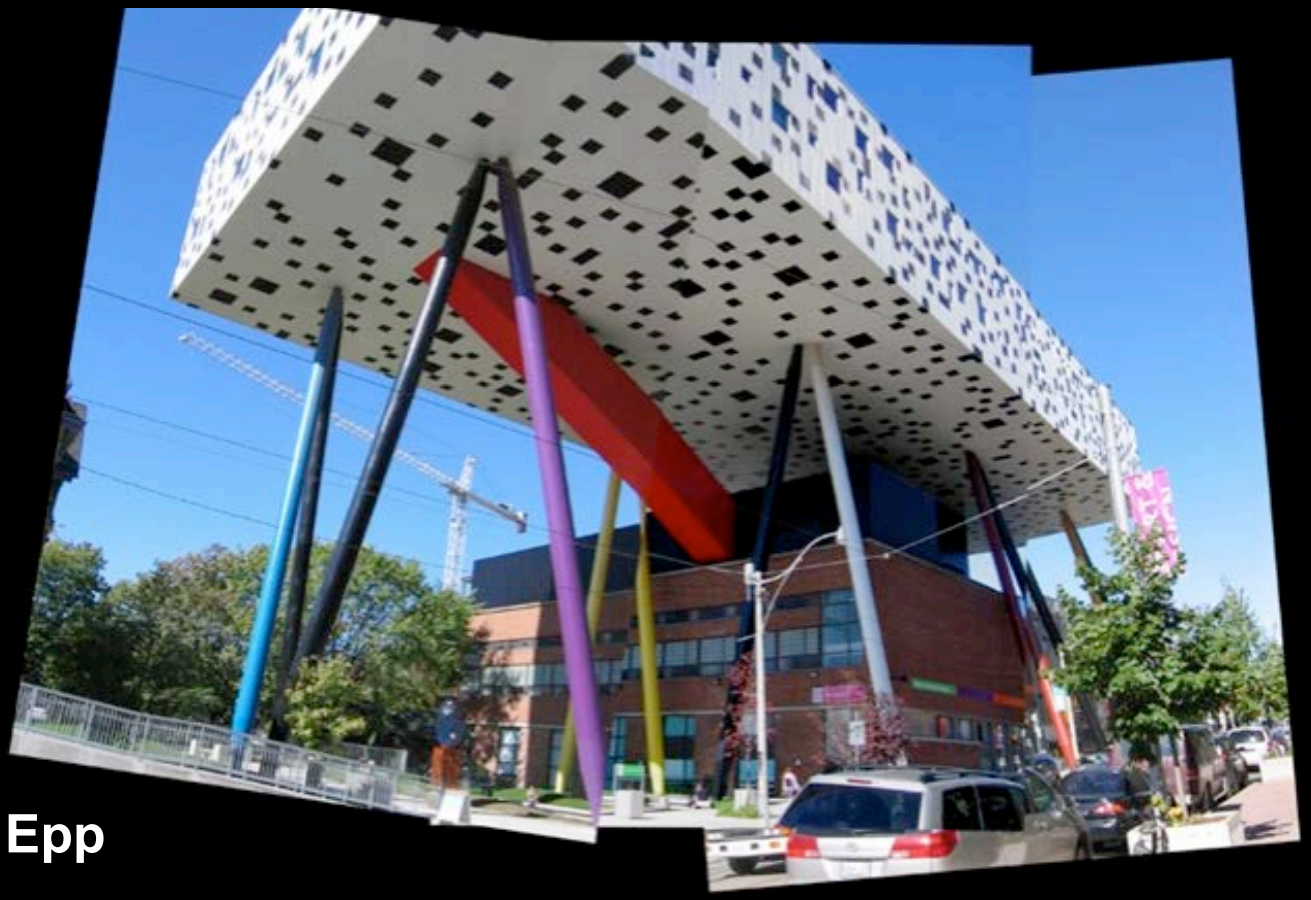
Learning Outcomes of Design

In Action



16th 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’.

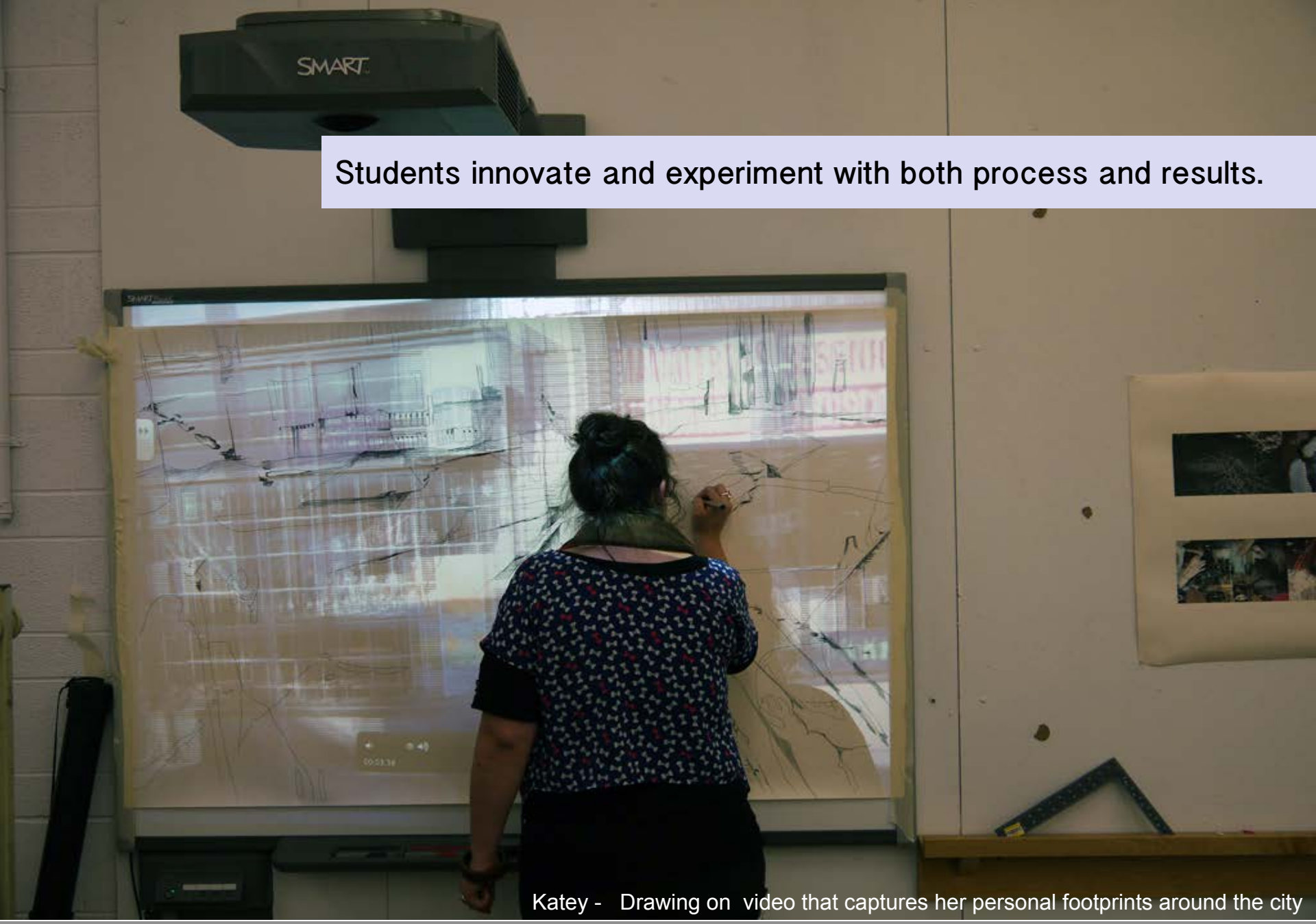
Jessica - Self-portrait on canvas

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

Jess - Dripping paints to create an action painting

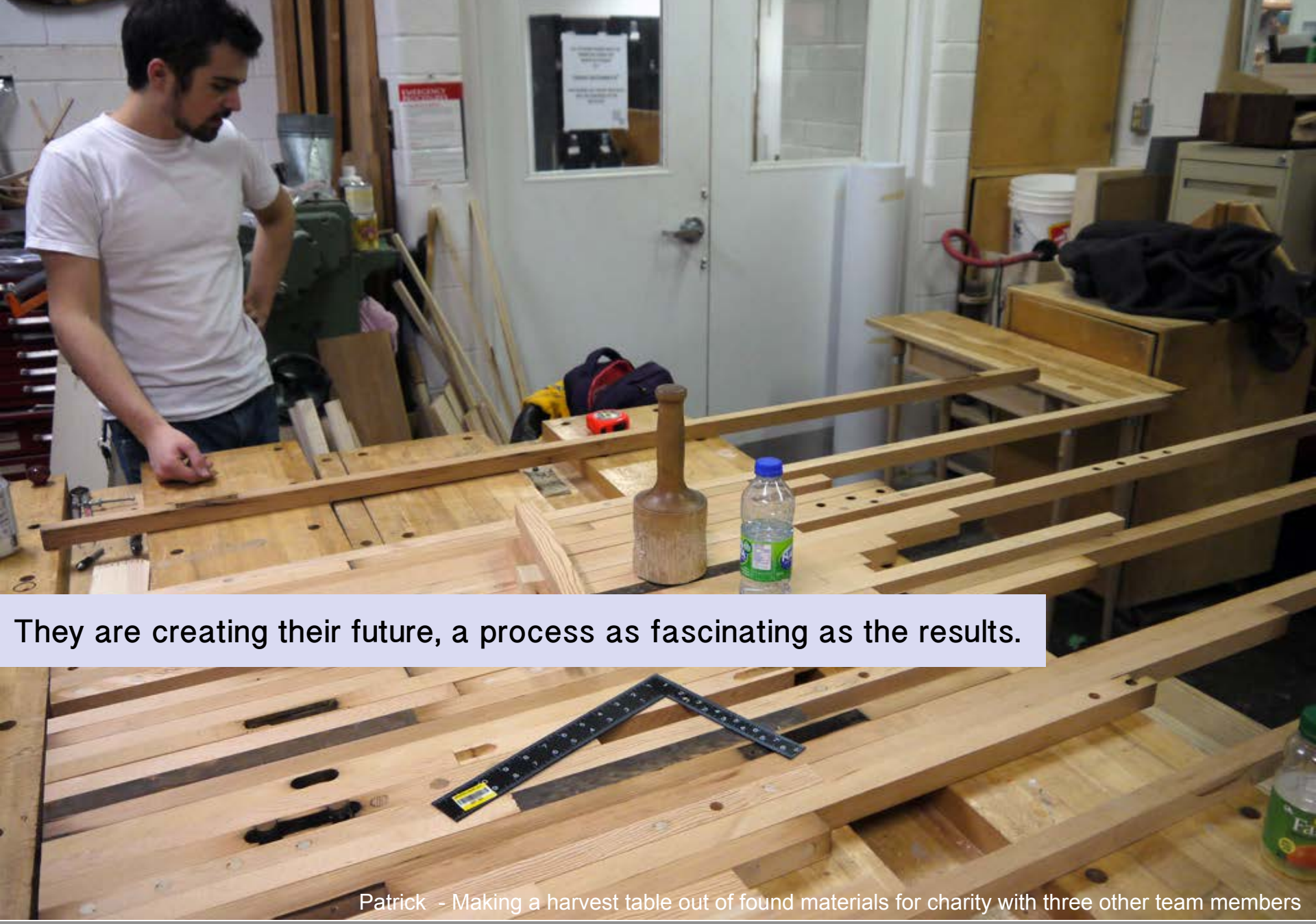
They learn in a ‘hands on’ way to think through complex problems.

