MDes Handbook

Master of Design
School of Industrial Design
Carleton University

Fall | Summer | Winter | 2021 - 2022

School of Industrial Design

3470 Mackenzie Building
1125 Colonel by Drive
Ottawa, ON, k1s 5b6

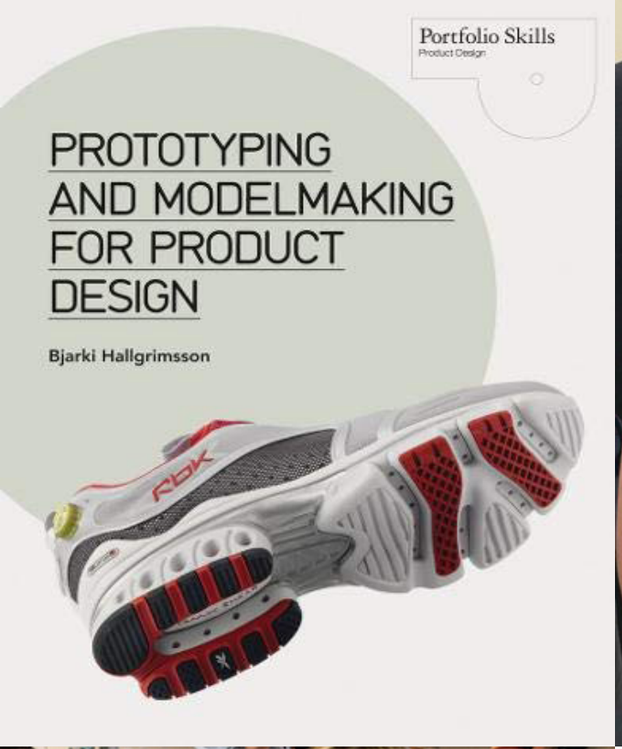
1. PROGRAM OVERVIEW

The School of Industrial Design offers a program of study and research leading to the Master of Design (MDes) degree. The MDes requires the successful completion of 5.0 credits, including a 2 credit thesis. The program takes a strong research approach, and is normally completed after two years of study.

The focus of the program is to advance knowledge in the field of design through the study of advanced design principles and interdisciplinary design practices. This is achieved through a program of study that will enable graduates to positively integrate design principles, methodologies, and interdisciplinary design development processes into private and public sector business practice.

Students examine and incorporate multifaceted design principles and practices that contribute to the strategic value of design with particular research focus on the following key areas: Accessibility and Design, Creativity in Design, Co-design, Design and Entrepreneurship, Design as Political Process, Design Pedagogy Research, Extreme Environments, Gendered Design, Healthcare Product Design, Human-Computer Interaction, Health care design, Individual and Collective creativity, Participatory Design Research, Prototyping Methods, Small-Scale living spaces design, Strategic/Systems Approach using Human Factors and Design, Strategic Design for Social Innovation, User Experience(UX) and Interaction Design.

They also have the opportunity to engage in interdisciplinary interactions with faculty from the School as well as faculty and students from a diverse range of disciplines in the university, all linked to the design development process.



2. PRIMARY LEARNING OBJECTIVES

The program focuses on the following objectives:

Design Research

The study of methods for investigation, exploration and data collection such as undertaking and differentiating between qualitative and quantitative data collection for design problems; examining discursive methods of critical analysis and practice; and employing emerging theories and practices in supervised research projects.

Interdisciplinary Design Development

The study and practice of methods that are used to foster collaboration across disciplines which may include: working on and contributing to projects in interdisciplinary teams; working on design projects with external public and private sector partners with a solid record of interdisciplinary development experience; learning in “interdisciplinary-team-taught” courses, and interdisciplinary thesis supervision.

Knowledge Creation and Dissemination

It involves expanding knowledge within critical design areas (e.g. advanced materials and manufacturing processes, advanced visualization, design and culture, design management, extreme environments, human-oriented design, product interaction design, social innovation, sustainable design, and strategic design research); writing and presenting papers; delivering workshops at conferences and seminars, funding permitted; and creating archival reference documents for industry such as case studies and technical reports.

Strategic Design Planning

The study of methods for planning, implementation and application which may include: incorporating strategic user observation analysis into design projects; identifying systems-related patterns for effectively planning design projects; merging relevant strategic design research and business practices; and integrating user-oriented innovations in prototyping new services and products.

3. ACHIEVEMENT OF PRIMARY LEARNING OBJECTIVES

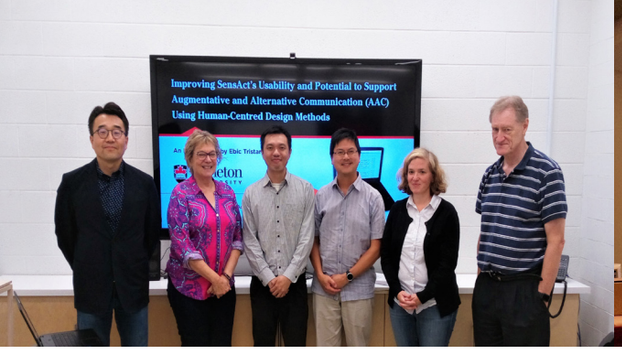
The learning objectives are achieved through a sequence of core courses structured to provide the opportunity for balancing theory and practice, and are integrated with courses from different disciplines. The core courses offer a variety of pedagogical approaches such as project-based interdisciplinary studio activities, lecture-based methodology and theory classes with individual and/or team papers, a seminar class, and international conference and workshop participation.

The sequence is structured so that students learn the theory and principles in one course, such as Design Research Method (IDES 5102) and apply it in a subsequent course, such as the Interdisciplinary Design Development Studio (IDES 5103).

Students are also required to take three elective courses to deepen their knowledge in areas relevant to their thesis topic. Finally, each student undertakes a supervised thesis investigation to apply and demonstrate the principles, research methods, and knowledge acquired.

All the core courses highlight interdisciplinary and/or collaborative work in theory or practice, where the term interdisciplinary refers to the cooperation between people from different disciplines to achieve common goals that integrate the expertise from those different disciplines. For example, the Interdisciplinary Design Development Studio (IDES 5103) may focus on projects undertaken by teams of students who share their different expert knowledge and experiences such as business, psychology, architecture, information technology among others.

In addition, the core courses highlight a balance between technological, environmental (sustainable), cultural, and social concerns. To this end the core courses promote a primarily user-centered design research approach.


