec. 1 will not be submitted to the Carleton Research Ethics Board (REB) due to time constraints and REB workload during this time).
- How do you know your proposed ideas will work or be accepted by people? What do you want to test, evaluate, find out and how? What issues related to your ‘solutions’ do you feel need to be researched/confirmed through secondary sources or tested/evaluated if the information is unknown. Explore and categorize these issues with strategies for analysis by developing a Test/Evaluation Plan & Ethics Application (Addendum).

- Basic Steps: Create a draft of a Test/Evaluation Plan and review the original Ethics Application to determine if it covers what you would like to do in your Plan. **If your Plan exceeds what is carried in the Ethics Application (e.g. participant groups not covered in the application or methods not listed in the application) then you will need to issue an Addendum with the assistance of your instructors and TAs.** Note all the aspects of the Test/Evaluation Plan that fall outside the scope of the Ethics Application and edit the Ethics Application to add your proposed protocol (editable source file will be posted on cuLearn). There is no word limit but be precise and succinct to avoid redundancy and ensure an easy read. Check spelling and grammar in both your draft and final submission (this will be strongly evaluated).

- Test/Evaluation Plan Requirements: There is no word limit on the Test/Evaluation Plan but be precise and succinct (can be bullet point). Hand in an 8.5 x 11 vertical format, black and white, with spelling and grammar checked (again this will be strongly evaluated) with any sample scripts used with participants, interview questions and detailed text and visuals that depict testing/evaluation strategy, specific methods and illustrations/models of the concept being tested wherever possible (this helps the Ethics Board have a better understanding of what you want to do). **A draft Word file must be given to instructors/TAs for review (see submission date for draft and final submission).**

- Ethics (Addendum) Requirements: There is no word limit on the Addendum but be precise and succinct. **Students must edit the course-based application Word file and highlight any**
additions or changes in yellow. A draft Word file must be given to instructors/TAs for review (see submission date for draft and final submission). Create a colour PDF for final submission to the Carleton University Research Ethics Office. Students must provide a short description of their project and note major changes/additions to the original Ethics Application in a Word document (maximum 300 words) which should be saved as “Addendum Summary IDES 4310 Major Project – Student Name.pdf”

Product Design Specification (PDS):
- Refer to Course Schedule for due dates.
- There is no word limit but be precise and succinct with a strong use of visuals to support the content as appropriate.
- 8.5 x 11 vertical format, black and white, well-designed worthy of presentation to a client.

Consultations (Informal Reviews):
- Refer to Course Schedule for dates.
- Duration is 9:30-16:30 (schedule to be posted on cuLearn prior to event).
- These are dedicated informal reviews of critical project elements required to keep students on track in submitting deliverables.
- Attendance is mandatory and follow requirements for ‘Reviews’ under the section entitled ‘Course Completion and Evaluation Information’. Failure to attend will result in a 5% grade reduction on that Phase.

Community Consultation:
- Refer to Course Schedule for date.
- Duration is 9:30-16:30 (group layout of work will be posted on cuLearn prior to event).
- Pin up is from 9:30-10:00am.
- Presentations to the community are from 10:00-16:30 (a schedule of breaks will be posted on cuLearn prior to event so there are always student representatives from each group present for visitor traffic).
- Students should present and explain all of the progressive iterations that led to the one design they have selected so that community members can see the evolution and consider some of the rejected or evolved features.
- Attendance is mandatory. Failure to attend will result in a 5% grade reduction on Phase.

Exhibition Material and Process:
- will be developed and agreed upon with instructors and Exhibit Design Team.
- Exhibition design team will be requesting information from you throughout the Winter Term. Please respect the due dates to support their workflow.
- Some groups may present their final work to community/industry partners outside the Exhibit event.

Digital Repository of Work (Phase 5):
- Submit a USB stick with and excel spreadsheet list all work being submitted. Stick must include project documentation from the year’s work (briefs, presentations, reports, source files, digital material).