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

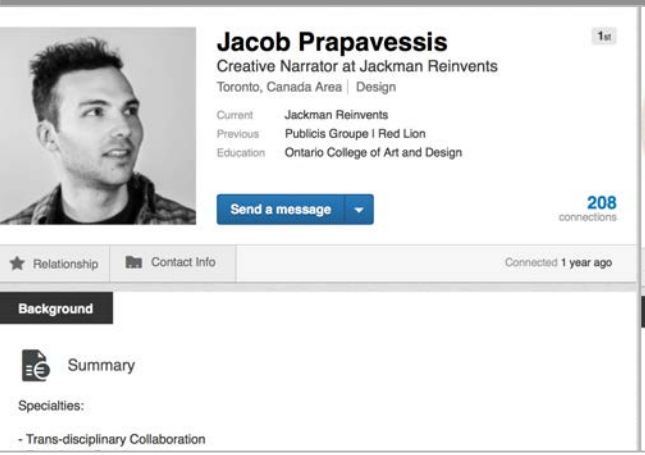
How do you evaluate these kind of projects?

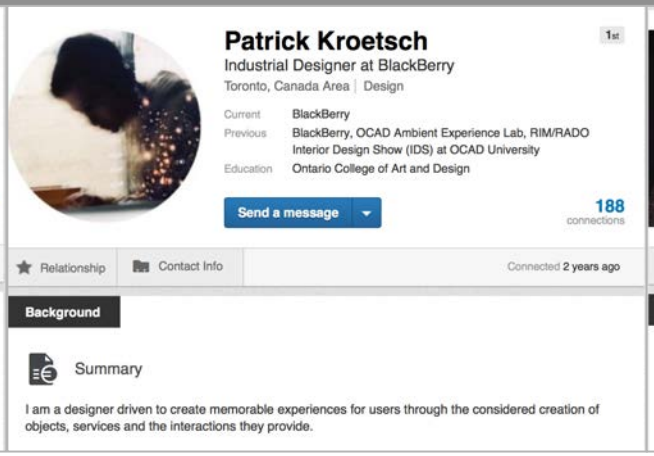
Future Jobs

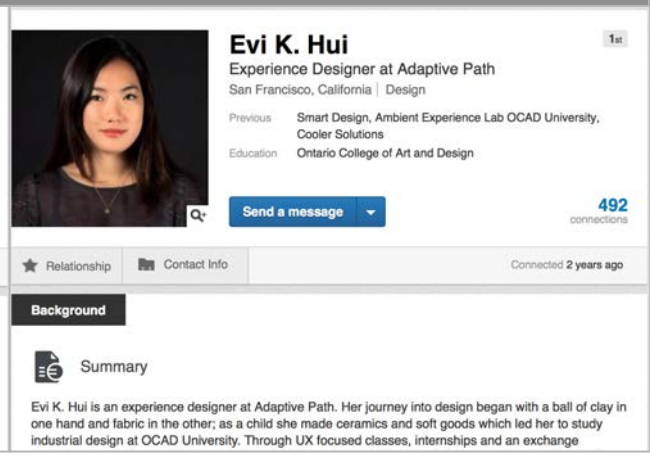
In our fast changing society, it is unclear what jobs will exist when design students will enter the labor market.

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

Future Jobs







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.

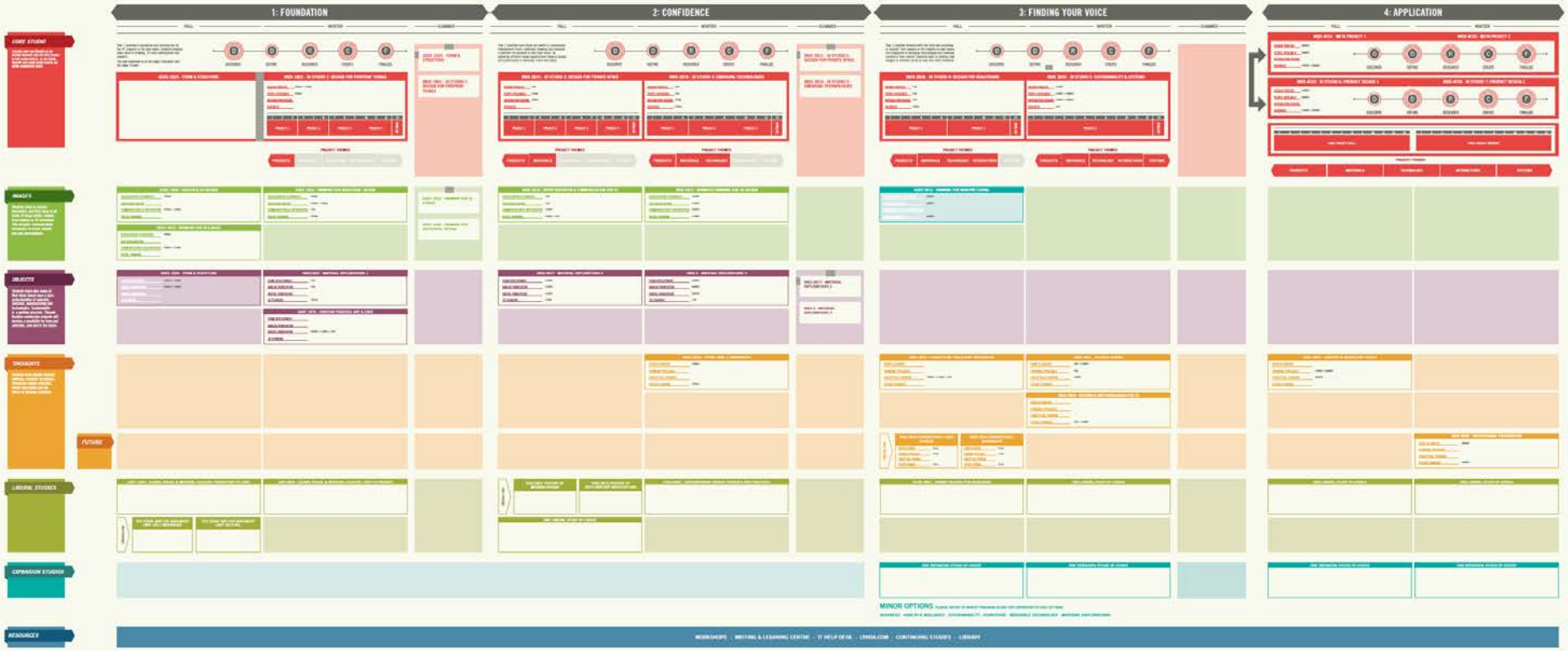
Competencies & **measurement**

Acknowledging the uniqueness of design , design competencies include learning outcomes in both the cognitive, psycho motor 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.

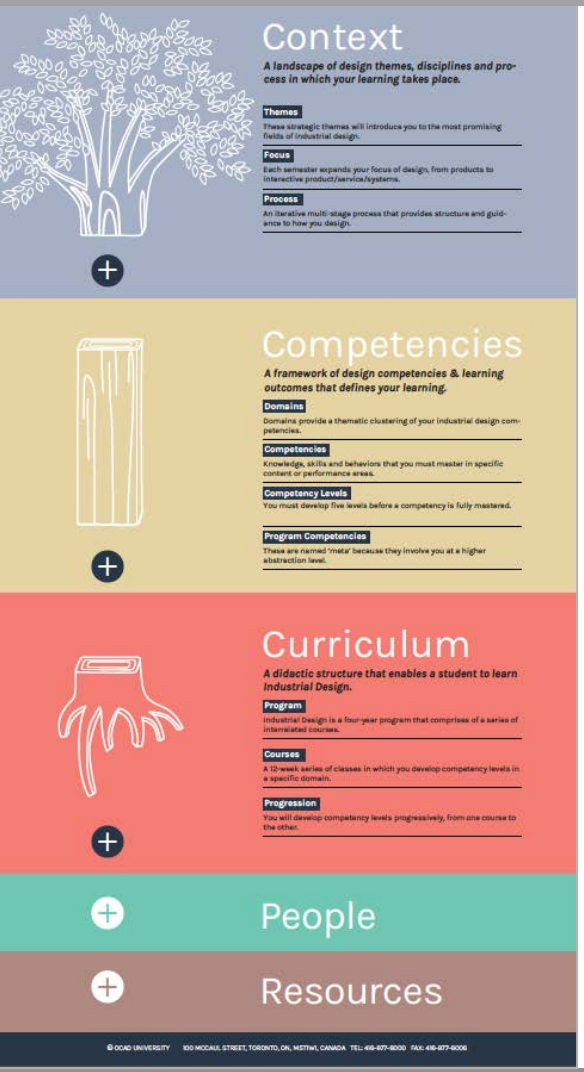
ID Curriculum Map



OCAD ID WWW

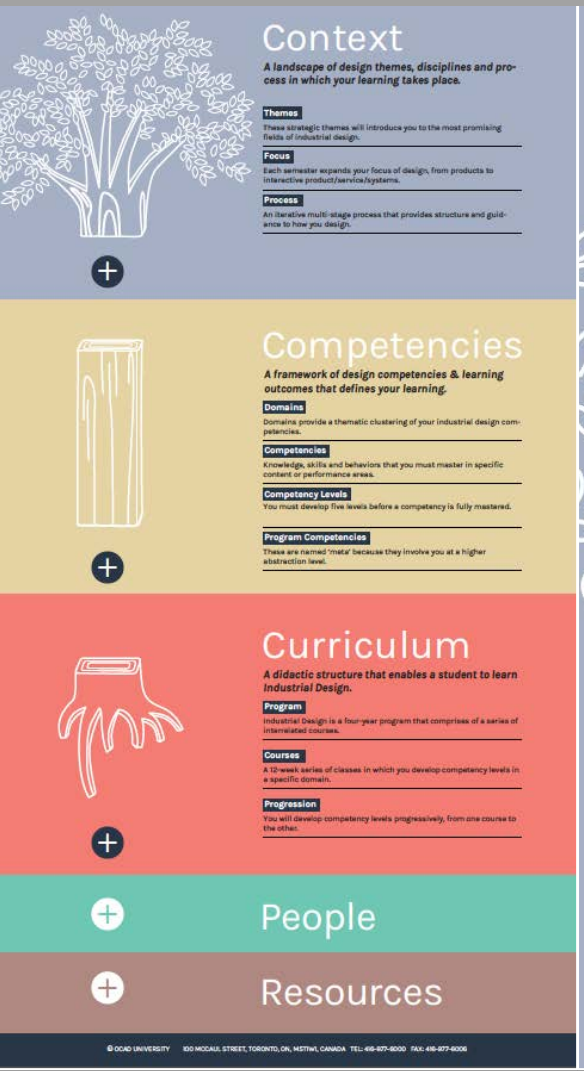
The following slides present the learning outcome taxonomy implemented in a student facing website.

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 '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
You will develop competency levels progressively, from one course to the other.
People
Resources
© OCAD UNIVERSITY 100 MCCAUL STREET, TORONTO, ON, M5T1W1, CANADA TEL: 416-977-6000 FAX: 416-977-6006

www

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



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

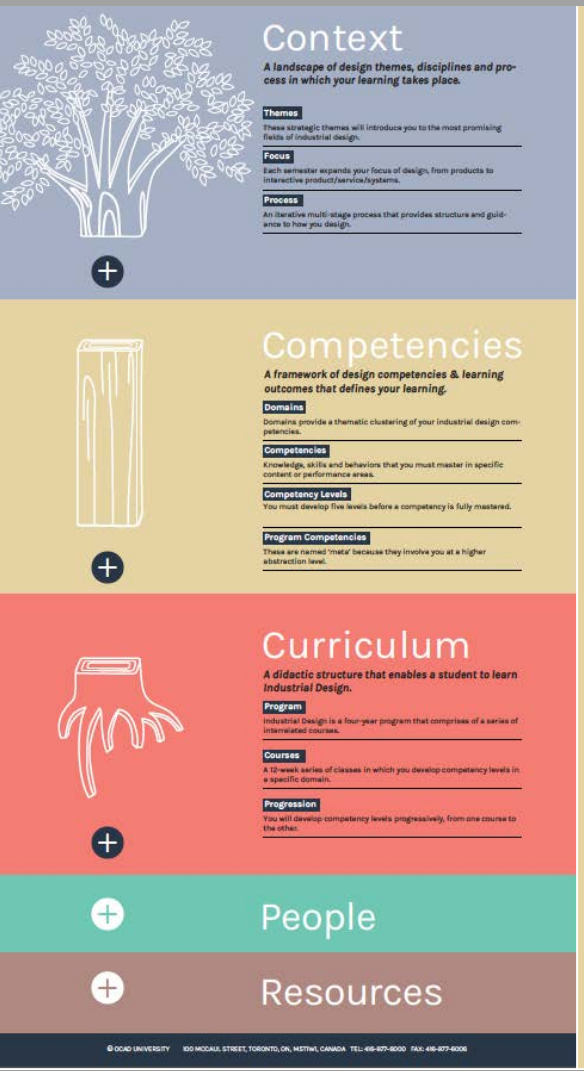
Each semester expands your focus of design, from products to interactive product/service/systems.