Improving SensAct's Usability and Potential to Support
Augmentative and Alternative Communication (AAC)
Using Human-Centred Design Methods


Overview: Why momentum?
Enhance visitor experience:
Successful case studies
Motivation
Sense of connection
Dearth of research in Momentum


Carleton


interdisciplinary
sustainability
interaction design
research
technology
education

Peer Learning

Graduate students are expected to have a regular presence in the studio to benefit from peer learning as well as interactions with professors. The peer-learning model is the underlying principle behind the MDes classes in which students working on their projects have the advantage of engaging in and learning from critical discussion, interaction, and problem solving with peers and professors. In addition, graduate students may be invited to present research-in-progress talks to the student body at regular informal gatherings, and to participate in the annual undergraduate seminar (IDES 4001). Students are also encouraged to present papers and workshops at conferences and seminars, with funding support made available to them, on a limited basis.

Interdisciplinary Aspects

The objectives of learning interdisciplinary design development processes involve integrating different disciplines and different people to achieve common goals. In the MDes program, the student body is, in itself, made up of students with different design backgrounds whose discipline-specific perspectives broaden everyone's viewpoints. Opportunities for working with non-designers may be found in core and elective courses to prepare graduates to work on teams with non-designers in their future workplaces.

The Interdisciplinary Design Development Seminar (IDES 5101) introduces relevant issues in the design discourse. Later, Design Research Method course (IDES 5102) and Interdisciplinary Design Development Studio (IDES 5103) may include students enrolled in other degree programs such as the Sprott School of Business MBA program, the Master in Human-Computer Interaction, or the Master of Engineering in Technology Innovation Management. Working on a design problem that crosses- disciplines provides experiential learning in interdisciplinary design development processes. Furthermore, the extended core faculty of the program includes individuals who are members of different faculties and/or departments at Carleton University in addition to the School of Industrial Design. These faculty members will be involved as co-supervisors in student's thesis committees.

Finally, studio projects may be undertaken collaboratively with private sector partners with a solid record of interdisciplinary development experience who participate in studio activities and/or consult with the students on a regular basis.

The School has a long history of collaborating with public- and private-sector partners such as the National Capital Commission (NCC), Motorola, Bombardier, World Design Organization (WDO), Black and Decker, DW Product Development, Smart Technologies, and others.

4. PROGRAM REQUIREMENTS

The MDes program requires the successful completion of 5.0 credits with at least 4.5 credits taken at the 5000 level or higher.

The Graduate Program Coordinator approves elective course selections that might be chosen with the assistance of the supervisor. Only one 0.5 credit elective may be taken as a Directed Study. Only one 0.5 credit elective may be taken as a fourth-year course. The schedule of coursework and thesis progress follows:

Year 1
Fall Term

IDES 5101
IDES 5102

Milestone 1
***Thesis Supervisor Assignment F orm**

***Thesis Co-supervisor choice**

IDES 5101 Interdisciplinary Design Development Seminar (0.5 credit)
Investigation of disciplines involved in design development, with experts in Business, Engineering, Sociology Anthropology, Architecture, Psychology, Human Factors, Industrial Design, and others. Includes a critical examination of methods used to integrate different approaches, and roles that personality, leadership, negotiation, conflict management, and team building play in collaboration. Introduction to graduate academic writing.

IDES 5102 Research Methods (0.5 credit)
Critical analysis of research methods in design and disciplines contributing to design including anthropology, psychology, sociology, and business. Application areas include advanced materials and manufacturing processes, advanced visualization, product interaction design, extreme environments, sustainable design, design and culture, design management, and human-oriented design.

Milestone 1 - Statement of Study Interest
This statement is a short document of the area of student's research interest that has been identified and narrowed down during the 1st semester. It should include a brief description of the student's primary research curiosity along with the preliminary research questions and the implication of its potential results. The research topic should tie to the research areas of the supervisor as well as relating to the interdisciplinary expertise of the potential co-supervisor.

** Please refers to Appendix B*

This document should not exceed 500 words, have at least 5 relevant resources and follow the provided template. It must submitted to the MDes Brightspace submission link and emailed to the external co-supervisor for evaluation **by the 23rd of December** in the 1st Fall term (it the student does not meet this deadline, it will be difficult to meet the April deadline for Milestone 2).

Students must submit the ***Thesis Supervisor Assignment Form** no later than **the 30th of September** in the First term of registration. Students must re-submit this form with their **co-supervisor choice** together with Milestone 1.

Year 1
Winter Term

IDES 5103
Elective 1
Elective 2

Milestone 2

IDES 5103 Interdisciplinary Design Development Studio (0.5 credit)
Team-based studio projects draw on interdisciplinary design development methods in achieving a common design objective. Projects will be supervised by academic and industry advisors from a wide range of disciplines, and conducted in collaboration with professionals from external organizations. Open to students from other programs.

Thesis Supervisor & Co-supervisor
MDes is an interdisciplinary program which requires both supervisor and co-supervisor for the thesis. MDes students are assigned a thesis supervisor who is faculty member at the School of Industrial Design, Carleton University. The co-supervisor can be any Carleton Faculty member external to SID or an Adjunct Professors who is member of SID. An Adjunct Professor may only supervise an MDes thesis as co-supervisor.
If your proposed co-supervisor does not fit the above description, you must discuss this with the Graduate Supervisor, before you will be given approval.

Milestone 2- Annotated Bibliography
Annotated bibliography is a summary and /or evaluation of sources for student's research topic. It allows students to read each source more carefully and critically so as to gain a good perspective and comprehensive overview of their research topic in the literature and where their research focus would fit.
Students must review up to 10-15 relevant sources and

provide a brief explanation of why the sources are credible and relevant to your research topic. This document must be submitted to the MDes Brightspace submission link and emailed to your external co-supervisor by the **30th of April**.

Summer Term

For the most current listing of summer course offerings, visit the public class schedule. Students may also use the "Build Your Timetable" feature in Carleton Central to plan their summer schedule to ensure successful registration. Check the University's Registration website for more information on using the Timetable Tool, or for a number of helpful instructional videos. As the summer schedule is published several months prior to the beginning of classes, the University reserves the right to make any changes.

In addition, summer is the perfect time to get ethics approvals, collect data, and read thesis related literature in preparation for Milestone 3. Please consult with the student's supervisors and co-supervisor to develop the thesis proposal.

Year 2
Fall Semester

Elective 3
Milestone 3

Milestone 3 – Thesis Proposal*

The thesis proposal is a substantial document, resulting from considerable preliminary research into the thesis area. It must include the clear research questions, hypothesis investigated, relevant sources from concrete literature review, and doable data collection and analysis methods and research plan.
It must be submitted according to the template provided to the MDes Milestones Brightspace submission link and e-mailed to your co-supervisor **by the end of September** in year 2. After the submission, an **oral presentation** should be given to the invited audience including SID supervisor, co-supervisor, other faculty members and students. This event has to be done **by the end of the first week of October.**

Thesis Proposal should include the following information.
1. Introduction
   - Area of interest & Research question
2. Literature review
3. Methods
   - Data gathering
   - Ethics
4. Planning & Timescales
5. References

**Students must successfully satisfy each Milestone requirement before proceeding. If a Milestone is unsatisfied, the re-submission date will be negotiated with the Graduate Program Coordinator and the student's Supervisor and Co-supervisor.

