

# Learning Outcomes of Design

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## In Action



16<sup>th</sup> October 2014  
Job Rutgers & Paul Epp  
OCAD University  
Industrial Design

# Learning at OCADU

The learning experience at OCADU is highly experiential, hands on and reflective. The following slides present an impression.



At OCAD U students learn to 'find their voice'.

Jessica - Self-portrait on canvas

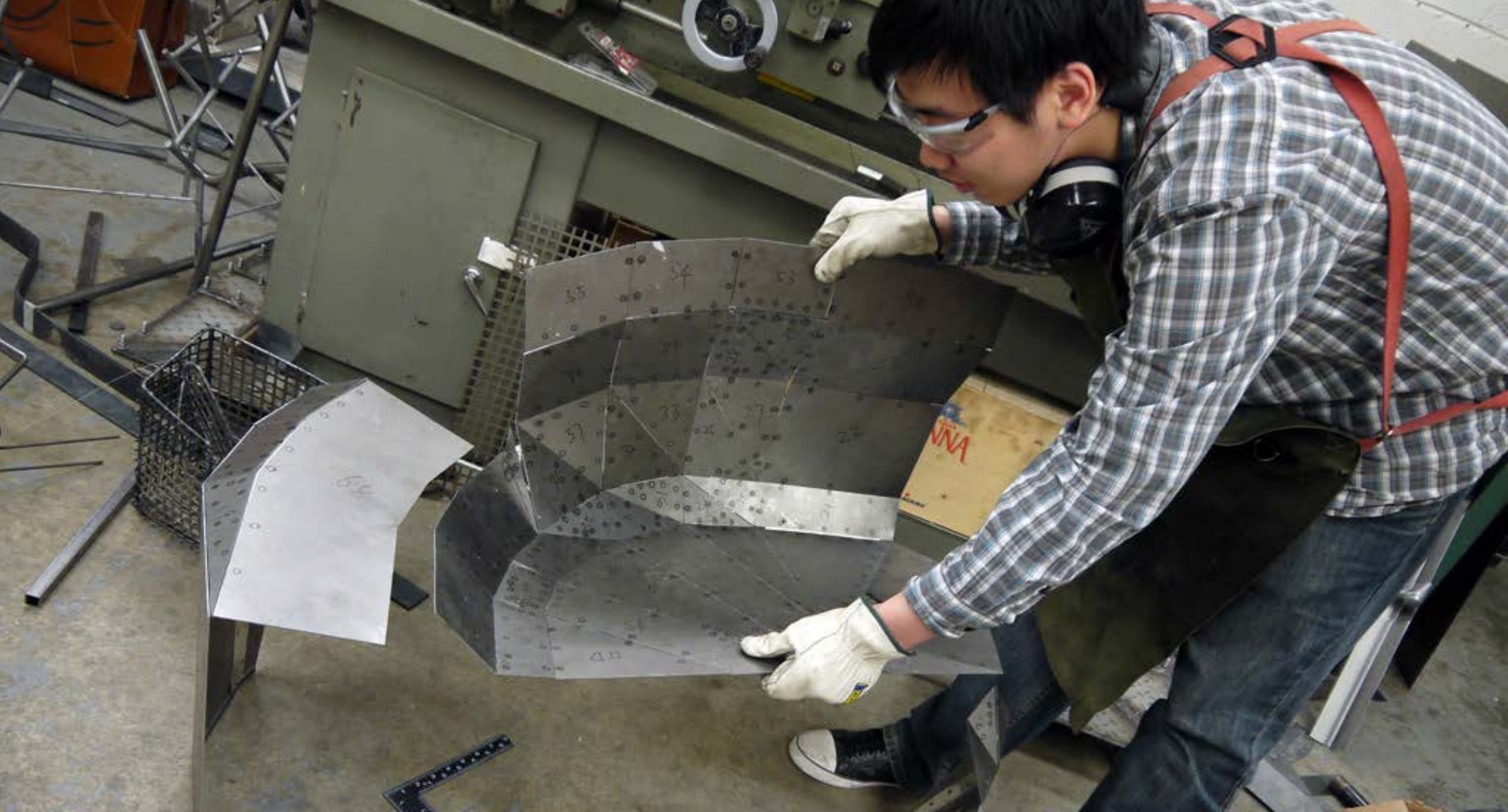




They do this by doing, reflecting and doing over and over again.

Jess - Dripping paints to create an action painting





They learn in a 'hands on' way to think through complex problems.

Chao - Making a sheet metal chair out of small metal pieces by welding

Students innovate and experiment with both process and results.



Katey - Drawing on video that captures her personal footprints around the city





They are creating their future, a process as fascinating as the results.



Patrick - Making a harvest table out of found materials for charity with three other team members

# Challenges

With an increasing interest in design and associated design thinking, questions arise on how you teach, manage and evaluate (design) education?



# Holistic Nature of Design

Most universities' privilege measuring the cognitive domain (knowledge & thinking). Yet 'Design' also involves skills & behaviors.

*How do you measure the holistic nature of design learning in a rigorous way ?*

# Holistic Nature of Design

*How is this student learning Design?*



Evi K. Hui – Design furniture for Palliative Care



# Open Ended Projects

In (project) studio based education, a teacher must respond to *that* student, *that* challenge of *that* project at *that* time

(D. Schon, The Reflective Practitioner).

*How do you evaluate a students' learning in individual, open ended project?*

# Open Ended Projects

*How do you evaluate these kind of projects?*





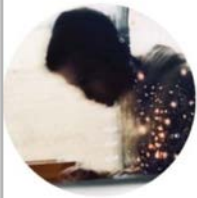





# Future Jobs

In our fast changing society, it is unclear what jobs will exist when design students will enter the labor market.

*How can we ensure that students' knowledge and skills are relevant 10 years from now?*

# Future Jobs

 <p><b>Jacob Prapavessis</b> Creative Narrator at Jackman Reinvents Toronto, Canada Area   Design</p> <p>Current: Jackman Reinvents Previous: Publicis Groupe   Red Lion Education: Ontario College of Art and Design</p> <p><a href="#">Send a message</a></p> <p>208 connections</p> <p>★ Relationship   📁 Contact Info   Connected 1 year ago</p> <p><b>Background</b></p> <p> Summary</p> <p>Specialties:</p> <ul style="list-style-type: none"><li>- Trans-disciplinary Collaboration</li></ul>	 <p><b>Patrick Kroetsch</b> Industrial Designer at BlackBerry Toronto, Canada Area   Design</p> <p>Current: BlackBerry Previous: BlackBerry, OCAD Ambient Experience Lab, RIM/RADO Interior Design Show (IDS) at OCAD University Education: Ontario College of Art and Design</p> <p><a href="#">Send a message</a></p> <p>188 connections</p> <p>★ Relationship   📁 Contact Info   Connected 2 years ago</p> <p><b>Background</b></p> <p> Summary</p> <p>I am a designer driven to create memorable experiences for users through the considered creation of objects, services and the interactions they provide.</p>	 <p><b>Evi K. Hui</b> Experience Designer at Adaptive Path San Francisco, California   Design</p> <p>Previous: Smart Design, Ambient Experience Lab OCAD University, Cooler Solutions Education: Ontario College of Art and Design</p> <p><a href="#">Send a message</a></p> <p>492 connections</p> <p>★ Relationship   📁 Contact Info   Connected 2 years ago</p> <p><b>Background</b></p> <p> Summary</p> <p>Evi K. Hui is an experience designer at Adaptive Path. Her journey into design began with a ball of clay in one hand and fabric in the other; as a child she made ceramics and soft goods which led her to study industrial design at OCAD University. Through UX focused classes, internships and an exchange</p>
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*Did we anticipate these jobs to (still) exist?*