Process

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

www

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



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

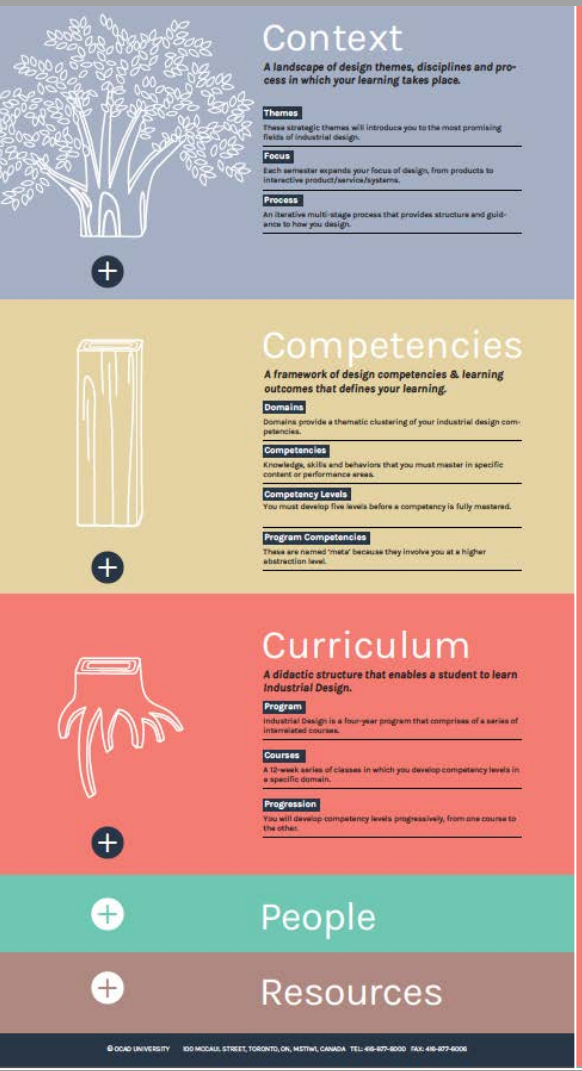
You must develop five levels before a competency is fully mastered.

Program Competencies

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

www

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



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.

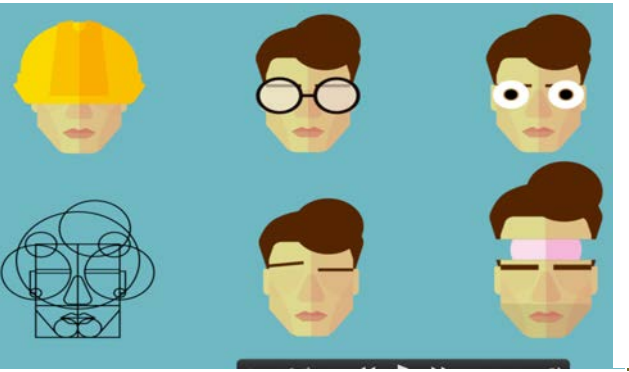
Courses

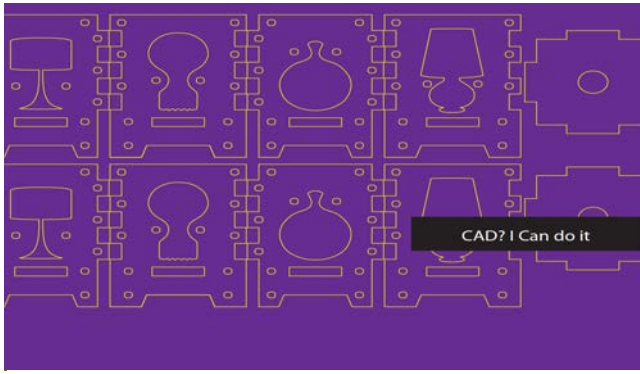
A 12-week series of classes in which you develop competency levels in a specific domain.

Progression

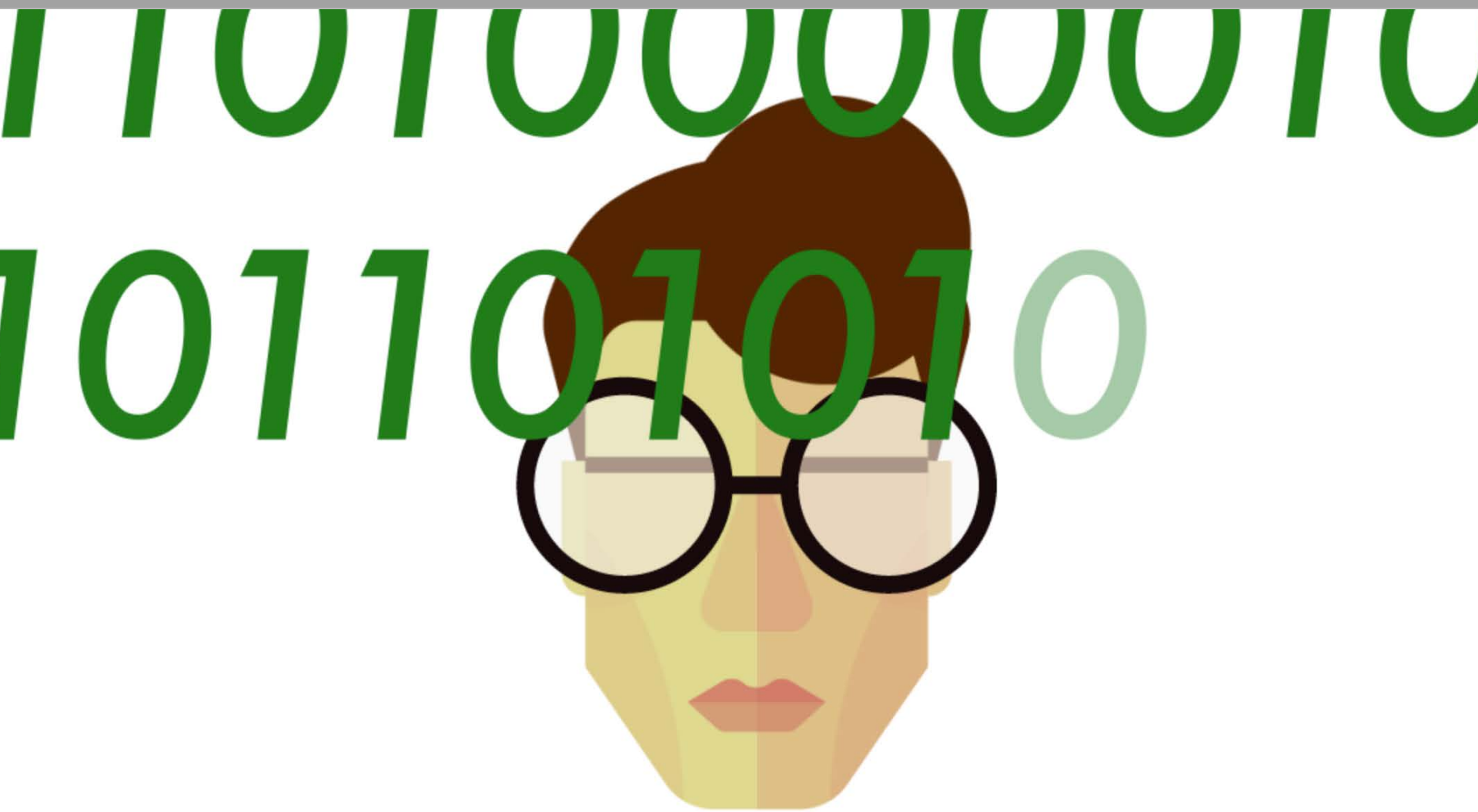
You will develop competency levels progressively, from one course to the other.

