

Arch 678

McGill University School of Architecture | Advanced Construction

right underneath "McGill University...", please add:

"learning-through-making, from concept design to fabrication" in italics;

then directly underneath:

"Course Instructor: Maria Mingallon (Adjunct Professor)" with link back to my faculty page: <http://www.mcgill.ca/architecture/faculty/mingallon>

The **aim** of the course is to provide knowledge and expertise to develop complex architectural structures from conceptual design to fabrication using advanced technologies for modelling and simulation.

move this part to the end of the page
and bring the Final Projects section to the top,
starting with the new ones from 2012 - 2013

Skills Development

Design:

- Understand the **behaviour** of any given **structural system**
- Identify the main **force paths** and the **nature** of the force (compression, tension, shear, bending)
- Understand **material** choice, use and distribution within the structural system.
- Appreciate how the **form** and **geometry** in a structure should be the result of the **forces** acting upon the **material**.
- Finally, demonstrate critical and technical analysis in the conception of structural systems

Construction:

- Demonstrate abilities to apply critical and technical analysis to **historical** modes of **construction**
- Be able to **connect** this analysis to **design philosophies** and **material strategies**, and relate them to manufacturing processes and construction.
- Approach design and production as reciprocal methods of project development rather than as successive stages of a project.

Identify how computational tools can facilitate the liaison between the design and construction phases, and be able to employ them.

Leadership:

- Ability to **present** and **communicate research findings** individually and as part of a group.
- Acquire skills to contribute to **interdisciplinary professional teams**.

Programme

The course is structured in three main parts: **Design & Material Lectures**, **Fabrication Tutorials** and a **Final Project**.

Design & Material Lectures: These lectures study a number of case studies representing different structural typologies focusing on the logics between structure, form and material in all types of constructions. One of these typologies is later on followed by a lecture and a series of tutorials dedicated to build up a physical model of a representative example using Rhinoceros & Grasshopper.

Tools and Fabrication Tutorials: These tutorials provide the students with the skills necessary to model the structural system studied in the case studies. Prior to these lectures, additional tutorials will be provided: during the first (Vbscript) and second (Grasshopper) weeks of the course. Following these tutorials students will explore laser cutting and/or CNC-milling as forms of design output, pursuing an opportunity to work directly with advanced design technologies reproducing one of the digital models previously prepared in the series of tutorials described above. As part of an assignment students will fabricate a scaled model using laser cutting/CNC milling. This will help students to familiarise themselves with the tools available in the prototyping lab.

Final Project: This final phase of the course consists on the development of a structural system from design to fabrication and construction of a real scale prototype in groups.

Final Projects 2011-2012

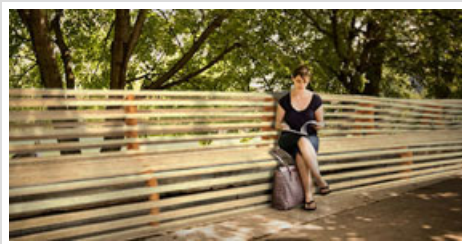
bring to the top of the page, ordered in descending chronological order, with the most recent projects (the new ones from 2012-2013) located at the very top



Group 1

Kyle Burrows, Thomas Evans, Chana Haouzi, Jonathan Gougen-Manning, Francis Ng, Keith Thomas.

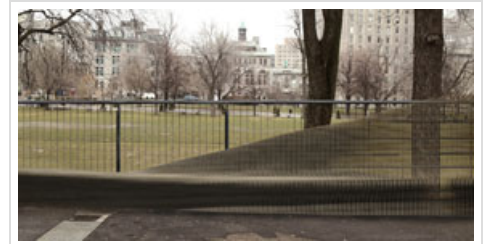
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Group 2

Ghaeli, Lamarre, Leclerc, Mackellar, Moore, Nikolova.

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Group 3

Yekatherina Artemchuk, Emily Baxter, Marilina Cianci, Marie-Pier Dufour, Naomi Hébert, Victoria Henderson.

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Student Work 2010

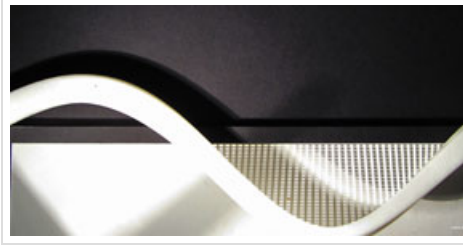
→ replace with Final Projects 2010 - 2011



Group 4

Alla Shapiro, Mylene Carriere, Silvie Marlette, Laurant Unzueta, Vanessa Levesque.

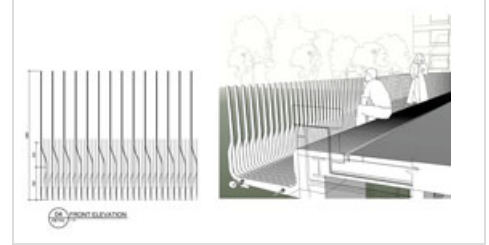
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Group 5

Hanna, Nuno, Alexandre, Emma, Anne-Marie, Nazanin.

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Group 6

Sima Chavooshi, Martin Chow, Jean-Roch Marion, Seyed-Sassan Mirkhani, Charles Wong.

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A Lamp Story...

Anne-Marie Desmeules; Yu-Chang Grace Lin; Reena Mistry; Dan Guenter; Jessica Sin; Rico Law.

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Arch 678 Final Report

Frederik Dolmand; Sarah Ebner; Melanie Rothpan.

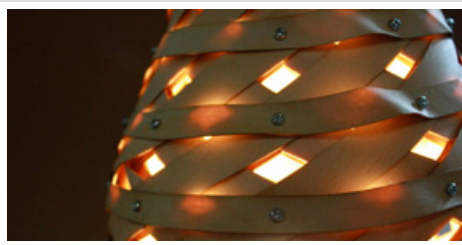
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JEDDA

Jeanne Cayer-Desrosiers; Junia-Elli Jorgji; Emily Dovbniak; David Dworkind; Don Toromanoff; Ali Nouri-Nekoei.

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Lattice Lamp Project

Maryse Barrette-Parser; Chi Yun (Queenie) Chau; Baharan Khosravi; Olivier Pellerin; Giulia San Gregorio; Khanh Linh Truong.

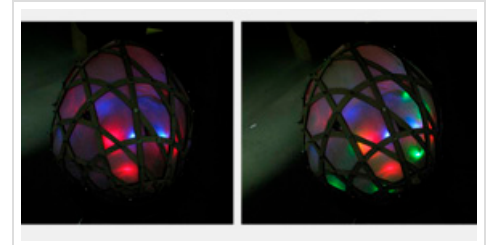
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Project 3

Kfir Gluzberg; Gabrielle Marcoux; Andrew Foote; Nicolay Bpyadjiebv; Nadia Petkovic, Tyler Rozicki.

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Holiday Lamp

Claudia Barra De Vincenzo; Traian Dima; Seema Fariha. Lydia Lortie; Katherine Messina; Tracy Sun.

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