# Competencies & learning outcomes

The following slides present *competencies* and holistic *learning outcomes* as key mechanisms in defining, delivering and measuring the design learning experience at OCADU's Industrial Design program.

# Competencies

A design competency integrates the student's ability to *thinking (knowledge)*, *do (skills) [doing]*, and *feel (behaviors)* in a specific content or Performance area.

# Competencies & **future jobs**

The skills, application of knowledge and behaviors described in a competency will be valuable *ten years from now* even if content has changed.



# Competencies & projects

To evaluate project based learning the teacher should measure not the project outcome (answer) of the project, but the *competency* of the student in solving a design challenge.

# Competencies & measurement

Acknowledging the uniqueness of design , design competencies include learning outcomes in both the cognitive, psychomotor and affective domain.

# LO curriculum Map

The following slides present how competency domains, competencies, levels and learning outcomes are defined and organized in the ID program.





# OCAD ID WWW

The following slides present the learning outcome taxonomy implemented in a student facing website.

# WWW



## Context

*A landscape of design themes, disciplines and process in which your learning takes place.*

### Themes

These strategic themes will introduce you to the most promising fields of industrial design.

### Focus

Each semester expands your focus of design, from products to interactive product/service/systems.

### Process

An iterative multi-stage process that provides structure and guidance to how you design.



## Competencies

*A framework of design competencies & learning outcomes that defines your learning.*

### Domains

Domains provide a thematic clustering of your industrial design competencies.

### Competencies

Knowledge, skills and behaviors that you must master in specific content or performance areas.

### Competency Levels

You must develop five levels before a competency is fully mastered.

### Program Competencies

These are named 'mats' because they involve you at a higher abstraction level.



## Curriculum

*A didactic structure that enables a student to learn Industrial Design.*

### Program

Industrial Design is a four-year program that comprises of a series of interrelated courses.

### Courses

A 12-week series of classes in which you develop competency levels in a specific domain.

### Progression

You will develop competency levels progressively, from one course to the other.