Students Understanding of Learning



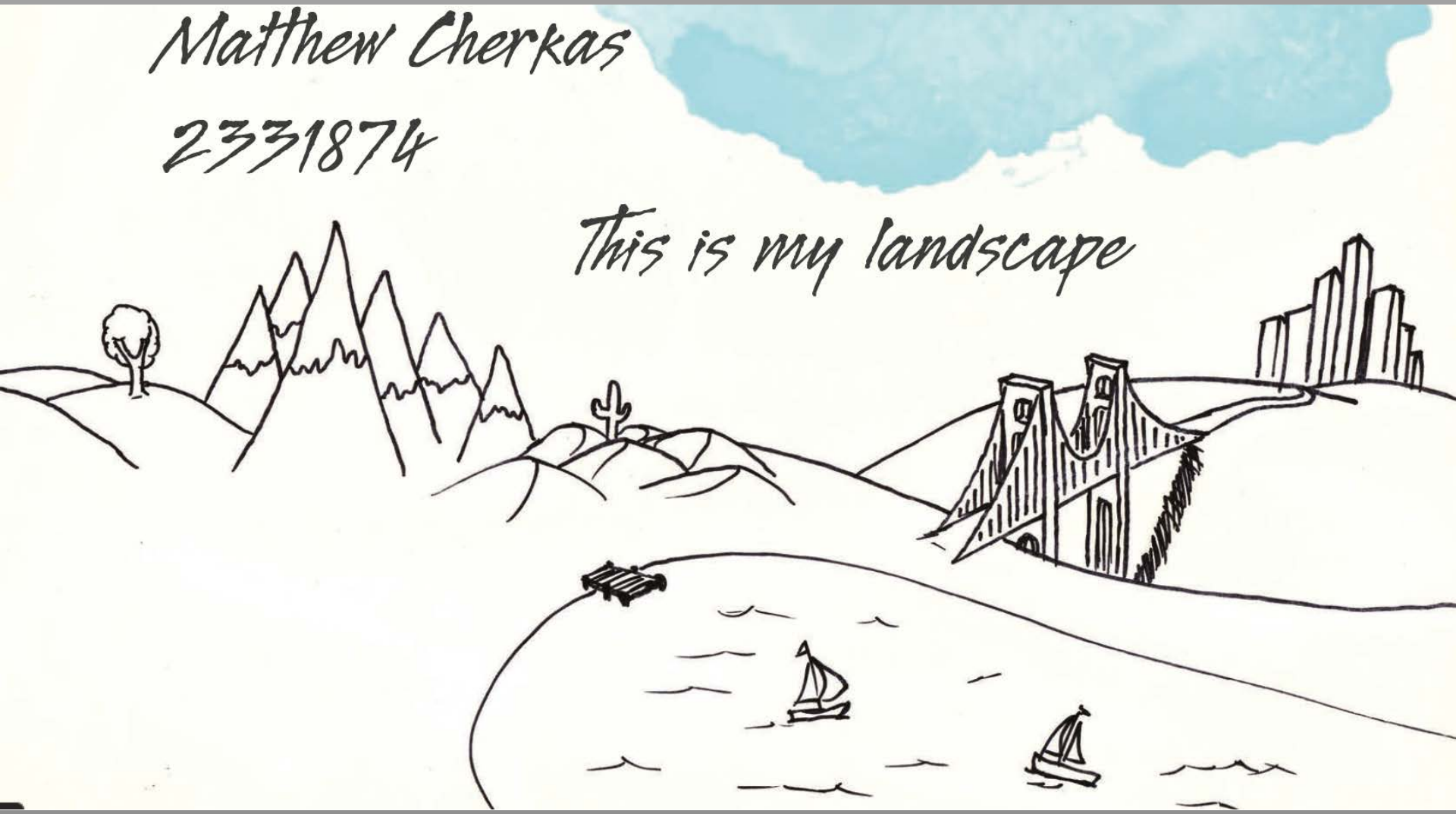


Students Understanding of Learning



Students Understanding of Learning

Students Understanding of Learning

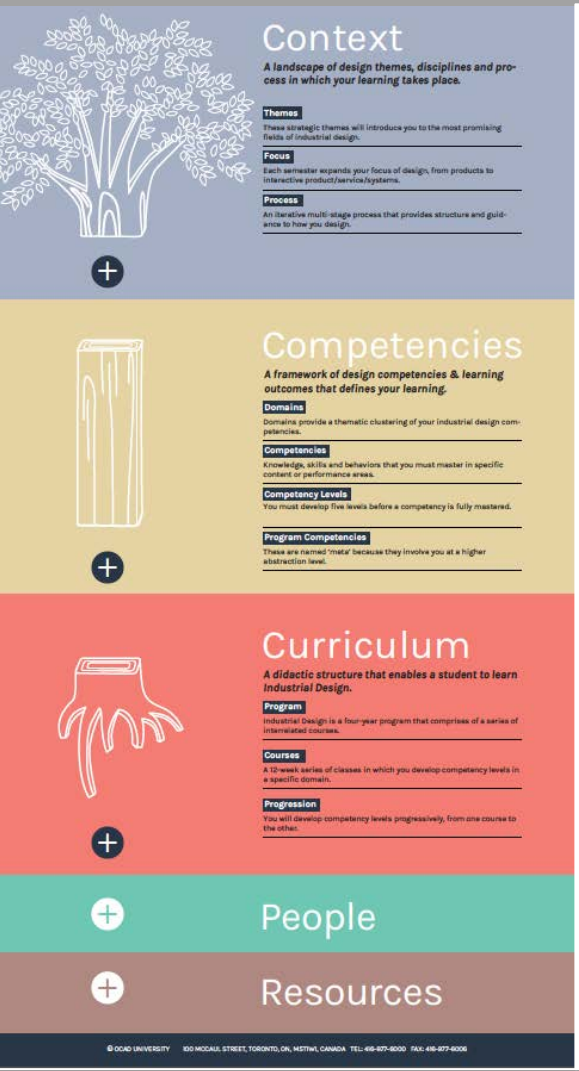


Learning Outcomes in action

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.

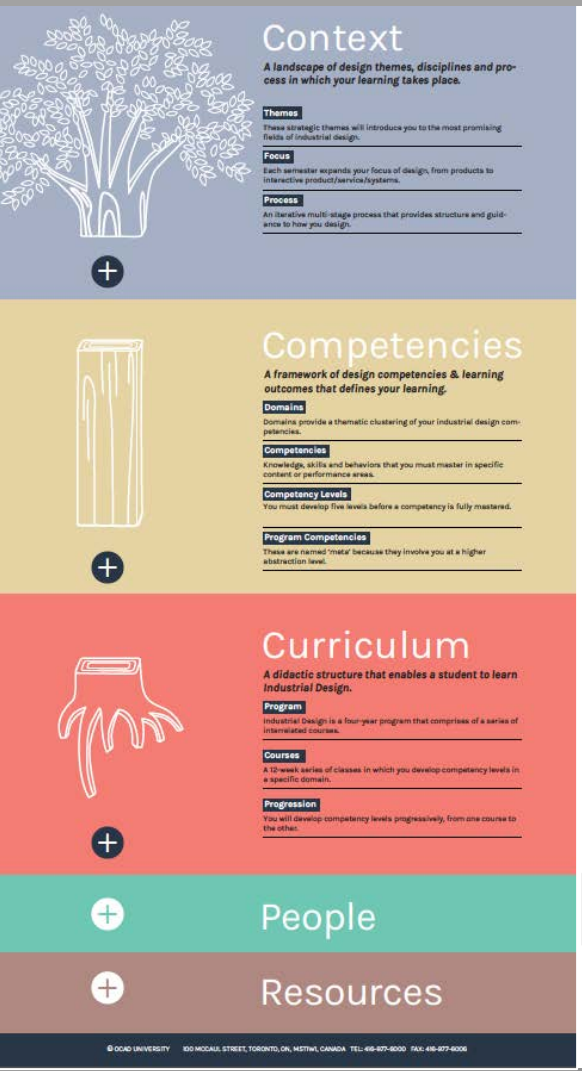
Competency Profiles

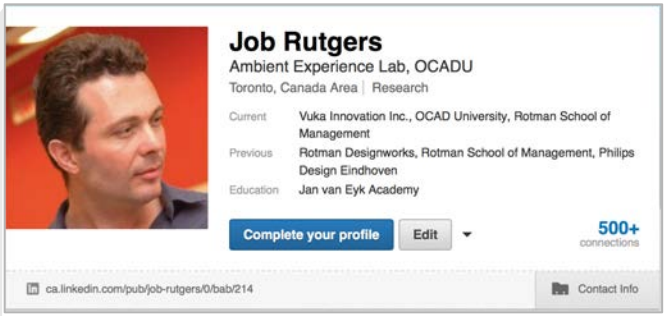
Faculty Competency Profiles

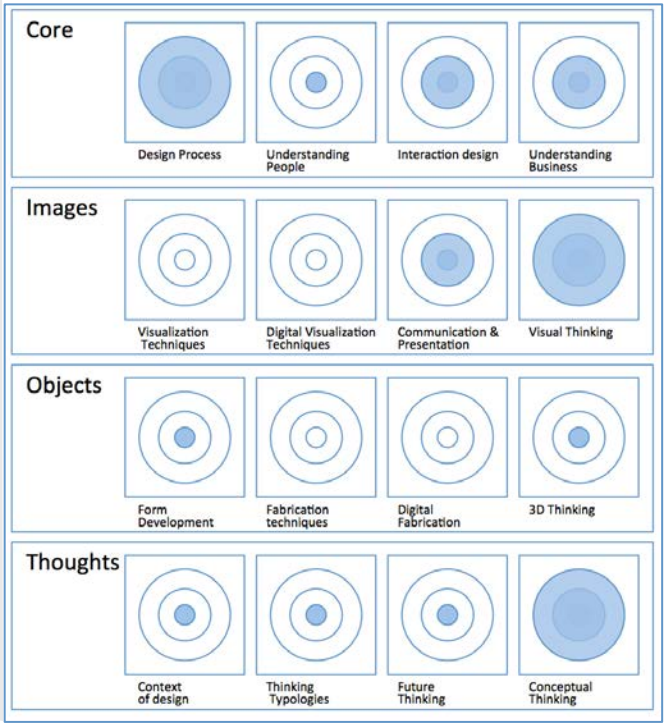


	Name	CV	Competency Profile
A	Avery, Joshua	●	
B	Belcher, Brett	●	●
C	Campbell, Mark	●	●
	Coppin, Peter	●	
	Croteau, Dianne	●	●
D	Dywan, Beverly	●	●
E	Epp, Paul	●	●
G	Garvin, Richard		
	Goss, Jules	●	
H	Hejazi, Bahar Mousavi	●	●
J	Jones, Janet	●	●
K	Keller, Miles	●	●
	Kuisma, John	●	●