IDES 5909 Thesis (2.0 credit)
A comprehensive study that demonstrates the student's ability to conduct critical research in a specific area in which design can contribute to competitive advantage through design planning and interdisciplinary design development processes. It should exhibit a competence in design research process by applying an existing body of knowledge in the critical analysis of a new question or of a specific problem or issue in a new setting.

Year 2
Winter Semester
IDES 5909

Final Thesis
Oral Examination

Thesis
This document should minimally include the following headings, as discussed on the Faculty of Graduate and Postdoctoral Affairs website at https://gradstudents.carleton.ca/resources-page/thesis-requirements/formatting-guidelines/

Title Page
Abstract
Acknowledgments
Table of Contents
  - List of Figures
  - List of Tables
  - List of Appendices

1. Introduction
   - Background/Context
2. Literature Review
   - Theoretical/Conceptual Framework
3. Methodology / Approach
4. Results / Research Findings
5. Conclusion
6. Discussion / Limitation/ Further study

Bibliography (APA format, 6th edition for citations and references only)
Appendices

Once the SID thesis supervisor and the co-supervisor approve the examination copy (deemed ready for defence), the student should upload the copy to Carleton Central at least **two weeks** before the defence date so that the SID supervisor could have time to assemble the thesis committee.

The Thesis co-supervisor's Approval Form is signed off electronically by the thesis supervisor indicating that the thesis is ready for defence. Once the thesis defence has taken place and all corrections are made, the final copy must be uploaded to Carleton Central. To do that, the student submits their final copy to supervisor and co-supervisor and the SID supervisor notifies the Graduate Administrator that the student is ready to upload. Then, the Graduate Administrator will authorize the upload and the student does it in Carleton Central. Along with the upload, the student must fill out licenses and agreements as well.

Information for thesis submission is available on the Faculty of Graduate and Postdoctoral Affairs website in a document entitled "Thesis Examination Policy". The copies must comply with any special school requirements governing the form of the thesis, including methods of bibliographical entry and the use of diagrams and tables.

Oral Examination
An oral examination is required for all students in the MDes program. The examination board will be formed by at least five members, including the SID thesis supervisor, co-supervisor, an examiner from a department other than that of the candidate, one additional member from the department concerned and a chair.

For more detail information, see the Faculty of Graduate and Postdoctoral Affairs website in the document entitled "Thesis Examinations Policy".

5. VIRTUAL THESIS DEFENCE GUIDELINE

Set up:
ID administrator sends student's file to Chair/Supervisor via email. Set up Zoom with a password.

During the defence:
Committee members and a student access Zoom link at the designated time to enter the thesis defence meeting session. Once everyone has arrived, the Chair welcomes everyone and starts the session by explaining the general procedure (more detail on each step is provided below):

Step 1. Closed part of the committee session: the candidate is sent to a Breakout Room (this can be done manually by the Zoom host) and then the thesis is briefly discussed by the committee. The Chair asks examiners if there are any major concerns with the thesis and whether the defence can proceed.

Step 2. Presentation: the candidate is then sent to the main meeting room to present (Zoom host closes the Breakout Room which sends the candidate back to the Main Session). Presentation is no more than 20 minutes (we don't normally cut anyone off unless they are significantly over time).

Step 3. Questions: two rounds of questions, comments and deliberation occur.

a. The 1st round of oral examination begins. The order is the Faculty Member outside the School of Industrial Design (external examiner) will be the first, the Faculty Member from the School of Industrial Design (internal examiner) is the second, the Co-Supervisor from outside School of Industrial Design is the third, and finally, Supervisor from the School of Industrial Design. The conversation is directly between the examiner and the student with no intervention. Typically, this lasts about 15-20 minutes per examiner. If an examiner is going significantly longer, remind examiner of the time. The supervisor typically only asks clarification questions.

b. The 2nd round of oral examination begins. The order is the same but conversation is allowed by all and is much less formal. This round is more general discussion and others can

comment.

c. The candidate is asked if they have any final/closing comments they would like to make to the committee.

Step 4. Deliberation and decision: the candidate is asked to leave the Main Session (is sent to Breakout Room) so the committee can discuss the candidate and come to a decision. Was the defence successful or not?

a. Supervisor to prepare the list of required revisions.
b. Chair to authorize Thesis Examination Report and send email post defence (see instructions below).
c. Candidate is asked to return for decision (Zoom host closes the Breakout Room which sends the candidate back to the Main Session). Chair informs the student of the decision and thanks everyone for their time.

Step 5. Post-defence: The Chair sends an email to replace the Thesis Examination Report (see below) and completes the 'Exam Report Outcome Form' with a list of required revisions on Carleton Central, triggering an email to the Graduate Administrator.

6. MDES STUDY SEQUENCE

	Year 1			Year 2	
Research & Course work	**Semester 1 Fall**	**Semester 2 Winter**	**Semester 3 Summer**	**Semester 4 Fall**	**Semester 5 Winter**
IDES 5101 (0.5 credit) Interdisciplinary Design Development Seminar	●				
IDES 5102 (0.5 credit) Research Methods	●				
IDES 5103 (0.5 credit) Interdisciplinary Design Development Studio		●			
Elective (0.5 credit)	● or	●			
Elective (0.5 credit)		●			
Elective (0.5 credit)			● or	●	
IDES 5909 (2 credit) Thesis					●
Semester Credit	1.0 or 1.5	1.0 or 1.5	0.5	0.5	2.0
Accumulated Credit	1.0 or 1.5	2.5		3.0	5.0
Deliverables	**Milestone 1** Statement of Study Interest	**Milestone 2** Annotated Bibliography Thesis supervisor Assigning form		**Milestone 3** Thesis Proposal	**Final Thesis & Oral Examination**
Research Activity	Establish area of interest Identify potential research topic	Scope of topic Hypothesis & Questions Develop methodology	Ethics Application Data Collection (If applicable) Literature Review Prepare Milestone 3	Conduct data collection Analyze & Synthesize data Identify Insights Draft of thesis	Examination Copy Complete Thesis Oral Defense
Supervisor	Confirmation of SID Supervisor; searching and confirmation for Co-supervisor		Work continue with the supervisor and co-supervior	Work continue with the supervisor and co-supervior	Formation of Examination board

7. SCHOOL RESOURCES

Administrative and Technical Support
The School of Industrial Design has two full-time administrators. The Graduate and Administrative Assistant is stationed in the General Office and responds to student and faculty daily concerns, serves as graduate program assistant, operates the resource centre, and helps with equipment and room bookings.

