

COURSE OUTLINE IDES 2101A • DESIGN FOR MANUFACTURING A • Fall (2024)

Instructor: Bjarki Hallgrimsson

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Location: **AP436**

Office Hours: **Wednesday's at 1:30-2:30 in AP (my Office)**

Teaching Assistant: Sofia Parra

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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

Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. Influences and role of assembly, finishing, production tooling, and costing.

Includes: Experiential Learning Activity.

Prerequisite(s): IDES 1001, IDES 1301.

Lecture and tutorials three hours a week, laboratory three hours a week.

Learning Outcomes

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

1. Identify primary properties of wood, metals, and textiles and how they are extracted and transformed into raw materials.
2. Examine life cycle issues in regards to metals, wood, and textiles and demonstrate curiosity about evolving materials and processes.
3. Apply a systematic design process for comparing and contrasting different types of specific materials in terms of performance characteristics particular to their intended use.
4. Identify common manufacturing and fabrication processes for wood, metal, and textile products and how they relate to scales of production.
5. Describe common production scaling strategies, such as tooling and automation, as well as knock-down assembly.
6. Work safely in the lab under supervision by professional staff on laboratory projects.

Course Deliverables

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

Midterm	15	Butterknife Warm Up Project	5%
Final Exam	30	Group Project	35%
Quizzes	10		
60%		+	40% = 100%

Student Access to Quiz, Test, and Exam Papers

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

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.

All work on projects should be performed in the school's laboratories. A basic personal toolkit of hand-tools is recommended and will be discussed in class.

You will be required to buy wood and metal for your group project and all those materials are available through the school's laboratory inventory. Specialty materials or hardware for your project can be ordered from a variety of sources listed on Brightspace.

Additional Suggested Readings:

The texts below are suggested readings only. All quiz and exam questions will be taken from class lectures and readings posted on Brightspace.

Materialogy: the creative's guide to materials and technologies

Kula, Daniel ; Ternaux, Elodie ; Hirsinger, Quentin, 2013

Product Design and Sustainability: Strategies, Tools and Practice

Jane Penty, 2020

Prototyping and modelmaking for product design, 2nd Ed.

Hallgrimsson, Bjarki, 2020

Technology Requirements

Please refer to the technology 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 coursework.

<https://carleton.ca/id/student-info/computer-it-support/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.

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 30% 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

I wish to strike a balance between banning any use of AI and acknowledging that this is an emerging tool that can be used to assist in the research process. There are currently many ethical questions and implications around using these tools in the educational environment. Please consult the websites at the end of this section for clarification.

For this course only the following rules apply:

1. Academic Integrity Standards: 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 and is therefore **not allowed**.
2. You may use ChatGPT as a research tool. At the same time we will do so with the understanding that there are implications. The Carleton Teaching and Learning Services advice that there are limitations and ethical implications that I wish for you to be aware of by consulting the above:
 - a. Do not trust anything ChatGPT says. In fact anything it says needs to be verified by another source.
 - b. AI is a tool, but one that you need to acknowledge using. Please include a paragraph at the end of any assignment that uses AI explaining what you used the AI for and what prompts you used to get the results. Failure to do so violates the academic integrity policy.
 - c. Be thoughtful about when this tool is useful. Do not use it if it is not appropriate for the case or circumstance.

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>.

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, or valuable information may be shared, all of which can greatly benefit the student's learning experience. As external professionals may be 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 see separate document

Please refer to Brightspace for a detailed Course Schedule - IDES 2101A DESIGN FOR MANUFACTURING A F24 - Bjarki Hallgrimsson - Appendix A Course Schedule