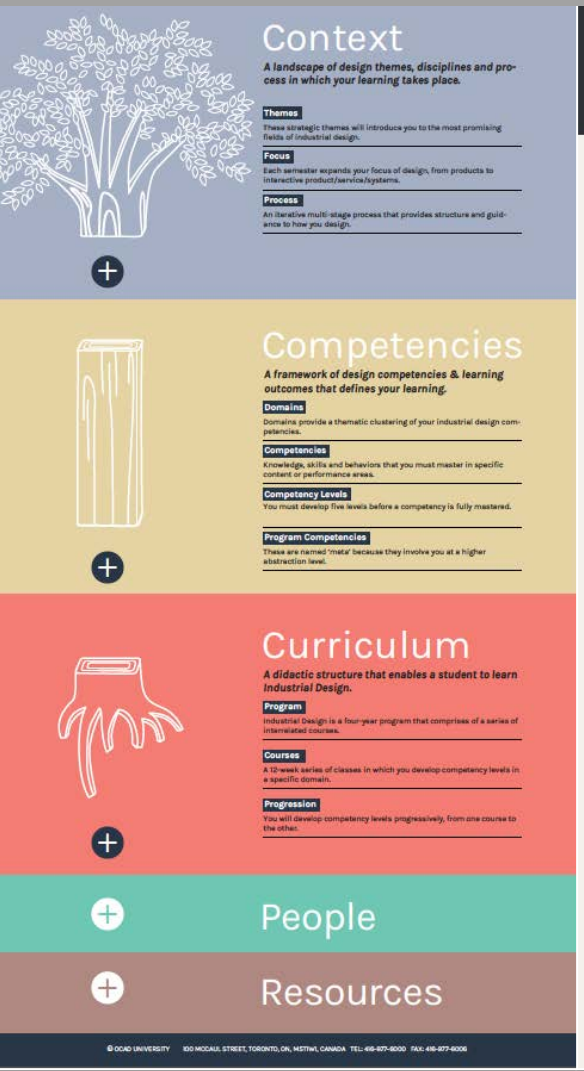
Faculty Competency Profiles

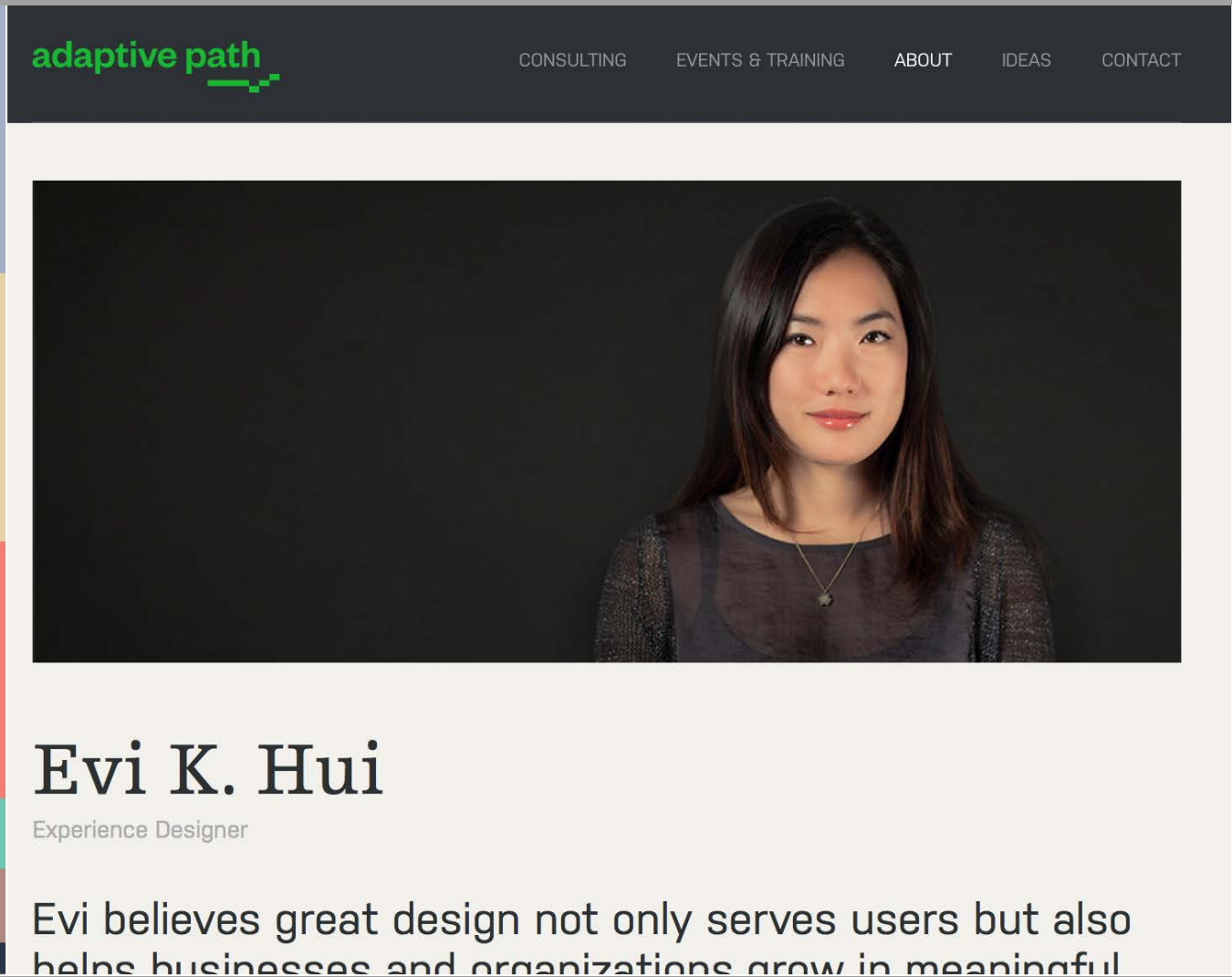






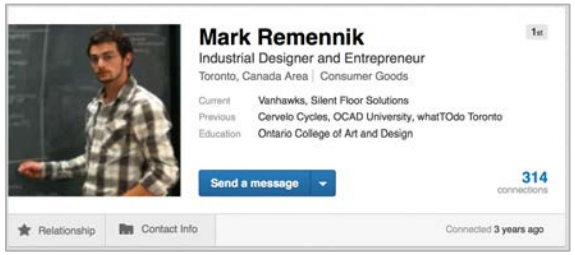
Alumni Profiles

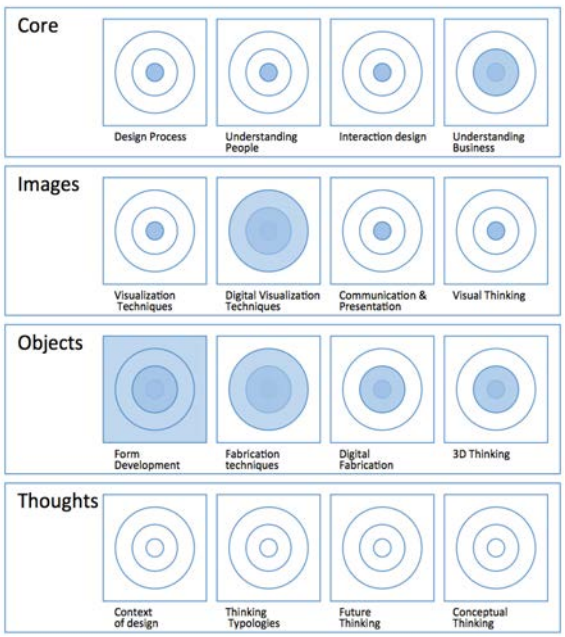




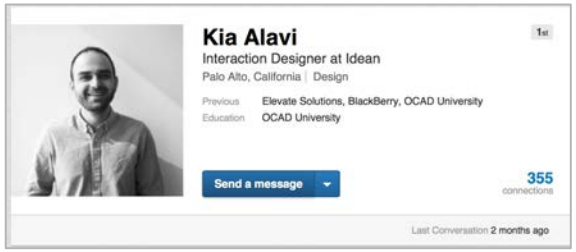
Alumni Profiles: career tracks

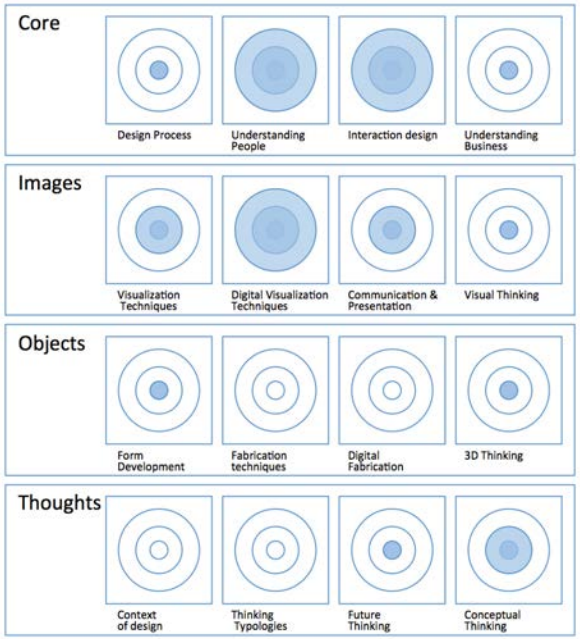
Industrial Designer



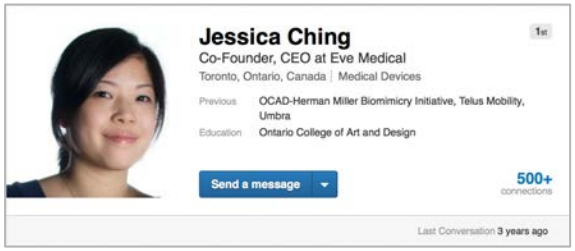


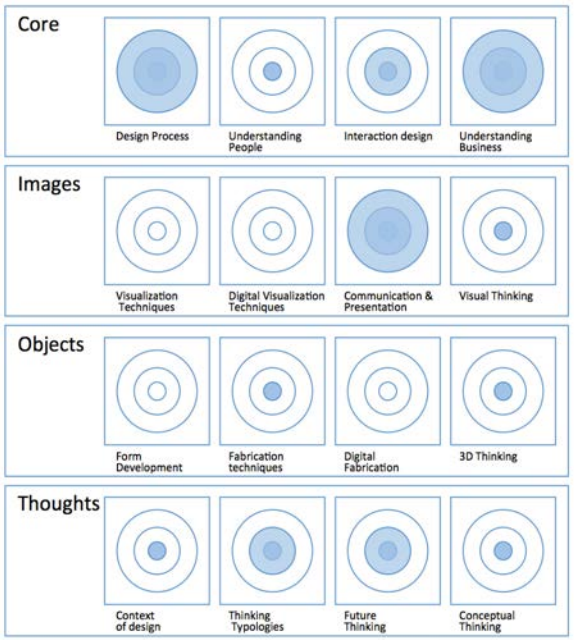
Interaction Designer



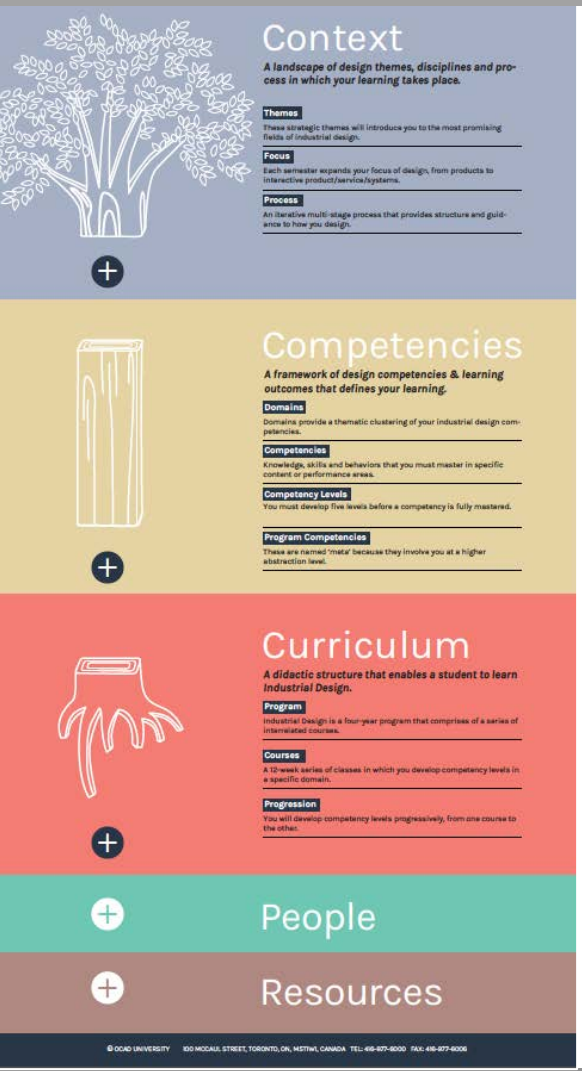


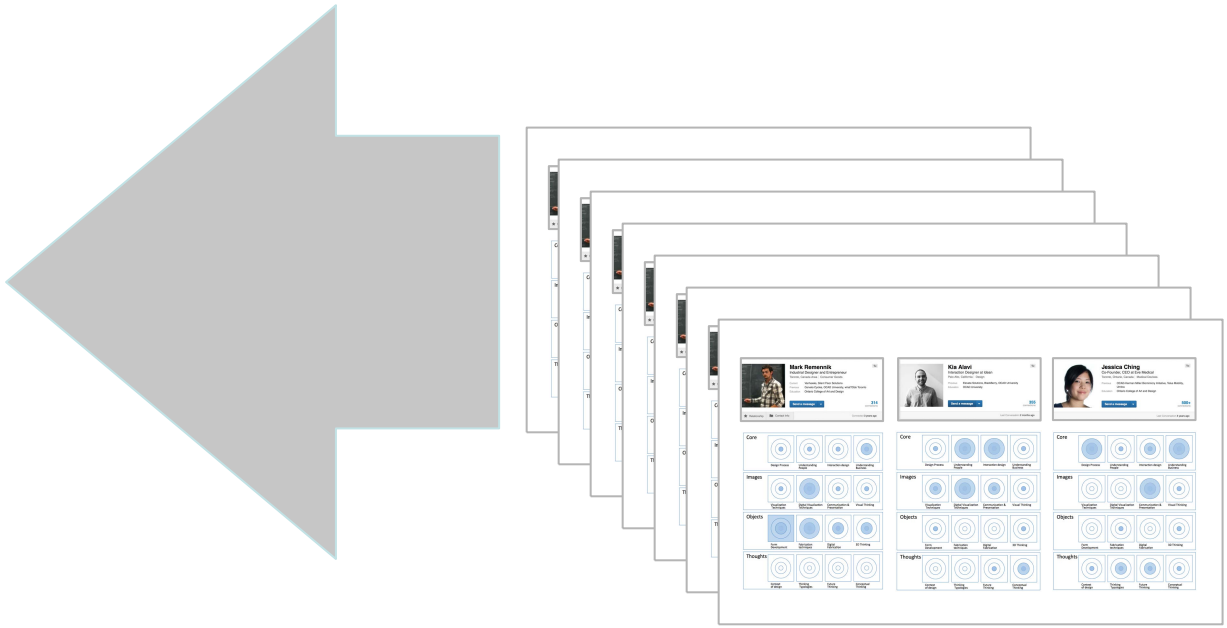
Entrepreneur



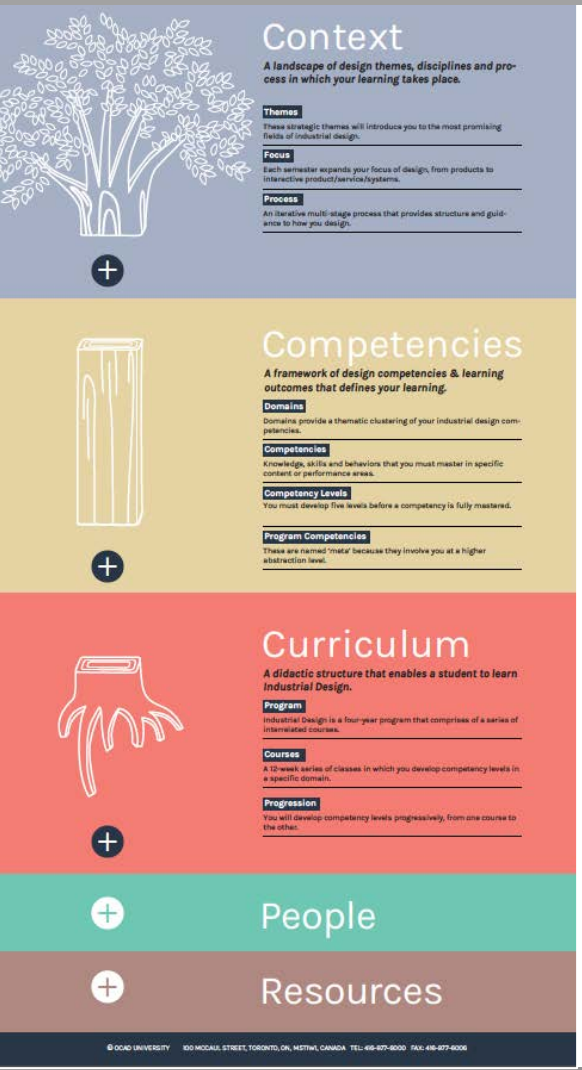


Review Curriculum



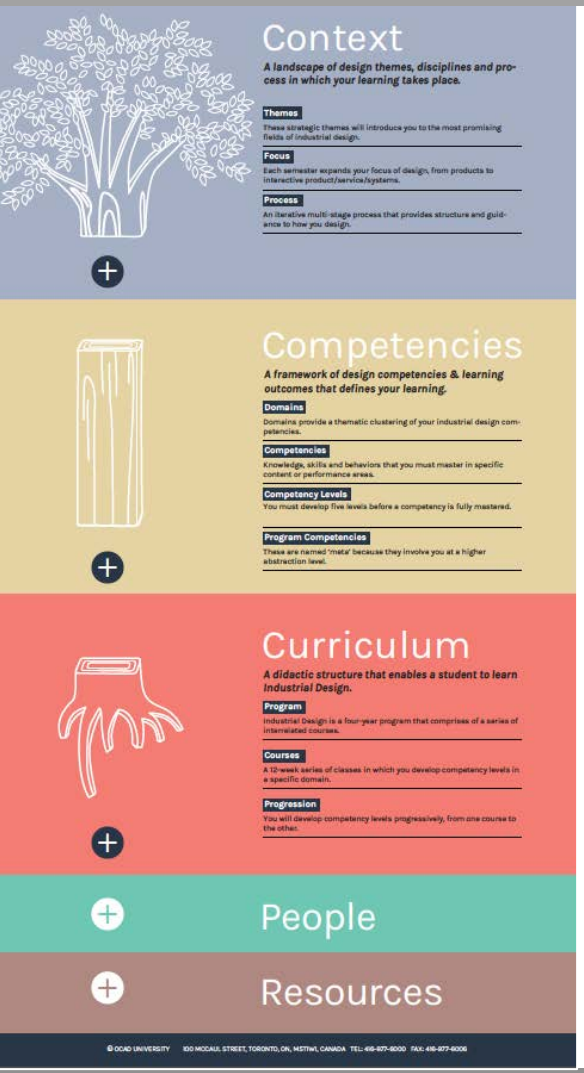


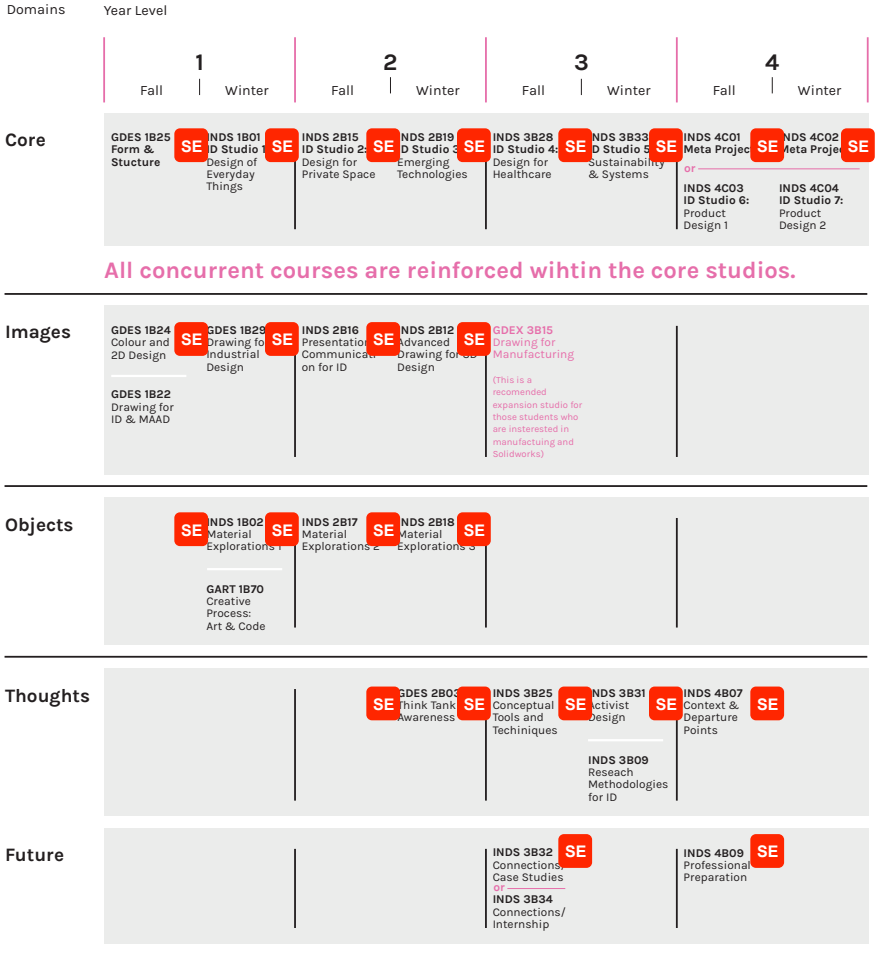
E.g. “writing” in ID (ref. DiPietro)

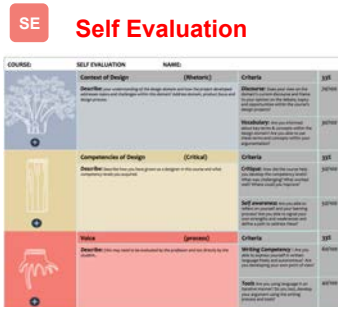


Domains	Year Level							
	1		2		3		4	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
Core	**GDES 1B25** Form & Stucture	**INDS 1B01** ID Studio 1: Design of Everyday Things	**INDS 2B15** ID Studio 2: Design for Private Space	**INDS 2B19** ID Studio 3: Emerging Technologies	**INDS 3B28** ID Studio 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 wihtin the core studios.							