The School Administrator oversees student registration, the school web site, and student funding. The Computer Technician is available for computing issues and other computing and electronic expertise. The Chief Technician and the two lab technicians are available for manufacturing and model making expertise and other advanced prototyping support, if needed for graduate research.

Dedicated Space *(Because of COVID-19, the space is not available this fall and winter term. An alternative space will be provided in the Mackenzie Building).*
An 1100 square-foot room in the Azrieli Pavilion accommodates up to 24 graduate students in a natural-light studio. Students have access to this studio 24 hours a day. There are additional meeting rooms for faculty and students to meet to review their work on an ongoing basis, and they have to be booked ahead of time. Some small MDes classes will take place in the studio, and students not enrolled in those classes are welcome to work quietly in other parts of the room. Graduate students are able to take advantage of the range of work and learning spaces currently utilized by the undergraduate program.

The central space on the fourth floor is open for all to use and a good place to hold meetings. The school's Manufacturing Labs and Resources include sophisticated rapid prototyping capabilities, computer systems, equipment, and resources to support the design and development of three-dimensional and virtual prototypes. The Maker Room in the School of Industrial Design allows for significant research into and development of 3D printing technology, interactive electronic prototypes and final proof of concept models.

It complements and supports the design and generation of interactive products and systems. While these labs are primarily for the students enrolled in the Bachelor of Industrial Design program, graduate students may find that they need to support the undergrads in the shops as TA's or need to produce prototypes for their own thesis research. In both cases, individual consultation with the Chief Technician is required.

8. FACULTY RESEARCH PROFILES

Upon acceptance to the program, each student will be assigned a SID Graduate Supervisor. Each student will be encouraged to develop their personal elective curriculum in consultation with the supervisor. The Graduate Program Coordinator will make every effort to balance graduate students' interests with supervisory assignments.

Bjarki Hallgrimsson, P.Eng. IDSA
Director,
Associate Professor,
School of Industrial Design

BIO:
Professor Hallgrimsson is a product designer, author and researcher. After graduating with a mechanical engineering degree and gaining professional experience, he discovered industrial design, which became the passion and focus of his future career. He holds a MSE in product design from Stanford University and has worked for several professional industrial-design consulting firms in the United States and Canada. His own company HPD developed award winning and patented products for a variety of clients in a broad range of industries. His hands-on maker philosophy was shaped by many years of experience in industry. "Prototyping and Model making for Product Design", by Laurence King Publishing is available in 4 languages and shows how "physical prototypes form a strategic part of a successful product designer's toolkit". Although a generalist at heart, his expertise in designing assistive devices for people with disabilities continues to challenge him and his students to create more useful and human products that have a profound effect on the quality of life of people. Professor Hallgrimsson grew up in Sweden, Kenya and Tanzania. Through his international outlook, he has involved many students in community oriented design research in Africa.

RESEARCH:
Professor Hallgrimsson leads undergraduate and graduate students in research on practical prototyping methods, technologies and applications. This has included diverse projects in collaboration with other disciplines. His current focus is on digital prototyping methods and design of improved equipment and processes. A history of research and development of mobility devices includes award winning rollators (walkers) for HumanCare (previously Dana Douglas Inc.), as well as one of the first resin wheelchairs to be mass produced (Mobilaid). Professor Hallgrimsson sits on the advisory board of the Research Education Accessibility and Design (READ) initiative at Carleton. His students regularly work on universal design issues for better accessibility for Persons With Disability (PWD). Another focus includes the plight of extreme poverty and disability. He secured funding from the International Development Research Center (IDRC) to conduct interdisciplinary and collaborative research in Sub Saharan Africa also in collaboration with the Department of Environmental Engineering and Sprott School of Business at Carleton.

Through this work he has brought 15 undergraduate students and 2 graduate design students on fieldwork to Tanzania and Uganda. He was recently awarded the Network of Africa Designers award "for exemplary service and dedication in promotion of the Africa Design Agenda." One of his projects, "Promobilia Wheelchair-Tricycle" addresses mobility in rural Africa: http://Carleton.ca/wheelchair.

Chantal Trudel, MSc.
Assistant Professor,
School of Industrial Design.

BIO:
Chantal Trudel is a graduate of Carleton University's School of Industrial Design (B.I.D) and earned her Master's Degree in Applied Ergonomics (MSc) from the University of Nottingham. Chantal's experience reflects her appreciation for the role of industrial design within interdisciplinary teams and working with other professions to achieve a comprehensive understanding of people, processes and their context. Early in her career, she conducted research for Teknion's 'Advanced Concepts' and worked as a product designer for Umbra. For over 10 years, she worked within the field of architecture and interior design, exploring the use, planning and design of spaces and products within complex building systems. Starting with commercial interiors at B+H Architects, she went on to specialize in health care environments with Parkin Architects. Since then, her field experience in designing health care environments has given her insight into product limitations and potential research opportunities.

Chantal has worked on large, multidisciplinary teams, as a planner and designer on Winnipeg's Health Sciences Centre's (HSC) Women and Newborn Hospital (Parkin Architects/Architecture 49) and as a designer during the pursuit stage of Infrastructure Québec's McGill University Health Network Glen Campus competition in Montreal with (Parkin Architects under OHL). Her work has been featured in Canadian Interiors for the design of McClelland and Stewart's office (B+H Architects). In 2010, Chantal and her colleagues received the Canadian Architect Award of Excellence for the Women and Newborn Hospital and a High Commendation for the same project from the International Academy for Design and Health in the International Future Health Project Category in 2012.

RESEARCH:
Chantal is interested in design's role in health, safety, performance and productivity, with special interest in: clinical processes and the design of products and environment; patient and family experience in health care design; design for women and newborn care; the role of design in understanding and practicing infection prevention and control (IPAC); and human computer interaction in health care design. Her students have explored digital navigation in hospitals; noise cancellation/ personalized acoustic control for in-patients; IPAC and ergonomic considerations in commode chair and hand sanitizer design; sensor and internet-enabled technology for facilitating family assistance in care; to name just a few examples. Other students have explored health and safety within the context of forest fighting with the Ontario Ministry of Natural Resources and Forestry, investigating human factors considerations.