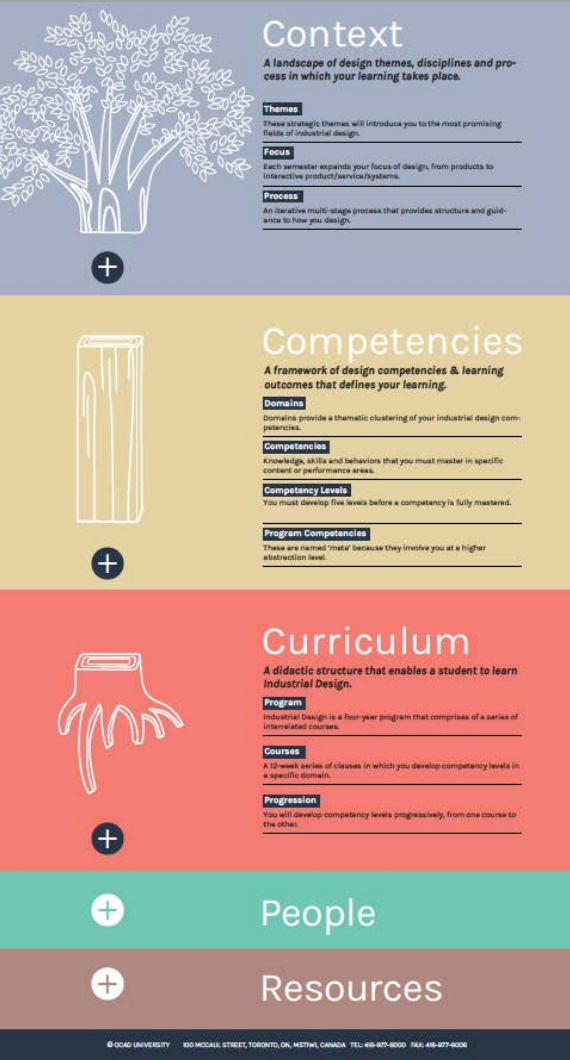


## People



## Resources





# Context

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## Themes

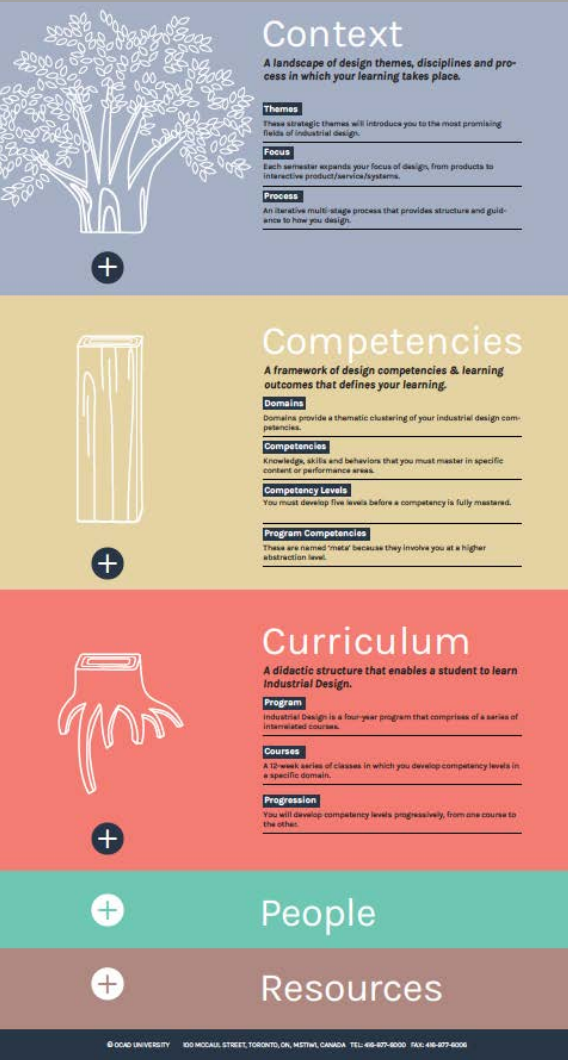
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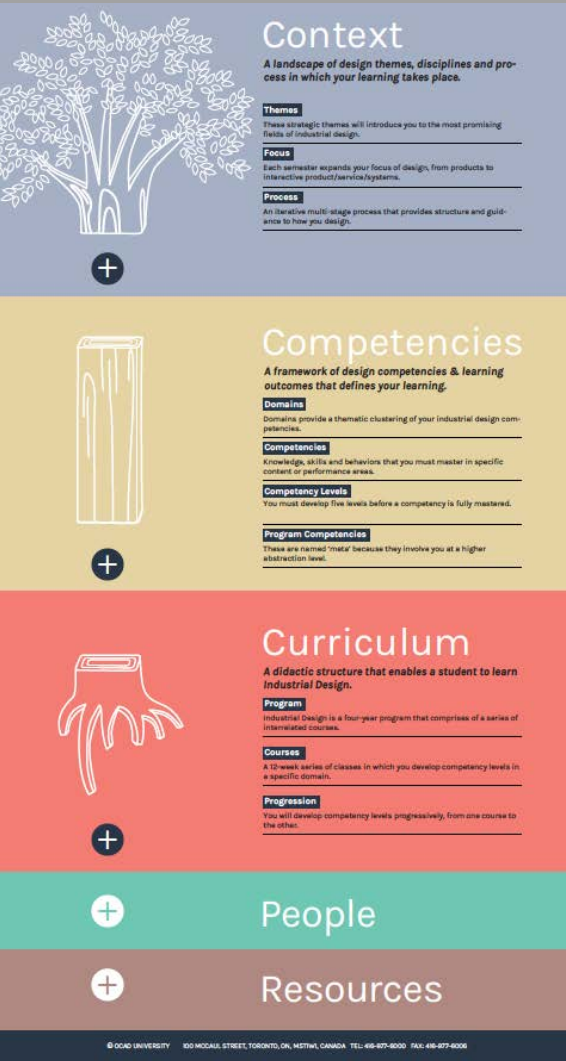
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# WWW

<http://www3.ocadu.ca/industrialdesigncurriculum/>



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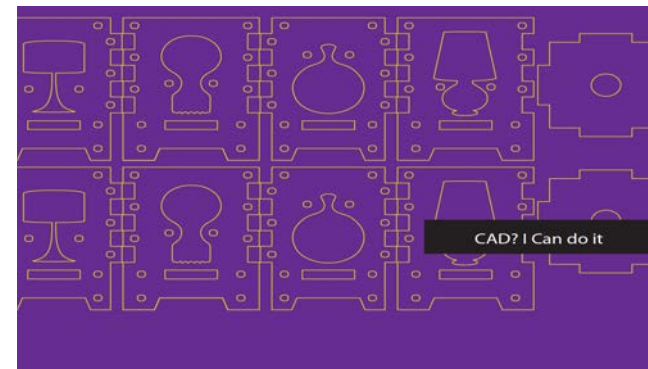
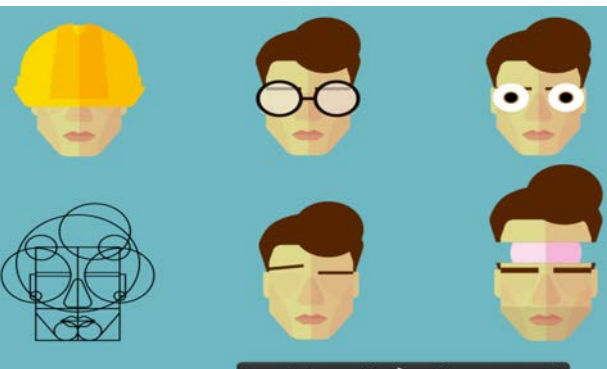
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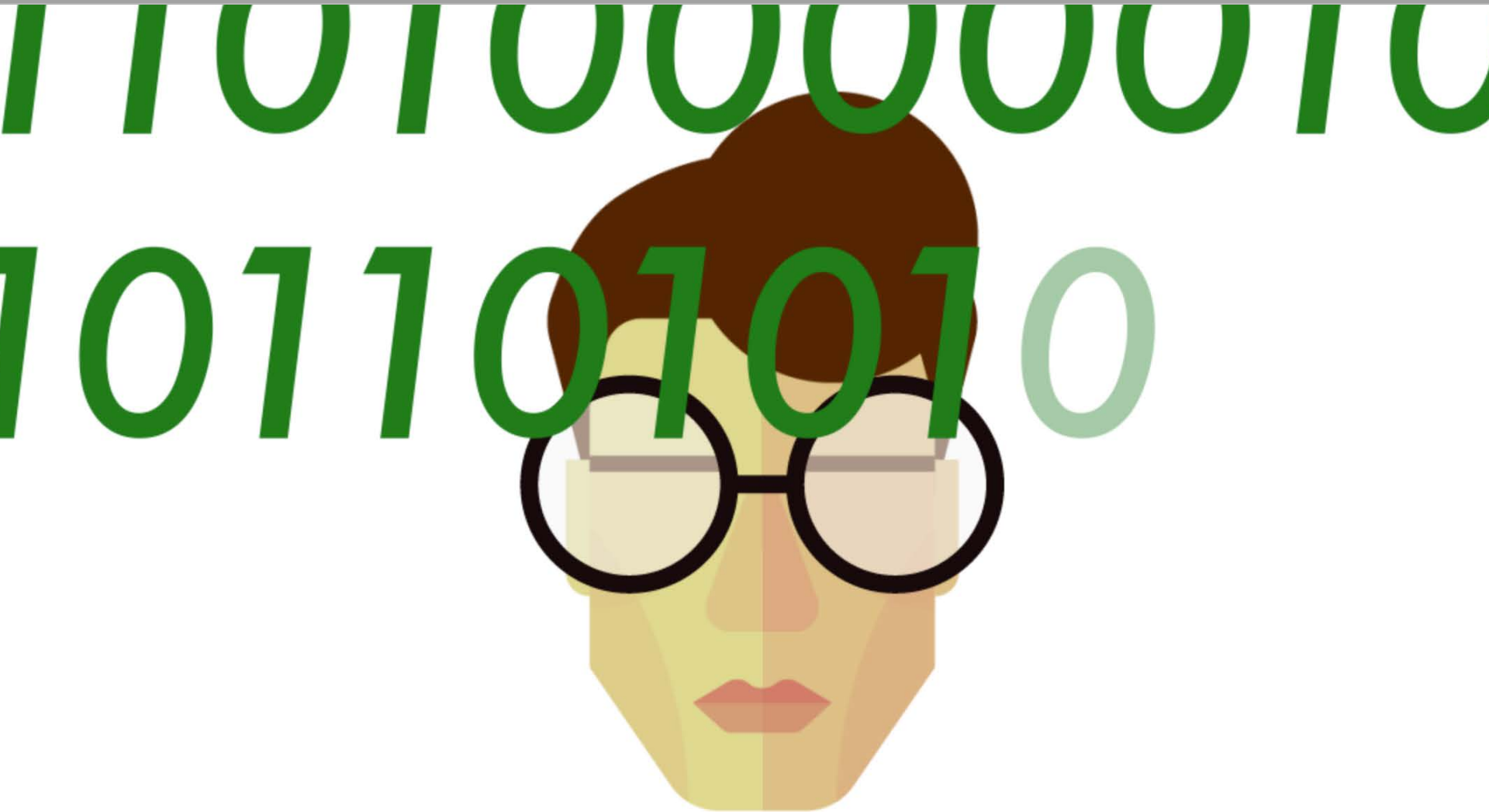