Images	**GDES 1B24** Colour and 2D Design **GDES 1B22** Drawing for ID & MAAD	**GDES 1B29** Drawing for Industrial Design	**INDS 2B16** Presentation & Communicati-on for ID	**INDS 2B12** Advanced Drawing for 3D Design	**GDEX 3B15** Drawing for Manufacturing (This is a recomended expansion studio for those students who are insteresting in manufactuing 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 Techiniques	**INDS 3B31** Activist Design **INDS 3B09** Reseach 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”


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 '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
You will develop competency levels progressively, from one course to the other.
People
Resources
© OCAD UNIVERSITY 100 MCAUL STREET, TORONTO, ON, M5T1W1, CANADA TEL: 416-977-6000 FAX: 416-977-6006

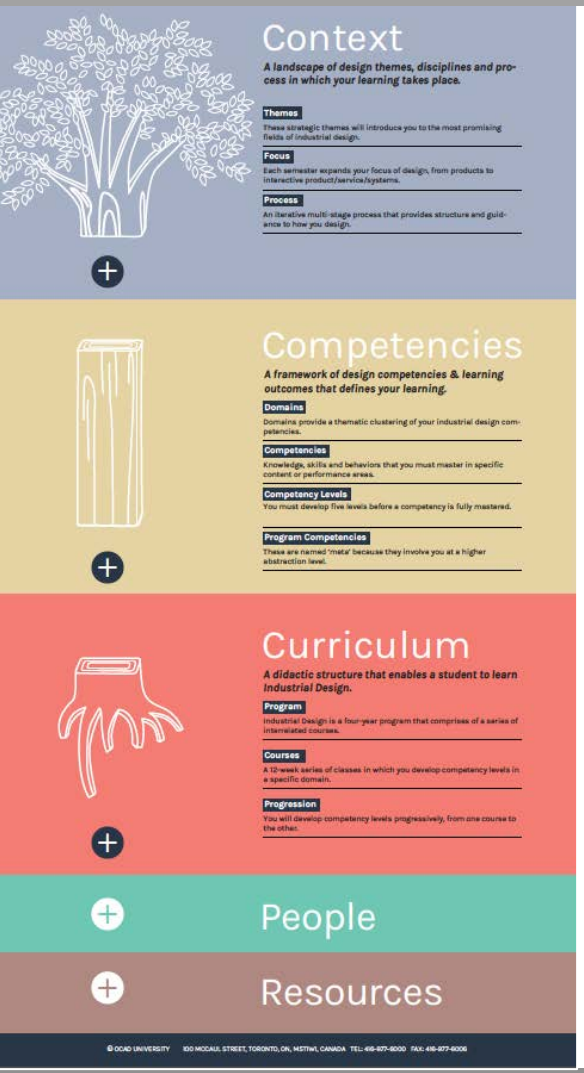

Domains
Year Level
1
Fall
Winter
2
Fall
Winter
3
Fall
Winter
4
Fall
Winter
Core
GDES 1B25 Form & Stucture
SE
INDS 1B01 ID Studio 1 Design of Everyday Things
INDS 2B15 ID Studio 2: Design for Private Space
INDS 2B19 ID Studio 3 Emerging Technologies
INDS 3B28 ID Studio 4: Design for Healthcare
INDS 3B33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

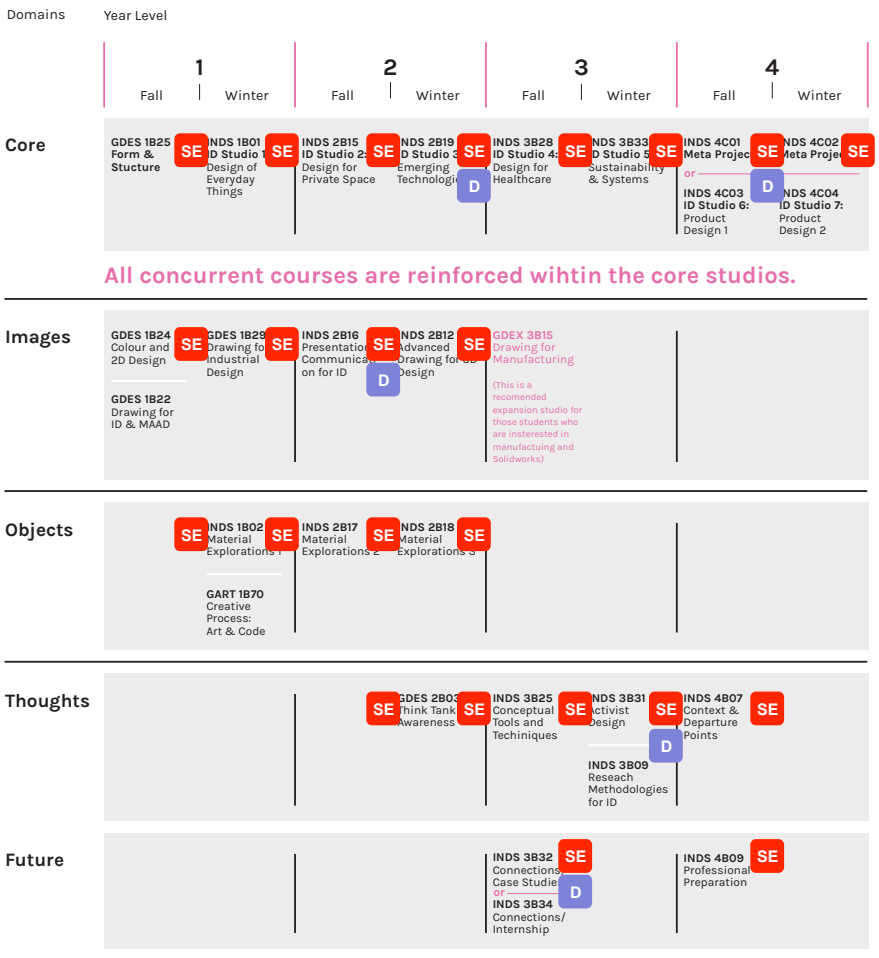

SE
Self Evaluation

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

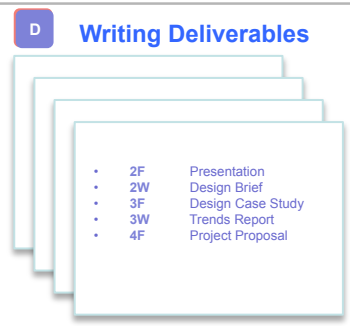
LP
Learning Plan
1F 1W 2F 2W 3F 3W 4F 4W
LP
SE