Chantal's research on clinical audiology as it relates to the ergonomics and design of products and the environment has been featured in Access Audiology & The Leader, a digital publication on the American Speech– Language– Hearing Association website. Her master's thesis examined the influence of product and environmental design as well as clinicians' perspectives and work motivations, on IPAC within a neonatal intensive care unit. The study leads to the development of a framework for understanding IPAC breaches and recommendations for further research and development.

Chiara Del Gaudio, Ph.D.
Graduate Program Coordinator,
Assistant Professor,
School of Industrial Design,
Cross Appointed to HCI.

BIO:
Chiara Del Gaudio holds a PhD in Design from Pontifícia Universidade Católica do Rio de Janeiro, an MSc in Design & Engineering from Politecnico di Milano, and a Bachelor degree in Industrial Design from the same institution. She has been teaching design at both undergraduate and graduate levels in Brazil and Canada, and she has been Visiting Professor in Italy and the US.

Her education and her practice, teaching, and research experience blend insights from industrial design with participatory and strategic design approaches and methodologies within an intercultural perspective. After working as a product and service designer, her design practice has mainly focused on design's social and political potential in projects happening at the intersection between the university and local communities. She has been working on applied design research projects addressing more democratic and sustainable urban contexts and improving local living conditions in poor urban areas. Since 2014, she has also worked as a strategic consultant for small service and innovation enterprises in Brazil and coordinated multidisciplinary teams.

RESEARCH:
Chiara Del Gaudio's main research and practice interests are design as political process, participatory and collaborative design approaches, strategic design for social innovation, and power and conflict within design processes. Within this framework, her research mainly focuses on designers' contribution towards more democratic scenarios. Specifically, she seeks to explore how designers can promote the conditions for them to happen and design processes for self-determination. In this regard, at the current moment, she is researching on power plays out in the design process, how to promote the transgression of oppressing social norms by design and how to evolve the existing strategic design practice through the concepts of tactics, devices and strategies, and the theories of complexity. Moreover, she has been researching the limits, challenges, and risks related to collaborative and participatory approaches when applied in society, and mainly in conflict-affected and fragile urban areas; and the necessary conditions for this kind of design practice.

She also is an active and growing member of the design research community at the national and international levels. In Brazil, she organized and re-designed the national Symposium on Sustainable Design in 2015 and 2017. She was invited to discuss and present her research in several national events and seminars, such as Entremeios (hold by ESDI-UERJ in Rio de Janeiro). She has published in peer-reviewed journals such as CoDesign, the International Journal of Design, Urban Design; and in edited collections such as Designing in Dark Times: An Arendtian Lexicon. She has worked with members of the participatory design network to foster the discussion of emerging topics in design and participatory design, such as decoloniality, pluriverse and pluriversal design, gender issues within design processes. She recently edited Design and Autonomía, a special issue of the Strategic Design Research Journal). In 2020 she organized the 16th Participatory Design Conference on the theme "Participation Otherwise" and is part of its Advisory Board.

Juan Jiménez Garcia, Ph.D.
Assistant Professor,
School of Industrial Design.

BIO:
Dr. Jiménez is a design researcher and professor with expertise in ethnographically informed design, human-centred design, and participatory design in the fields of personal informatics systems for healthcare and wellness.

He has an educational background in industrial design (BA from Universidad de Los Andes, Colombia). Following this, he completed advanced studies at the MSc. program 'Design for Interaction' at the faculty of Industrial Design Engineering of Delft University of Technology (TUDelft), the Netherlands with a Cum Laude degree. At the same university, he received his PhD with focus on Human-Computer Interaction and personal reflective healthcare technologies. After graduating, he worked as post-doctoral researcher exploring and implementing reflective mechanisms in the design of technology that supports energy consumption behaviour at home.

Juan has contributed to graduate and undergraduate Interactive Media Design, Industrial Design, and User Experience programs in different universities, such as Universidad de Los Andes (Colombia), Delft University of Technology (The Netherlands), The Hong Kong Polytechnic University (Hong Kong), Beijing Normal University (China), and Universidad Icesi (Colombia). He has been engaged in multiple positions: course coordinator, undergraduate final project coordinator, bachelor and master thesis advisor, and instructor.

RESEARCH:
Dr. Jiménez's research interest lies at the intersection of Human-Centered Design (HCD), Human-Computer Interaction (HCI) and Personal Informatics (PI). His research interest aims at developing an understanding on human needs and behaviours, looking to create social impact by designing socio-technical systems that deliver meaningful experiences between people, technology, and data. With a design-oriented approach, Juan has developed design methods and tools for field study explorations to deeply understand people's daily life practices in context, to further represent human needs through digital interactions that improve people's daily life.

Most of his research projects take a multidisciplinary approach related to healthcare: implementing self-reflective mechanisms for managing ADHD children's behavior, assisting patients during recovery at home, improving the yield of tuberculosis contact investigation, exploring Total Hip Replacement patients´ emotional and physical experiences after hospital discharge, increase physical activity in knowledge workers, etc. These projects involve the design and development of working prototypes (Tangible User Interfaces, TUI) for field study evaluation.

Juan engages with different multidisciplinary network that focuses on social innovation, as an active member of The Social Innovation Innovation in Health Initiative Latin America and the Caribbean (SIHI LAC).
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Stephen Field, MDes
Undergraduate Program Coordinator,
School of Industrial Design.

BIO:
Stephen Field is an internationally experienced industrial designer with over 25 years of background in the design and development of products and systems. As an educator Stephen mixes his professional experience with his enthusiasm and passion for design. From day one of first year studio Stephen introduces students to the design process, a process that will be cultivated throughout their industrial design education. As the students advance through the program Stephen, through his teaching, illustrates the importance of a holistic approach to design. As a past entrepreneur he describes how the importance of a sound business thinking combined with design can create innovative products and systems for the worlds diverse markets.

Only with understanding the tools and skills of design can students develop the visual language needed for creating. Stephen puts a great deal of emphasis on students developing the ability to sketch; he sees it as one of most valuable skills to contribute to the formulation of a good design. Only through the ability to sketch can a designer then pool the many other tools of design to create and develop products and systems.

RESEARCH:
Employing his global background in design and development of energy efficient housing components and manufacturing processes, Stephen is currently researching how a collaborative holistic approach can be utilized for the purpose of developing sustainable housing systems for remote Canadian Inuit communities. He is exploring how self-reliance for Inuit communities could be established through the development of traditional appropriate housing systems and products, which could be manufactured and maintained within Inuit communities. Most importantly Stephen's research is identifying that innovative solutions to large issues like the northern housing crisis can be tackled through an interdisciplinary design process.