# Students Understanding of Learning





# Students Understanding of Learning



# Students Understanding of Learning



# Students Understanding of Learning

*Matthew Cherkas*

*2331874*

*This is my landscape*




# Learning Outcomes in action

The following slides present how the learning outcome tool is being used *in action*. The aim is to demonstrate how learning taxonomies ought to be *dynamic, changeable* to current and future changes.

# Competency Profiles



# Faculty Competency Profiles




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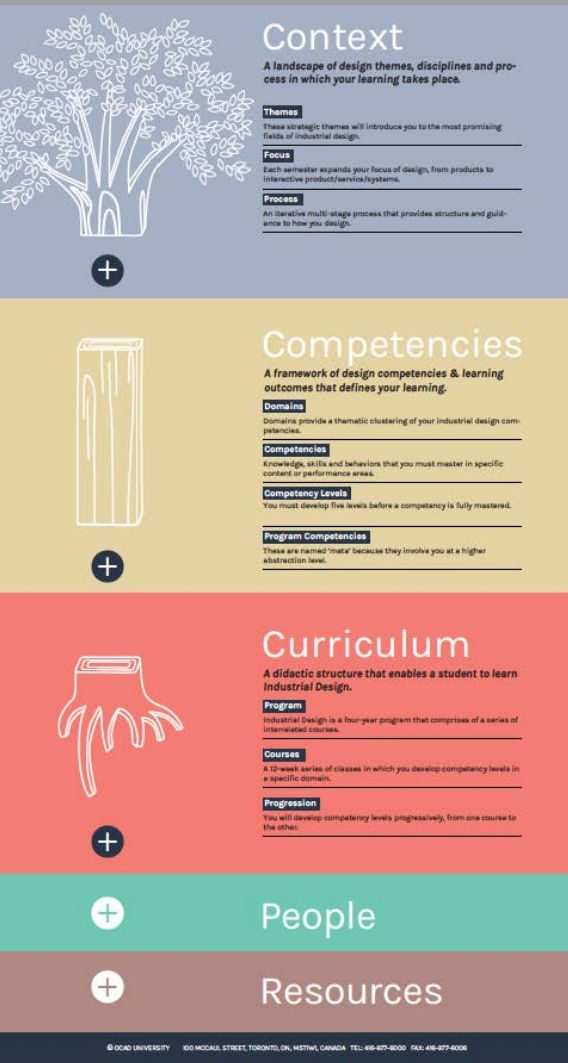
## People

## Resources

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	Name	CV	Competency Profile
A	Avery, Joshua	●	
B	Belcher, Brett	●	●
C	Campbell, Mark	●	●
	Coppin, Peter	●	
	Croteau, Dianne	●	●
D	Dywan, Beverly	●	●
E	Epp, Paul	●	●
G	Garvin, Richard		
	Goss, Jules	●	
H	Hejazi, Bahar Mousavi	●	●
J	Jones, Janet	●	●
K	Keller, Miles	●	●
	Kuipers, Joke	●	●

# Faculty Competency Profiles



**Job Rutgers**  
Ambient Experience Lab, OCADU  
Toronto, Canada Area | Research

Current Vuka Innovation Inc., OCAD University, Rotman School of Management  
Previous Rotman Designworks, Rotman School of Management, Philips Design Eindhoven  
Education Jan van Eyck Academy

Complete your profile Edit

500+ connections

ca.linkedin.com/pub/job-rutgers/0/bab/214

Contact Info

**Core**

- Design Process
- Understanding People
- Interaction design
- Understanding Business

**Images**

- Visualization Techniques
- Digital Visualization Techniques
- Communication & Presentation
- Visual Thinking


**Objects**

- Form Development
- Fabrication techniques
- Digital Fabrication
- 3D Thinking

**Thoughts**

- Context of design
- Thinking Typologies
- Future Thinking
- Conceptual Thinking

# Alumni Profiles



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+



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+

+

## People

+

## Resources

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adaptive path

CONSULTING

EVENTS & TRAINING

ABOUT

IDEAS

CONTACT




## Evi K. Hui

Experience Designer

Evi believes great design not only serves users but also helps businesses and organizations grow in meaningful

# Alumni Profiles: career tracks

## Industrial Designer



**Mark Remennik**  
Industrial Designer and Entrepreneur  
Toronto, Canada Area | Consumer Goods

Current Vanhawks, Silent Floor Solutions  
Previous Cervelo Cycles, OCAD University, whatToDo Toronto  
Education Ontario College of Art and Design


Send a message

314 connections

Relationship Contact Info

Connected 3 years ago

## Interaction Designer



**Kia Alavi**  
Interaction Designer at Idean  
Palo Alto, California | Design


Previous Elevate Solutions, BlackBerry, OCAD University  
Education OCAD University