E.g. “writing”


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 '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
You will develop competency levels progressively, from one course to the other.
People
Resources
© OCAD UNIVERSITY 100 MCAUL STREET, TORONTO, ON, M5T1W1, CANADA TEL: 416-977-6000 FAX: 416-977-6006

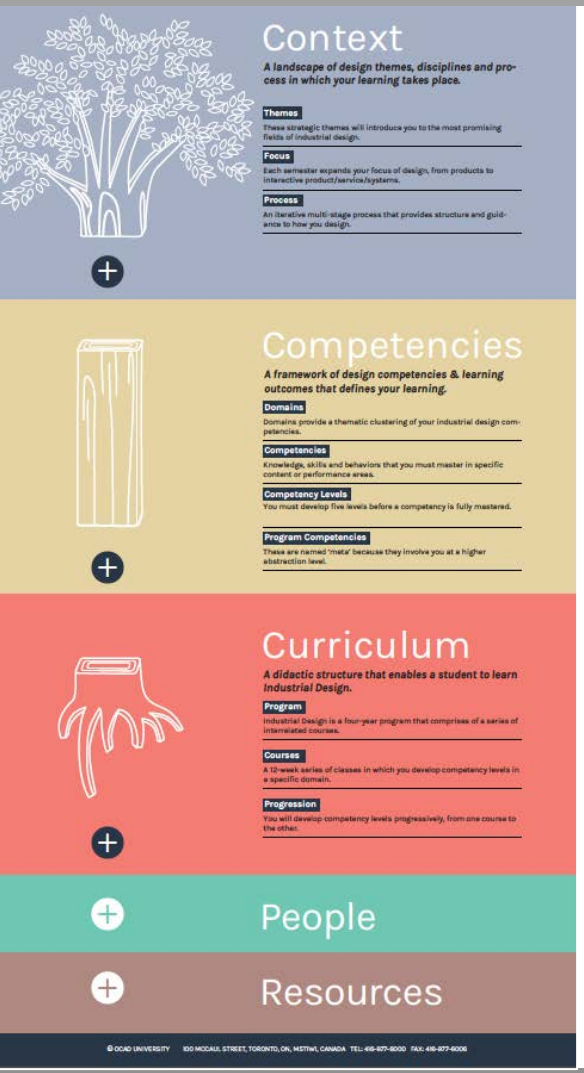

Domains
Year Level
1
Fall
Winter
2
Fall
Winter
3
Fall
Winter
4
Fall
Winter
Core
GDES 1B25 Form & Stucture
INDS 1B01 ID Studio 1 Design of Everyday Things
INDS 2B15 ID Studio 2: Design for Private Space
INDS 2B19 D Studio 3 Emerging Technologi
INDS 3B28 ID Studio 4: Design for Healthcare
INDS 3B33 D Studio 5 Sustainability & Systems
INDS 4C01 Meta Projec
INDS 4C02 eta Proje
or
INDS 4C03 ID Studio 6: Product Design 1
INDS 4C04 ID Studio 7: Product Design 2
SE
D
All concurrent courses are reinforced wihtin the core studios.
Images
GDES 1B24 Colour and 2D Design
GDES 1B22 Drawing for ID & MAAD
GDES 1B29 Drawing fo Industrial Design
INDS 2B16 Presentatio Communica on for ID
INDS 2B12 Advanced Drawing for Design
GDEX 3B15 Drawing for Manufacturing
(This is a recomended expansion studio for those students who are insterested in manufactuing and Solidworks)
Objects
INDS 1B02 Material Explorations
INDS 2B17 Material Explorations 2
INDS 2B18 Material Explorations 3
GART 1B70 Creative Process: Art & Code
Thoughts
GDES 2B03 Think Tank Awareness
INDS 3B25 Conceptual Tools and Techiniques
INDS 3B31 ctivist Design
INDS 3B09 Reseach Methodologies for ID
INDS 4B07 Context & Departure Points
Future
INDS 3B32 Connections Case Studie
or
INDS 3B34 Connections/ Internship
INDS 4B09 Professional Preparation

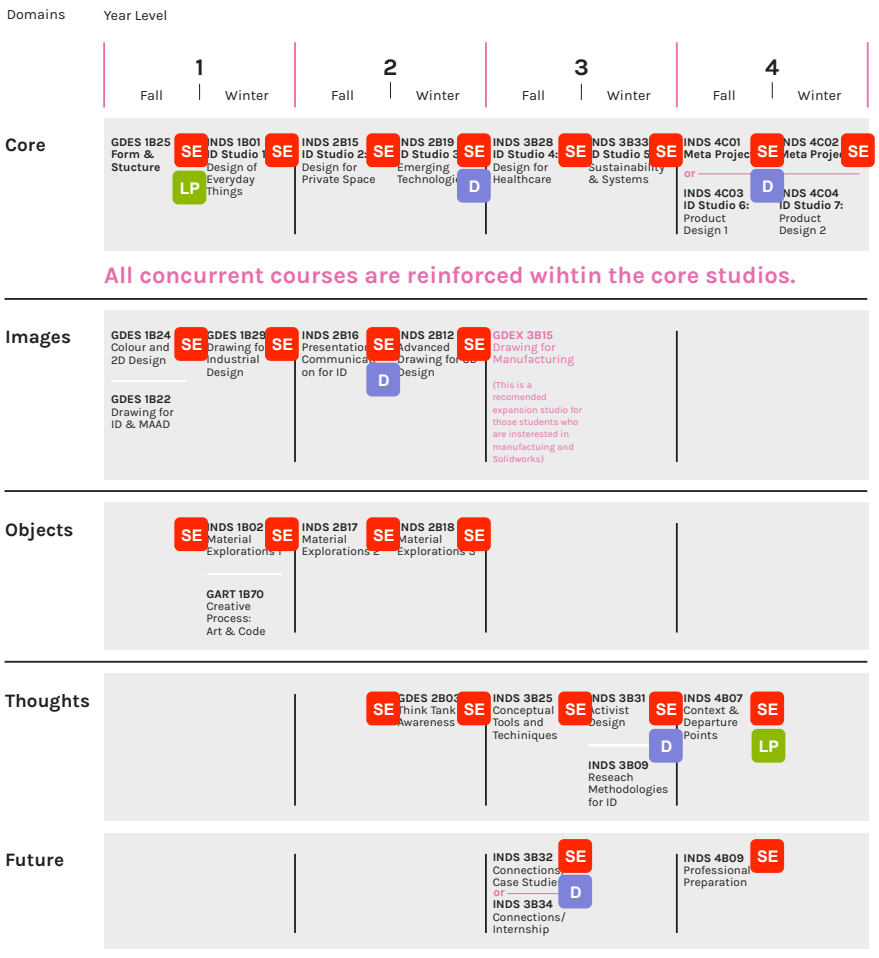
SE
Self Evaluation


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

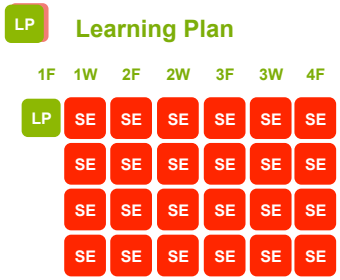
E.g. “writing”


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 '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
You will develop competency levels progressively, from one course to the other.
People
Resources
© OCAD UNIVERSITY 100 MCAUL STREET, TORONTO, ON, M5T1W1, CANADA TEL: 416-977-6000 FAX: 416-977-6006


Domains
Year Level
1
Fall
Winter
2
Fall
Winter
3
Fall
Winter
4
Fall
Winter
Core
GDES 1B25 Form & Stucture
INDS 1B01 ID Studio 1 Design of Everyday Things
INDS 2B15 ID Studio 2: Design for Private Space
INDS 2B19 ID Studio 3 Emerging Technologi
INDS 3B28 ID Studio 4: Design for Healthcare
INDS 3B33 ID Studio 5 Sustainability & Systems
INDS 4C01 Meta Projec
INDS 4C02 Meta Proje
or
INDS 4C03 ID Studio 6: Product Design 1
INDS 4C04 ID Studio 7: Product Design 2
SE
LP
D
All concurrent courses are reinforced wihtin the core studios.
Images
GDES 1B24 Colour and 2D Design
GDES 1B22 Drawing for ID & MAAD
GDES 1B29 Drawing fo Industrial Design
INDS 2B16 Presentatio Communica on for ID
INDS 2B12 Advanced Drawing for Design
GDEX 3B15 Drawing for Manufacturing
(This is a recomended expansion studio for those students who are insterested in manufactuing and Solidworks)
Objects
INDS 1B02 Material Explorations 1
INDS 2B17 Material Explorations 2
INDS 2B18 Material Explorations 3
GART 1B70 Creative Process: Art & Code
Thoughts
GDES 2B03 Think Tank Awareness
INDS 3B25 Conceptual Tools and Techiniques
INDS 3B31 Activist Design
INDS 3B09 Reseach Methodologies for ID
INDS 4B07 Context & Departure Points
Future
INDS 3B32 Connections Case Studie
or
INDS 3B34 Connections/ Internship
INDS 4B09 Professional Preparation