Thomas Garvey, Ph.D.
Associate Professor,
School of Industrial Design,
Board of Directors at World Design Organization™

BIO:
Dr. Garvey specializes in product development and design for extreme and minimal environments. His interest in small-scale living spaces grew out of his work in New York on space station interiors and led to doctoral studies at the University of Tokyo on the topic of housing and urban density. For almost a decade he recorded imagery and data on how historical minimalist design philosophy can still be seen embedded in a range of contemporary approaches to lifestyle design, living environments, and the products that bring meaning to daily experience.

RESEARCH:
He became involved in hospital patient room design after joining the Global University Programs in Healthcare Architecture (GUPHA). The international organization looks at how design education can contribute to addressing the increasingly complex changes happening in hospitals worldwide, due to expanding and aging populations.

Prof. Garvey and his teams have received numerous awards and their prototypes have been presented at conferences and exhibits around the world, bridging both the design and healthcare worlds. He has also been involved in a range of curricular development projects for design education, both within universities and in collaboration with external organizations. Most recently he was invited expert at the 2014 ICSID Interdesign Mumbai, Humanizing a Metropolis, to contribute in the area of housing and shelter. Sponsored by the Welingkar Institute of Management Development and Research in Mumbai this work led to a pilot project in Canada to integrate design thinking into design and business collaborations.

He holds a Bachelor of Industrial Design from Carleton University, a M.Sc. in Communications Design from Pratt Institute in New York (funded by Design Canada Scholarships for Design Excellence provided by the Canadian Ministry of Industry, Trade, and Commerce), and a Ph.D. in Architectural Planning from the University of Tokyo (funded by Japanese Ministry of Education (Monbusho) Research Scholarship). He has also received a Michael Kalil Foundation Grant.

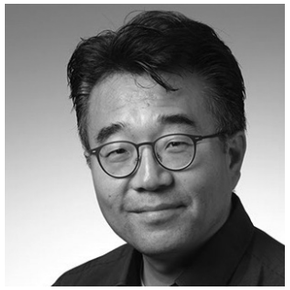
Tim Haats, MDes
Assistant Professor,
School of Industrial Design.

BIO:
Tim Haats is an experienced product designer, entrepreneur, researcher, and educator with expertise in product development, service design, and small business management. As an Assistant Professor in the School of Industrial Design at Carleton University, Tim utilizes his practical skills, knowledge, and passion for design and business to explore the relationship between design and entrepreneurship, and how emerging design practices support innovation.

Tim defines himself as a pracademic with active roles in both academia and professional practice. He is a small corporate business owner in the service industry managing many organizational aspects from daily operations to strategic planning. He is also a mentor and consultant for product design and entrepreneurship, working with students, inventors, and start-ups on different projects in various capacities. With this, Tim approaches his research initiatives from a practitioner's perspective with a focus on bridging practical and theoretical knowledge. A large part of his work is dedicated towards fostering industry partnerships, building professional relationships, and continuing to strengthen the links between research, academics, and professional practice.

RESEARCH:
Tim's research interests revolve around design, entrepreneurship, and business, and the emerging design practices that support innovation. This includes topics such as design entrepreneurship / intrapreneurship, design thinking, business design, organizational culture, intellectual property, and design methods.

One particular area of research currently being explored is the use of Cross Reality (XR) technologies – such as Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) – in design practice, and how these technologies can support the design process through new ways of collaborating, prototyping, and testing. Another particular area of exploration is the relationship between industry and academia, specifically within design, and how partnerships between institutions and organizations contribute to innovation while fostering experiential learning in education and benefiting practitioners, businesses, and the overall economy.



WonJoon Chung, Ph.D.
Associate Professor,
School of Industrial Design.

BIO:
Professor Chung is an industrial designer and design educator interested in developing pedagogical methods, materials, and techniques to enhance students' design competency that meets what the 21st century asks for.
He received a Ph.D. degree from the Institute of Design, Illinois Institute of Technology (IIT) in Chicago where he focused on developing a theoretical framework of early prototype use to foster design collaboration, and an M.A. degree from Industrial design department at the Ohio State University and a B.A. from Konkuk University in South Korea. Dr.Chung started his design career as a kitchen furniture designer at ENEX in South Korea and worked as a design intern at Battelle Memorial Institute in Columbus, Ohio and LPK in Cincinnati, Ohio. While pursuing his doctoral degree at the Institute of Design, IIT, he also taught a foundation course, called "Introduction to Product Design" for non-design background students. He joined Carleton's design program in 2007 and is currently ranked as an associate professor.

RESEARCH:
Dr. Chung's research focuses on developing pedagogical methods to enhance students' individual and collective creativity through the reflective and the abductive thinking process, the theoretical background of convergence design and design ethics for future designers.

One of his main research areas includes investigating the fundamental mechanism of design practices. For instance, he argues that interdisciplinary collaboration is not always guaranteed to produce productive results if its theoretical, institutional, and educational aspects are not well-defined. Based on this argument, he has developed a theoretical framework of an effective group collaboration by employing the notion of Activity Theory. Furthermore, he investigated the theoretical framework of metaphor for product designers and proposed its syllogistic configuration, "A is to X what X is to B," where X refers to the attributes of a given metaphor.

Another research area he is interested in includes the implications of improvisation in facilitating collective creativity during a design process and the theoretical mechanism of designers' mediums for creativity such as sketches and prototypes. Recently, he is researching on the role of the 21st-century designers as collaborative personnel creating the potential demand of various social sectors such as medical, finance, education, leisure, shopping, and entertainment, etc.

His research endeavor led him to be invited to participate in several government-funded projects in Korea that allowed him to establish a partnership with a number of prestigious industry partners as well as design universities in Korea.

9. GRADUATE SUPERVISION – RESPONSIBILITIES & EXPECTATIONS POLICY

Responsibilities of Supervisors

1. To provide constructive feedback to work submitted by the student in a timely manner as governed by departmental guidelines. This includes student's thesis work as well as his or her research papers. Where this feedback cannot be provided within one month, this delay must be handled in full consultation with the student.
2. To maintain regular communication and consultation with the student.
3. To be available for regular and timely consultations with students and to provide notification of lengthy absences and the support mechanisms available under these circumstances.
4. To agree to continue supervision when on sabbatical or other type of leave, or to assist the student in making arrangements for supervision during the period of the leave.
5. To assist students in seeking financial support, especially in writing letters of good quality in support of scholarship and fellowship applications (e.g. well-written, informative, typed, on university letterhead).
6. To convene meetings of the advisory committee.
7. To agree with the student on a reasonable schedule for the completion of each portion of the research and thesis. Supervisors should advise their students to be aware of FGPA deadlines.
8. To be familiar with the regulations and standards of the faculty of graduate and postdoctoral affairs, and the academic unit, especially as they pertain to the conduct of research and the production of the thesis, and to ensure that the student is aware of these regulations and standards.
9. To be aware of and abide by the university's policies on conflict of interest, sexual harassment, and research ethics.
10. To assist the student in identifying a suitable research topic and (where appropriate) setting up a program of study.
11. To assist the student in the interpretation of research materials.
12. To indicate clearly when a draft thesis is in acceptable condition for examination or, if it is clear that the thesis is not examinable, to advise