Send a message

355 connections

Last Conversation 2 months ago

## Entrepreneur



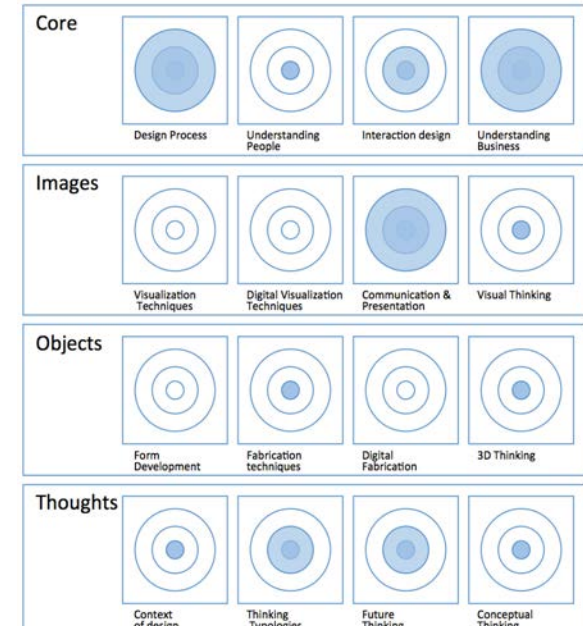
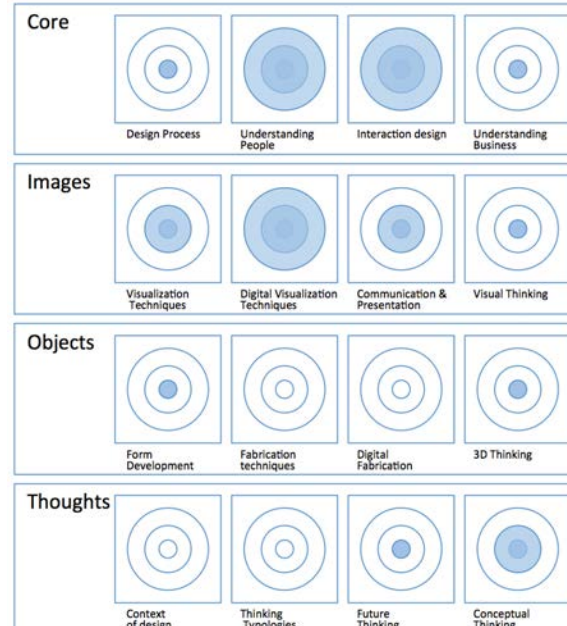
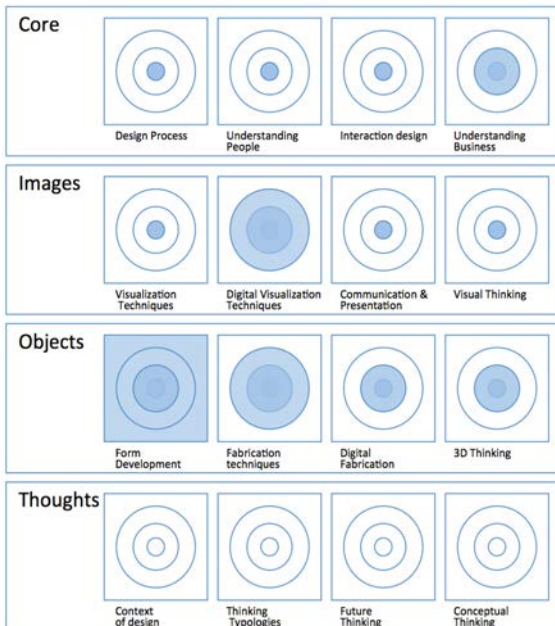
**Jessica Ching**  
Co-Founder, CEO at Eve Medical  
Toronto, Ontario, Canada | Medical Devices

Previous OCAD-Herman Miller Biomimicry Initiative, Telus Mobility, Umbr  
Education OCAD University, Ontario College of Art and Design

Send a message

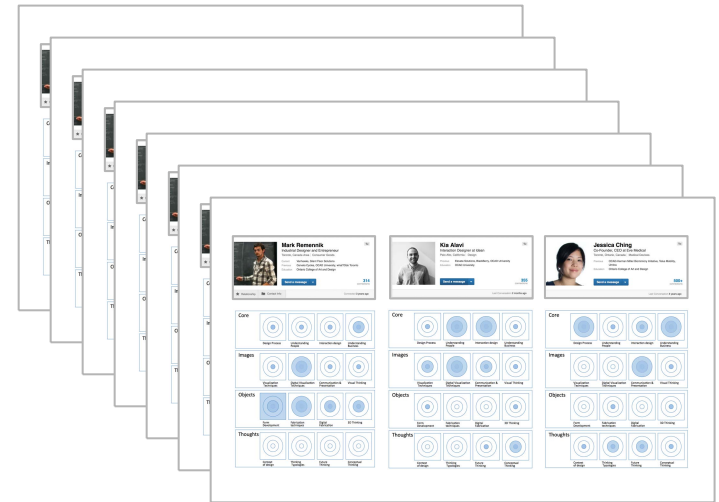
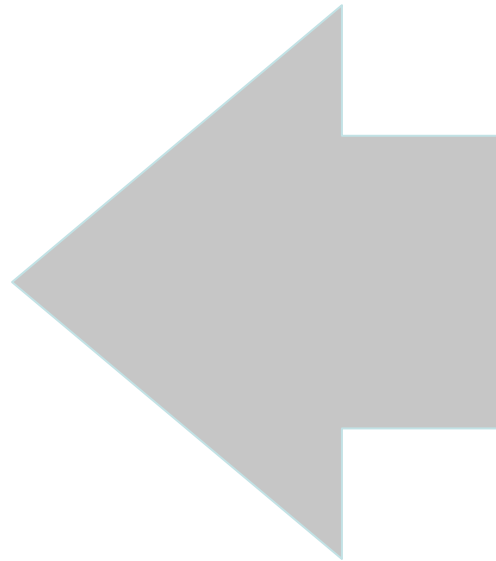
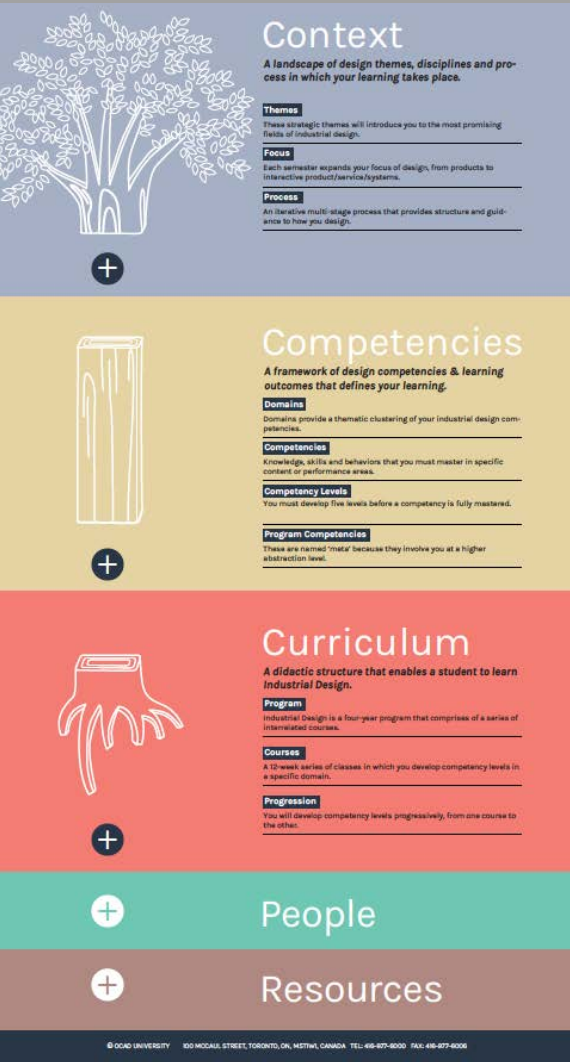
500+ connections