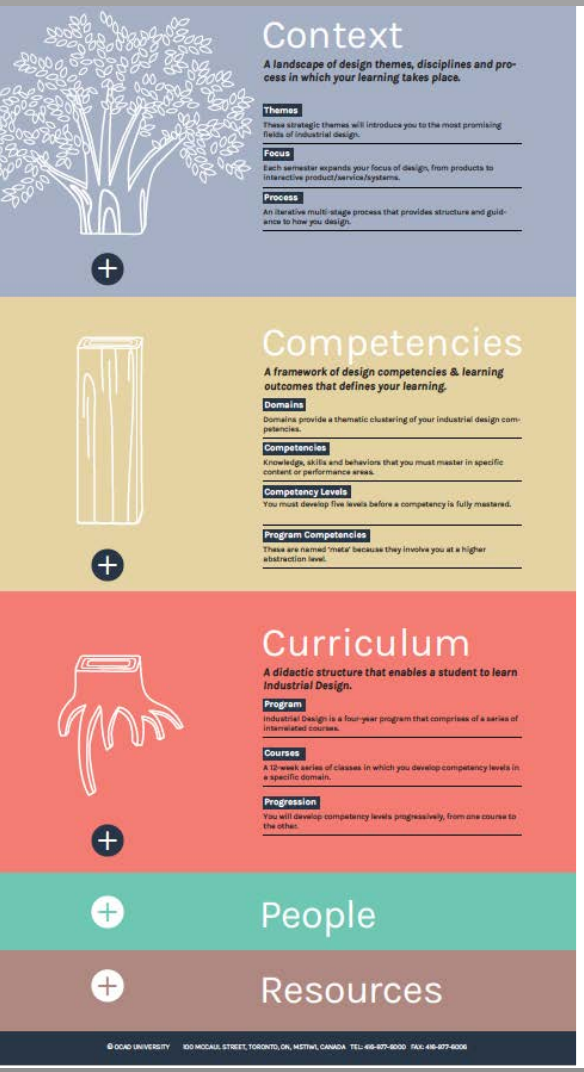
SE
Self Evaluation

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
LP

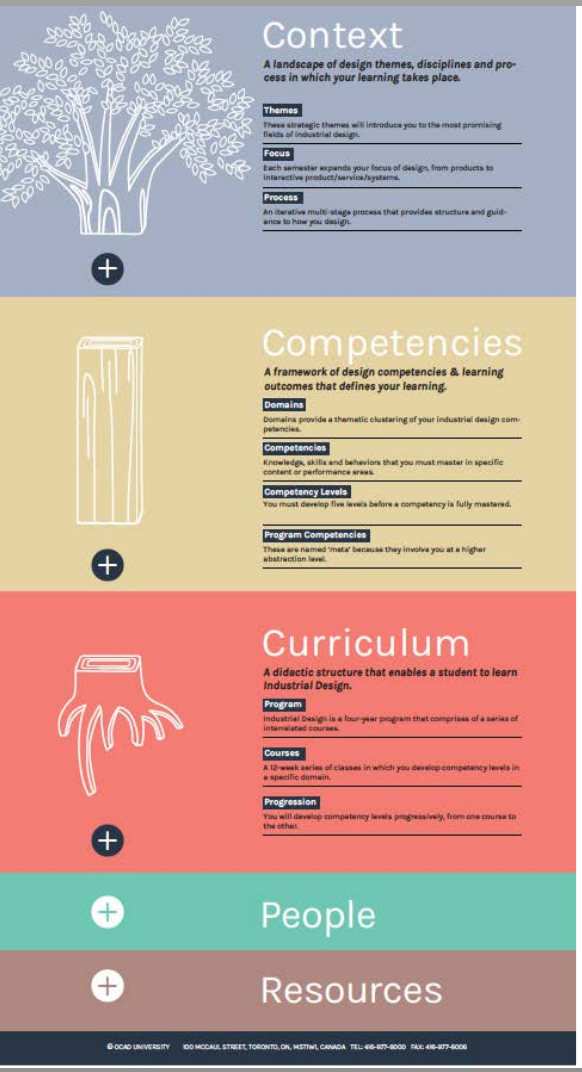
Safety Issues

Safety in Workshops



Domains	Year Level 1 Fall	1 Winter	2 Fall	2 Winter	3 Fall	3 Winter	4 Fall	4 Winter
Core	**GDES 1B25** Form & Stucture	**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 wihtin the core studios.							
Images	**GDES 1B24** Colour and 2D Design **GDES 1B22** Drawing for ID & MAAD	**GDES 1B29** Drawing for Industrial Design	**INDS 2B16** Presentation & Communicati-on for ID	**INDS 2B12** Advanced Drawing for 3D Design	**GDEX 3B15** Drawing for Manufacturing (This is a recomended expansion studio for those students who are insterested in manufactuing 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 Techiniques	**INDS 3B31** Activist Design **INDS 3B09** Reseach Methodologies for ID	**INDS 4B07** Context & Departure Points	
Future					**INDS 3B32** Connections/ Case Studies or **INDS 3B34** Connections/ Internship		**INDS 4B09** Professional Preparation	

Safety in Workshops



Domains	Year Level 1 Fall	1 Winter	2 Fall	2 Winter	3 Fall	3 Winter	4 Fall	4 Winter
Core	GDES 1B25 Form & Stucture	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 wihtin the core studios.							
Images	GDES 1B24 Colour and 2D Design; GDES 1B22 Drawing for ID & MAAD	GDES 1B29 Drawing for Industrial Design	INDS 2B16 Presentation & Communicati-on for ID	INDS 2B12 Advanced Drawing for 3D Design	GDEX 3B15 Drawing for Manufacturing (This is a recomended expansion studio for those students who are insterested in manufactuing 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 Techiniques	INDS 3B31 Activist Design; INDS 3B09 Reseach Methodologies for ID	INDS 4B07 Context & Departure Points	
Future					INDS 3B32 Connections/ Case Studies or INDS 3B34 Connections/ Internship		INDS 4B09 Professional Preparation	

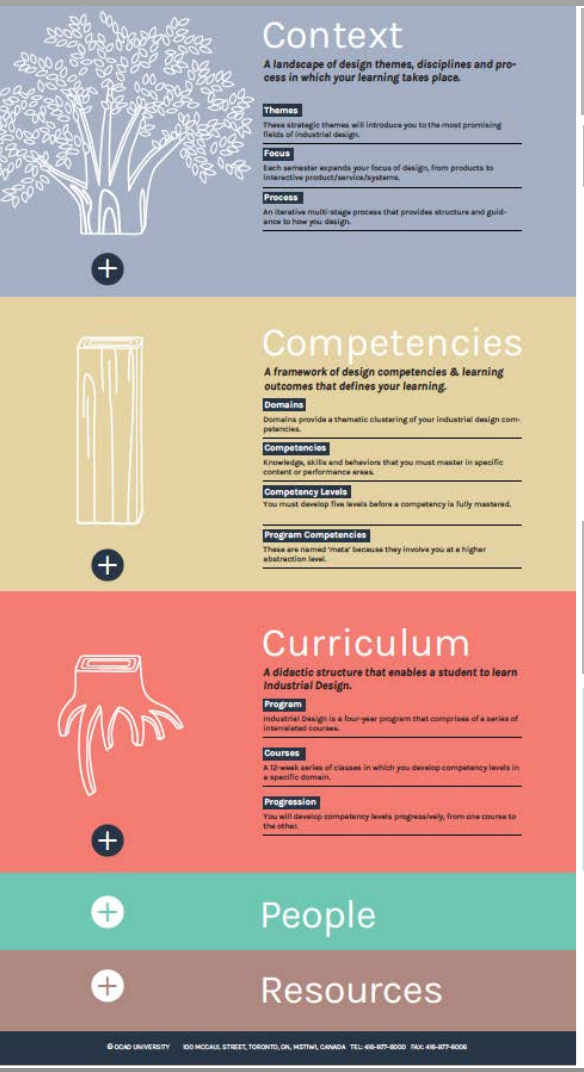
Fabrication & Safety

Wood Workshop

Metal Workshop

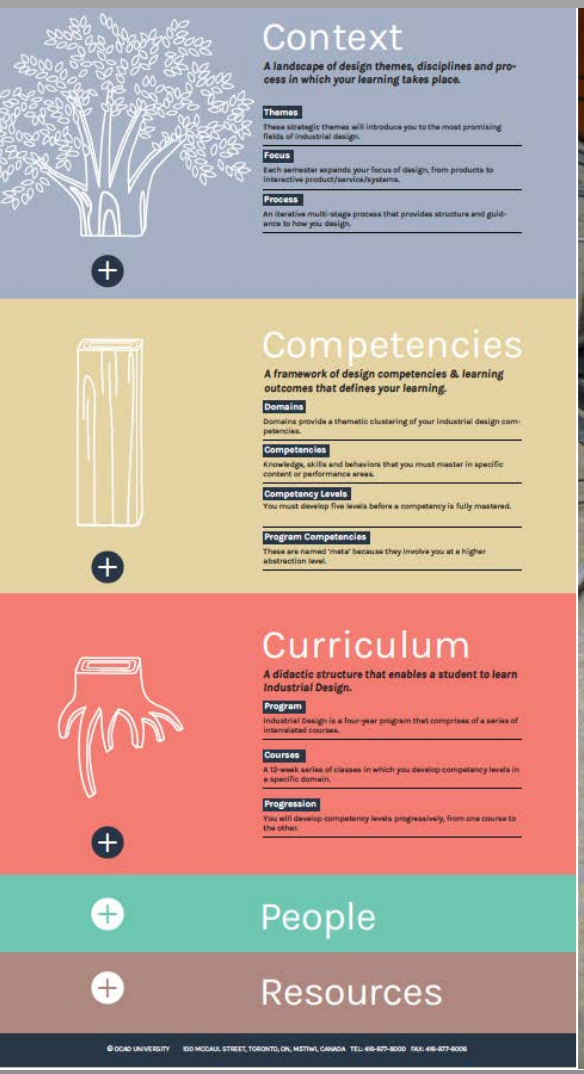
Plastic Workshop

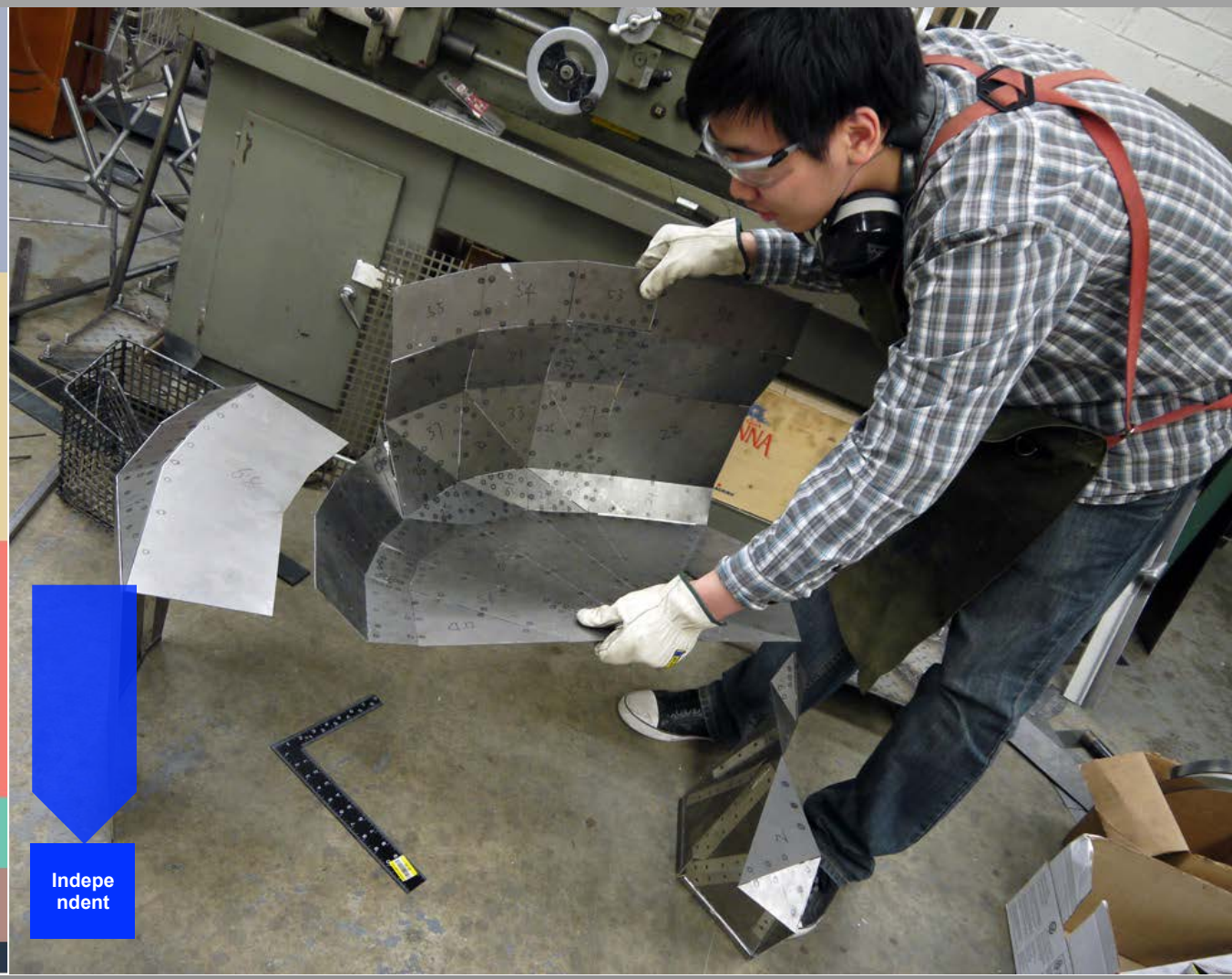
Safety in Workshops: Fabrication



Course	GDES 1B25 Form and Structure	INDS 1B02 Material Explorations 1:	INDS 2B17 Material Explorations 2	INDS 2B18 Material Explorations 3	Independent work in workshops
Competency	Intake	Grasp	Use	Create	Mastery
Wood Workshop					
Metal Workshop					
Plastic Workshop					
Student Badge	Novice	Basic	Advanced	Independent	Technician
Level of autonomy	None	Supervised		Autonomous	

Safety in Workshops: Fabrication





Discussion