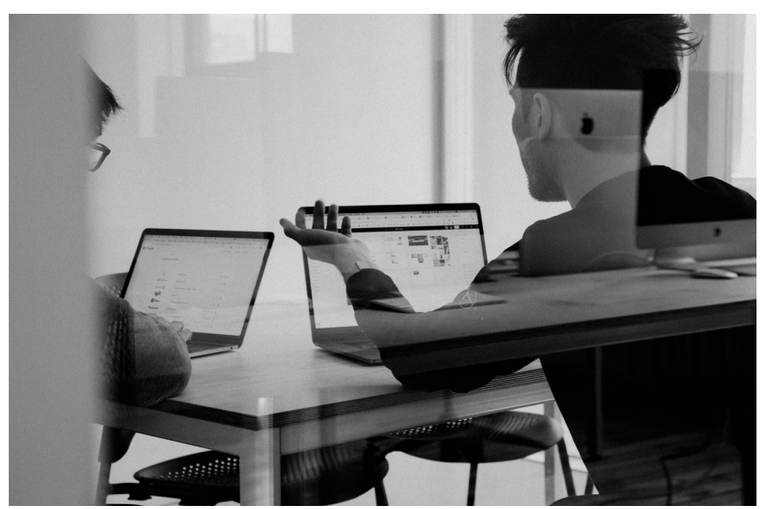
the student in a timely fashion. In the case of disagreement between the supervisor and the student as to whether the thesis should move to defence, the student does have the right to proceed to examination without the supervisor's support.

13. To complete all necessary departmental records and the supervisor's section of the annual audit form required by the faculty of graduate and postdoctoral affairs.
14. To discuss with the student as early as feasible, any potential joint authorships or joint ownership of data or patents which might arise, provide a written version of any understandings reached on these matters, and also ensure that student contributions to publications are adequately acknowledged. (granting agencies and major journals have guidelines which cover some or all of these items.)
15. To discuss with the student any potential copyright issues related to external material reproduced in the thesis.

Responsibilities of Students

1. To choose, with the supervisor's help, a feasible research topic.
2. To work systematically and within agreed deadlines, as far as possible, in order to meet the program deadlines specified by both the department and the Faculty of Graduate and Postdoctoral Affairs.
3. To familiarize themselves with the unit and FGPA policies regarding the elements, course and completion of their degree.
4. To make themselves available for meetings with their supervisor during regular business hours.
5. To be well prepared for meetings with the supervisor.
6. To participate in the professional development opportunities provided by their unit and FGPA.
7. To agree with the supervisor on a reasonable schedule for the completion of each portion of the research and thesis.
8. To submit to the supervisor all research materials, as requested, and, at the agreed times, drafts of parts of the thesis for comment.
9. To give serious attention to the advice and direction of the supervisor.
10. To realize that the supervisor has duties and commitments that may delay access at short notice or slow down the return of a draft.
11. To acknowledge direct assistance of material drawn from other scholars and researchers.
12. To produce a thesis which meets the specifications and standards of the Faculty of Graduate and Postdoctoral Affairs and the academic unit.
13. To submit the thesis to the judgment of the academic unit via the examination procedures specified and to abide by the judgment of the examiners, subject to any appeal on grounds of procedural irregularities.
14. To respect copyright regulations when reproducing external material in the thesis.
15. To maintain regular communication with the supervisor.

This array of responsibilities imparts certain expectations on the part of both the supervisor and student.



Expectations of the Supervisor

- To expect the student to pursue the agreed research topic, unless a change has been mutually agreed upon.
- To expect the student to give serious attention to advice concerning perceived deficiencies in the research and the thesis, and to receive a reasonable explanation when this advice is not followed.
- To terminate supervision if the student is not displaying a reasonable effort, if they fail to heed advice on changes deemed essential, or if the student changes the agreed thesis topic without consent.
- To have their contribution to the thesis appropriately and clearly acknowledged.
- To have permission from the author of the thesis for the research set out in the thesis to be used as part of the larger project, when the student has produced the research as a research assistant employed on the larger project (with the understanding that the student will retain scholarly credit).

Expectations of the Student

- To be assisted by the supervisor in developing a clear and feasible research topic and in solving problems and assessing progress as the work develops.
- To be assisted to a clear understanding of the substantive and formal requirements of a thesis (e.g., length; methodology; validation of topic; degree of originality, especially in masters theses).
- To receive within a reasonable time frame a fair and thorough assessment of both the drafts and the completed thesis, and clear explanations of negative comments.
- To be permitted to seek a new supervisor (however, it is understood that an academic unit and the university cannot guarantee a suitable replacement).
- To be protected from arbitrary changes in research direction which are detrimental to the timely completion of the thesis.
- To have their contribution to the thesis fairly reflected in the attribution of authorship of publications and of patents.
- To be permitted to submit a thesis for examination even if the supervisor is not satisfied, providing the work conforms to the guidelines and regulations laid down by the Faculty of Graduate and Postdoctoral Affairs and the academic unit.

10. POTENTIAL PROBLEMS & PROCESS FOR RESOLUTION

When either the student or the supervisor feel that the supervisory relationship has failed to meet the responsibilities listed in this policy, they may request an informal resolution process. This will take place initially within the academic unit, and then, if not resolved, within the Faculty of Graduate and Postdoctoral Affairs, with the involvement of the Ombudsman where this seems appropriate.

In those disciplines that do not assign a supervisor on admission, the student should understand that, while the academic unit will make every attempt to assign the supervisor of choice, the supervisorial relationship has to be consensual. Supervisors are assigned based on their availability and their competence in the field of the proposed thesis topic.

Students should understand that while the academic unit and the university will make every reasonable effort to find a supervisor for the student, there might be rare occasions where it proves impossible to do so. In cases where a suitable supervisor cannot be found, the student may be required to withdraw from the program in good standing. Furthermore, students understand that their lines of research may encounter some change due to dependence upon the research direction of the supervisor.

Honorary Faculty Appointments with Approved Supervision Status
For students seeking information about graduate supervision status, please contact your academic unit directly.