Last Conversation 3 years ago






# Review Curriculum





# E.g. “writing” in ID (ref. DiPietro)




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## Resources

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Domains	Year Level							
	1		2		3		4	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
Core	GDES 1B25 Form & Structure	INDS 1B01 ID Studio 1: Design of Everyday Things	INDS 2B15 ID Studio 2: Design for Private Space	INDS 2B19 ID Studio 3: Emerging Technologies	INDS 3B28 ID Studio 4: Design for Healthcare	INDS 3B33 ID Studio 5: Sustainability & Systems	INDS 4C01 Meta Project 1 or INDS 4C03 ID Studio 6: Product Design 1	INDS 4C02 Meta Project 2 or INDS 4C04 ID Studio 7: Product Design 2
All concurrent courses are reinforced within the core studios.								
Images	GDES 1B24 Colour and 2D Design  GDES 1B22 Drawing for ID & M&AD	GDES 1B29 Drawing for Industrial Design	INDS 2B16 Presentation & Communication for ID	INDS 2B12 Advanced Drawing for 3D Design	GDEX 3B15 Drawing for Manufacturing  (This is a recommended expansion studio for those students who are interested in manufacturing and Solidworks)			
Objects	INDS 1B02 Material Explorations 1  GART 1B70 Creative Process: Art & Code	INDS 2B17 Material Explorations 2	INDS 2B18 Material Explorations 3					
Thoughts			GDES 2B03 Think Tank 1: Awareness	INDS 3B25 Conceptual Tools and Techniques	INDS 3B31 Activist Design	INDS 3B09 Research Methodologies for ID	INDS 4B07 Context & Departure Points	
Future					INDS 3B32 Connections/ Case Studies or INDS 3B34 Connections/ Internship		INDS 4B09 Professional Preparation	

# E.g. “writing”




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Images	GDES 1B24 Colour and 2D Design	SE GDES 1B25 Drawing for Industrial Design	SE INDS 2B16 Presentation Communication for ID	SE NDS 2B12 Advanced Drawing for Design	SE GDEX 3B15 Drawing for Manufacturing (This is a recommended expansion studio for those students who are interested in manufacturing and Solidworks)
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SE	Self Evaluation			
COURSE	SELF EVALUATION	NAME		
Context of Design	Describe your understanding of the design process and how it relates to the design process.	(Students)	Criteria	SE
Competencies of Design	Describe your understanding of the design process and how it relates to the design process.	(Criteria)	Criteria	SE
Meta Project	Describe your understanding of the design process and how it relates to the design process.	(Criteria)	Criteria	SE
Product Design 1	Describe your understanding of the design process and how it relates to the design process.	(Criteria)	Criteria	SE
Product Design 2	Describe your understanding of the design process and how it relates to the design process.	(Criteria)	Criteria	SE

D	Writing Deliverables	
	2F	Presentation
	2W	Design Brief
	3F	Design Case
	3W	Trends Report
	4F	Project Proposal

LP	Learning Plan							
	1F	1W	2F	2W	3F	3W	4F	4W
LP	SE	SE	SE	SE	SE	SE	SE	SE
	SE	SE	SE	SE	SE	SE	SE	SE
	SE	SE	SE	SE	SE	SE	SE	SE
	SE	SE	SE	SE	SE	SE	SE	LP

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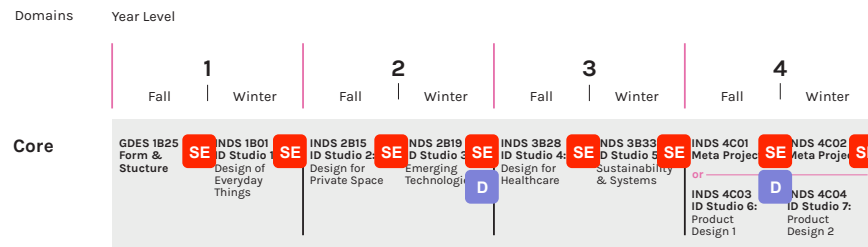
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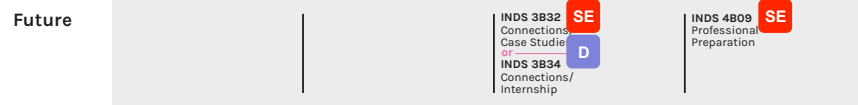
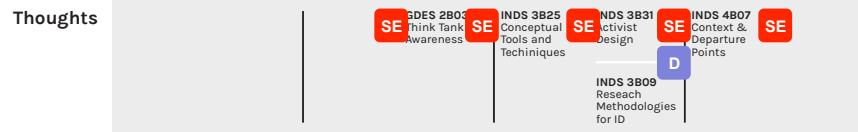
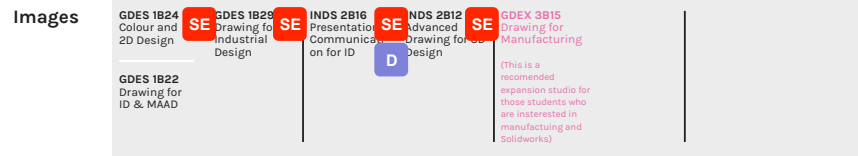
## People



## Resources



All concurrent courses are reinforced within the core studios.



SE Self Evaluation

COURSE	SELF EVALUATION	MARKS
Context of Design	Excellent	95%
Competencies of Design	Excellent	95%
Visual Communication	Excellent	95%
Material Explorations	Excellent	95%
Conceptual Tools and Techniques	Excellent	95%
Activist Design	Excellent	95%
Context & Departure Points	Excellent	95%
Research Methodologies for ID	Excellent	95%
Connections Case Studies	Excellent	95%
Connections/ Internship	Excellent	95%
Professional Preparation	Excellent	95%


D Writing Deliverables

- 2F Presentation
- 2W Design Brief
- 3F Design Case Study
- 3W Trends Report
- 4F Project Proposal

LP Learning Plan

	1F	1W	2F	2W	3F	3W	4F	4W
LP	SE	SE	SE	SE	SE	SE	SE	SE
	SE	SE	SE	SE	SE	SE	SE	SE
	SE	SE	SE	SE	SE	SE	SE	SE
	SE	SE	SE	SE	SE	SE	SE	LP

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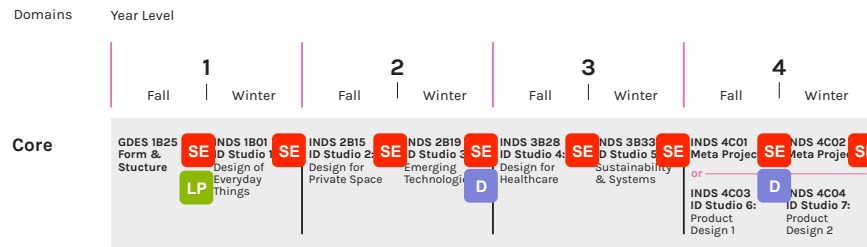
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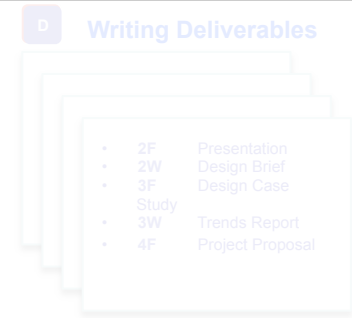
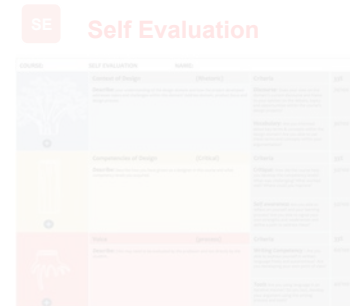
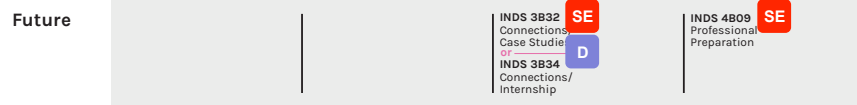
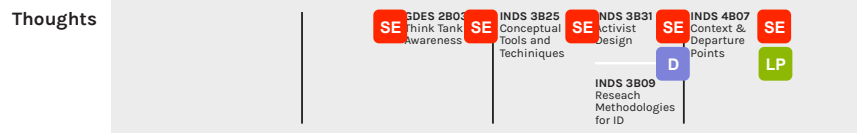
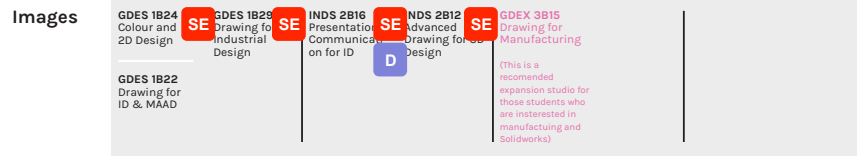
## People



## Resources




All concurrent courses are reinforced within the core studios.



# Safety Issues



# Safety in Workshops



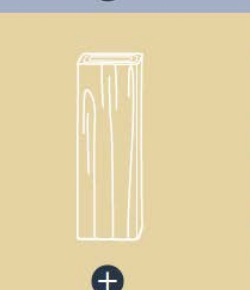
## Context

A landscape of design themes, disciplines and process in which your learning takes place.

**Themes**  
These strategic themes will introduce you to the most promising fields of industrial design.

**Focus**  
Each semester expands your focus of design, from products to interactive product/service/systems.

**Process**  
An iterative multi-stage process that provides structure and guidance to how you design.



## Competencies


A framework of design competencies & learning outcomes that defines your learning.

**Domains**  
Domains provide a thematic clustering of your industrial design competencies.

**Competencies**  
Knowledge, skills and behaviors that you must master in specific context or performance areas.

**Competency Levels**  
You must develop five levels before a competency is fully mastered.

**Program Competencies**  
These are named 'meta' because they involve you at a higher abstraction level.




## Curriculum

A didactic structure that enables a student to learn Industrial Design.


**Program**  
Industrial Design is a four-year program that comprises of a series of interrelated courses.

**Courses**  
A 12-week series of classes in which you develop competency levels in a specific domain.

**Progression**  
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## People



## Resources

Domains	Year Level							
	1		2		3		4	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
Core	GDES 1B25 Form & Structure	INDS 1B01 ID Studio 1: Design of Everyday Things	INDS 2B15 ID Studio 2: Design for Private Space	INDS 2B19 ID Studio 3: Emerging Technologies	INDS 3B28 ID Studio 4: Design for Healthcare	INDS 3B33 ID Studio 5: Sustainability & Systems	INDS 4C01 Meta Project 1 or INDS 4C03 ID Studio 6: Product Design 1	INDS 4C02 Meta Project 2 or INDS 4C04 ID Studio 7: Product Design 2
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Images	GDES 1B24 Colour and 2D Design  GDES 1B22 Drawing for ID & MAAD	GDES 1B29 Drawing for Industrial Design	INDS 2B16 Presentation & Communication for ID	INDS 2B12 Advanced Drawing for 3D Design	GDEX 3B15 Drawing for Manufacturing  (This is a recommended expansion studio for those students who are interested in manufacturing and Solidworks)			
Objects	INDS 1B02 Material Explorations 1  GART 1B70 Creative Process: Art & Code	INDS 2B17 Material Explorations 2	INDS 2B18 Material Explorations 3					
Thoughts			GDES 2B03 Think Tank 1: Awareness	INDS 3B25 Conceptual Tools and Techniques	INDS 3B31 Activist Design		INDS 4B07 Context & Departure Points	
					INDS 3B09 Research Methodologies for ID			
Future					INDS 3B32 Connections/Case Studies or INDS 3B34 Connections/Internship		INDS 4B09 Professional Preparation	

# Safety in Workshops




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	GART 1B70 Creative Process: Art & Code			

Thoughts		GDES 2B03 Think Tank 1: Awareness	INDS 3B25 Conceptual Tools and Techniques	INDS 3B31 Activist Design	INDS 4B07 Context & Departure Points
				INDS 3B09 Research Methodologies for ID	