For Carleton Faculty/Staff: You can access the up-to-date list of honorary ranks in Banner. If you do not have access to this list, please email faculty.affairs@carleton.ca.

11. TRAVEL BURSARIES

The Faculty of Graduate and Postdoctoral Affairs provides funds to students in financial need who require assistance to conduct or present their research. The bursary account contains a limited amount of funds. Applications are considered on a case-by-case and first-come-first served basis. Applications are submitted to your department for approval.

Guidelines

- Only allowed to submit 1 application per academic year.
- Retroactive applications will not be approved.
- Must be registered full-time in the term in which the bursary is approved, and the travel occurs.
- Electronic Application forms must be submitted to the department at least one month in advance of the expected travel activity.
- Funds can be for research or conference. Students conducting research will normally be registered in the thesis, research essay or major research project course. Students attending a conference must have official confirmation from the conference organizer that the student's paper has been accepted for presentation.
- A letter of support from the student's thesis supervisor is required.
- A budget and rational are also required.
- Students are required to submit a report after attending the conference or research, to include proof of attendance (e.g., boarding passes, registration fee receipt).
- If the travel is not completed for any reason, the amount of the bursary must be reimbursed in full.

How to Apply

Students apply by completing the Graduate Student Travel / Research Bursary online application form.

What you need:

- Rational on how this travel will assist your research
- Travel costs
- Financial resources
- Official confirmation from the conference organizer that your paper has been accepted for presentation.
- Letter of support from your thesis supervisor

Steps:

1. Login to Carleton Central
2. Select the Awards and Financial Assistance menu
3. Click on Graduate Online Application Forms
4. Completed Graduate Student Travel / Research Bursary online application form including the budget and rationale
5. Combine the official confirmation from the conference organizer that the student's paper has been accepted for presentation and letter of support from your thesis supervisor into one pdf file.
6. Attach the above file to your application.

Thesis Supervisor Assignment

School of Industrial Design

- All parties should read and understand the Graduate Supervision-Responsibilities and Expectations Policy
- Master of Design students will need to submit this form twice.
  1. At the end of September to confirm their supervisor and thesis topic area only.
  2. At the end of the fall term when the the co-supervisor has been identified.
- Once the form has been submitted any changes to the supervisor or co-supervisor should be discussed with the Graduate Cooridinator.

Student

Name _____ **Carleton ID:** _____

Signature _____ Date (mm/dd/yyyy) _____ **Email:** _____

Thesis Topic Area: _____

Thesis Supervisor

Name _____

Signature _____ Date (mm/dd/yyyy) _____

Co-Supervisor (only required by the end of the fall term)

Name _____

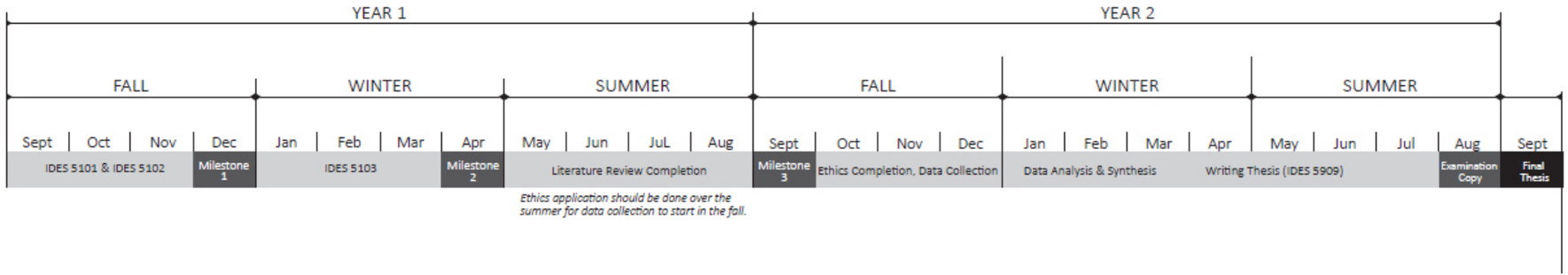
Signature _____ Date (mm/dd/yyyy) _____

Supervisors

MDes is an interdisciplinary program which requires both supervisor and co-supervisor for the thesis. MDes students must choose a thesis supervisor who is faculty member at the School of Industrial Design, Carleton University. The co-supervisor can be any Carleton Faculty member external to SID or an Adjunct Professors who is member of SID. An Adjunct Professor may only supervise an MDes thesis as co-supervisor. If your proposed supervisor does not fit the above description, you must discuss this with the Graduate Supervisor, before you will be given approval.

Please submit completed form to Brigthspace under the MDes Milestone course.

APPENDIX B: MDES PATHS TO COMPLETION



Milestone 1
Statement of Study Interest

Statement of Study Interest is a summary of your research interest that has been narrowed down during the 1st semester. It includes a brief description of your preliminary research questions along with the implication of the potential results of te research. Make sure that your research topic must tie to the research areas of the SID faculties with whom you want to work.

This document must be submitted to the MDes Brightspace submission link and emailed to the external co-supervisor for evaluation by **December 23** in the 1st Fall term (If you don't meet this deadline, it will be difficult to meet the April deadline for Milestone 2.)

Students must submit the thesis supervisor form no later than September 30. Full-time students should update it with the co-supervisor choice no later than December 23; part-time students no later than the end of the third term.

Milestone 2
Annotated Bibliography

Annotated bibliography is a summary and /or evaluation of sources you have used for researching your study topic. It includes a brief explanations of why each source is credible and relevant to your research topic. This substantial document of the preliminary research into a thesis topic areas must be submitted to the MDes Brightspace submission link and emailed to your external co-supervisor by **April 30 in the 2nd term.**

Milestone 3
Thesis Proposal

Thesis proposal describes what you will investigate, why it is important, and how you will do the research to get your thesis plan approved. It includes the clear research questions, hypothesis investigated, relevant sources from concreate literature review, and doable data collection and analysis methods and research plan.

Milestone 3 must be submitted be submitted to the MDes Milestones Brightspace submission link and e-mailed to your co-supervisor by **September 30 in year 2.**

Examination Copy

Examination copy of your thesis must be distributed to the thesis examination committee by **the end of August in year 2.**

Oral thesis defense will be scheduled 2 weeks after the submission of the examination copy.

Final Thesis

The deadline of a final thesis submition is usually in **the middle of September** for Nobember graduation (date changes yearly).

If the final thesis is not submitted until middle to end of September, graduation will take place in the winter semester, without having to pay ongoing tuition fees.

Students must successfully satisfy each milestone requirement before proceeding. If a milestone is unsatisfied, the re-submission date will be negotiated with the Graduate Program Coordinator and the student's thesis supervisors.