Future			INDS 3B32 Connections/Case Studies or INDS 3B34 Connections/Internship	INDS 4B09 Professional Preparation
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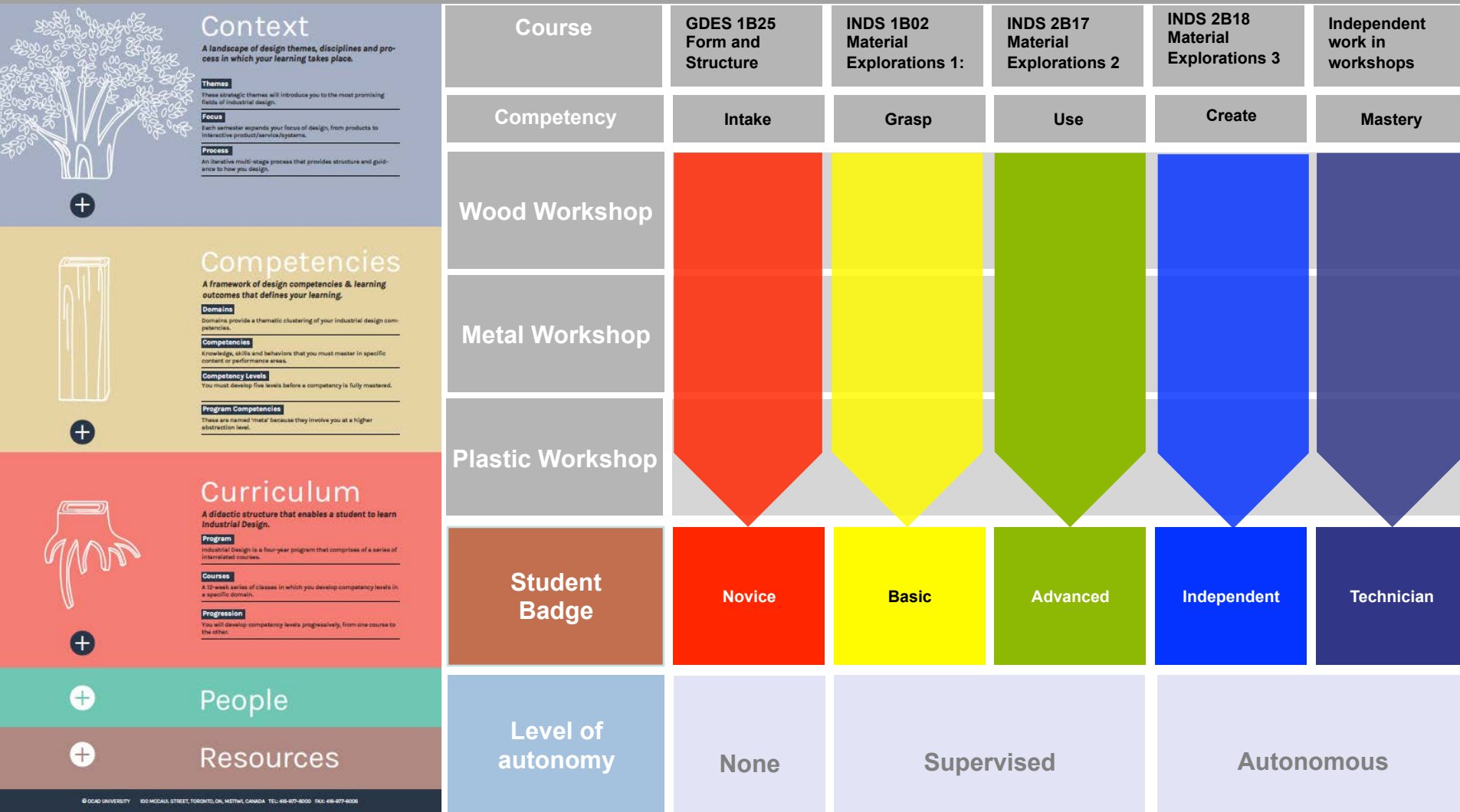
Fabrication & Safety

Wood Workshop


Metal Workshop

Plastic Workshop

# Safety in Workshops: Fabrication



# Safety in Workshops: Fabrication



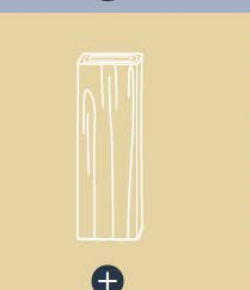
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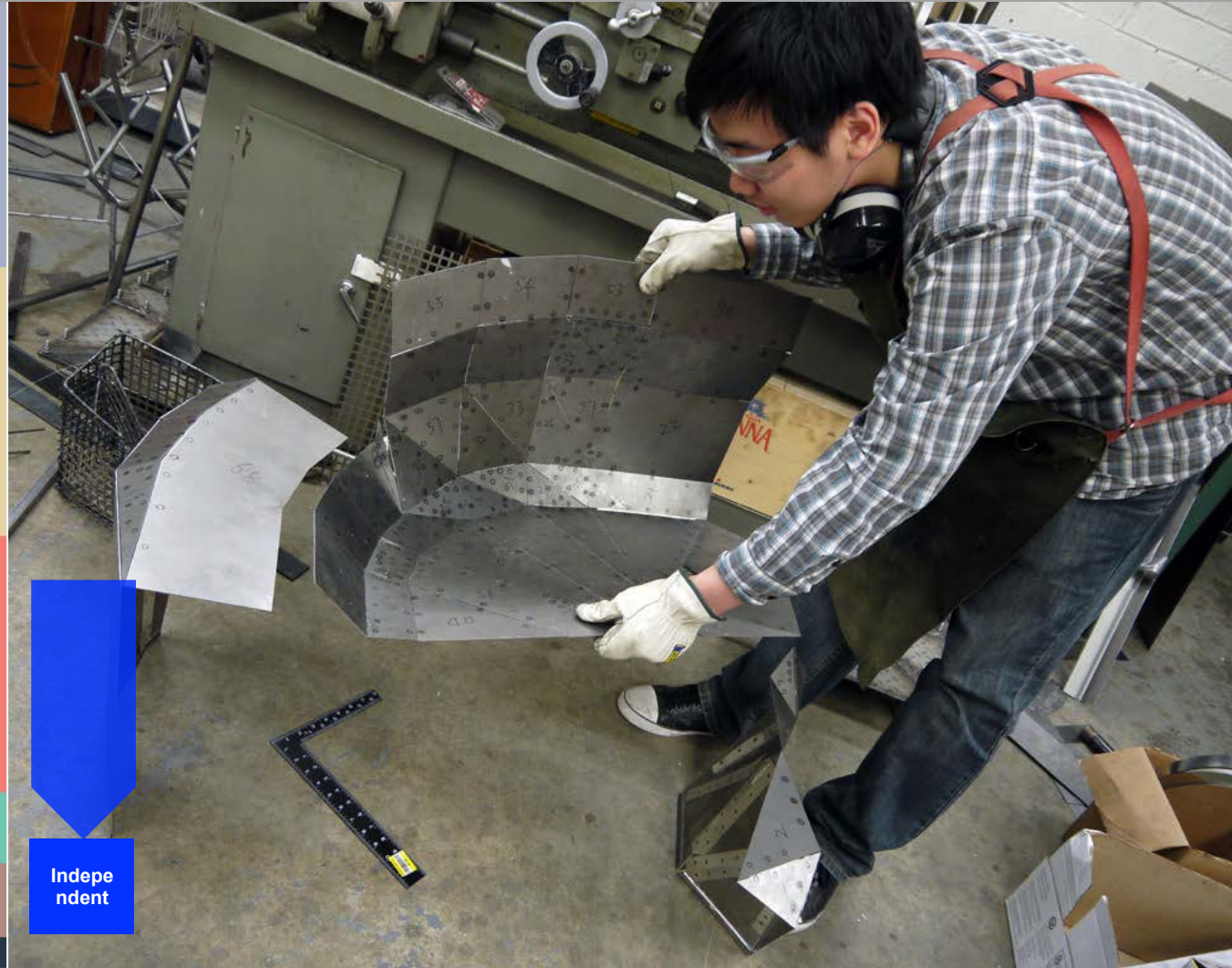


## Resources



Independent

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# Discussion

