CEED

CENTRE OF ENTREPRENEURSHIP AND ENGINEERING DESIGN

FACULTY OF ENGINEERING

UNIVERSITY OF OTTAWA

engineering.uottawa.ca/CEED

OUR MISSION

> " To foster and strengthen:
> - Depth in engineering design
> - Client focus in engineering design
> - Experiential learning opportunities
> - Business acumen
> - Building of sales and communication skills
> - Participation in major competitions and pre-professional activities "

DR. HANAN ANIS

NSERC Chair in Engineering Design.

Dr. Anis is the director of the Centre for Entrepreneurship and Engineering Design (CEED) and holds a NSERC Chair in Engineering Design. She is a professor in Electrical and Computer Engineering at the University of Ottawa.

About CEED

Courses
- Engineering Design (**GNG1103/1503**)
- Introduction to Product Development (**GNG2101/2501**)
- Introduction to Technology Entrepreneurship (**GNG4120/5120**)

Rapid Prototyping Facilities
- Simon Nehme Design Commons
- Richard L'Abbé Makerspace
- MakerLab
- Brunsfield Centre
- Manufacturing Training Centre (MTC)
- John McEntyre Team space (JMTS)
- Sandbox

Competitions
- Entrepreneurial Idea
- Entrepreneurship Concept
- Design Day

Extra-Curricular Programs
- Simon Nehme Summer Entrepreneurship School
- MakerLaunch Program
- Entrepreneurship Internship
- Start-up Weekend

Courses

- Controlled interaction with clients.
- One client per section.
- Minimum of 3 client meets.

GNG1103/1503
Engineering Design

- Each student group has a client.
- Teams go and meet clients.
- At least 3 meetings with clients off campus.

GNG2101/2501
Introduction to
Product Development

- Students find clients.
- Students meet with 4 potential customers per week for 6 weeks.

GNG4120/5120
Introduction to Technology
Entrepreneurship

Approximately 1000 engineering students/year are registered in the entrepreneurial engineering design courses.

Introduction to product development (GNG2101/2501) started with 9 students in 2012 and currently has 300 students.

GNG4120
20%

GNG1103
50%

GNG2101
30%
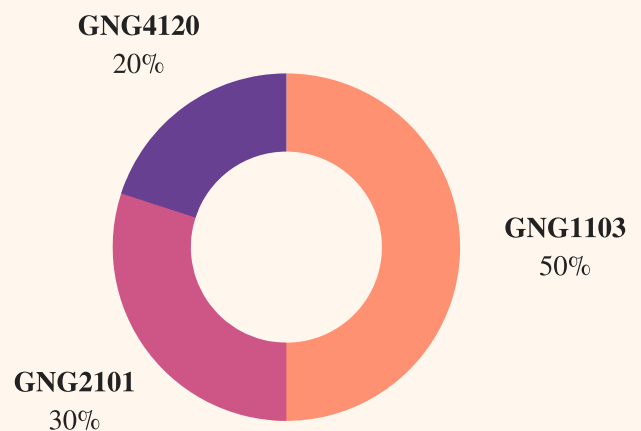
Student registration per course
(1000 students basis)

Rapid Prototyping Facilities

Simon Nehme Design Commons
The Simon Nehme Design Commons is a new reconfigurable space that fosters creativity and ideation for students involved in design or entrepreneurship.

Richard L'Abbé Makerspace
The first uOttawa invent-build-play space featuring 3D printers, arduinos, 3D scanners, embroidery machines, virtual reality and laser cutters.
~ 2000 users/year

MakerLab
Provides students with a structured learning experience using technologies available at the Makerspace.

~ 1000 users/year

The Brunsfield Centre
Engineering students can design, fabricate, and test complex prototypes.

~ 250 users/year

Manufacturing Training Centre (MTC)
Provides training on traditional mechanical equipment such as lathes, milling machines and saws.

~ 800 users/year

John McEntyre Team space (JMTS)
Provides pre-competitive teams involved in large-scale projects with the space and infrastructure required to succeed.

~ 200 users/year

Sandbox
Sandbox is a team space for projects. It provides multiple design stations and meeting spaces. The room has electrical workstations and a tool bench.
~ 10 teams/year

Competitions

Entrepreneurial Competitions

Entrepreneurial Idea Competition	Entrepreneurship Concept Competition
2 min pitch	10 min presentation
$2000, $1000 and $500	$5000, $3000 and $2000
Based on an idea	Based on validated business model
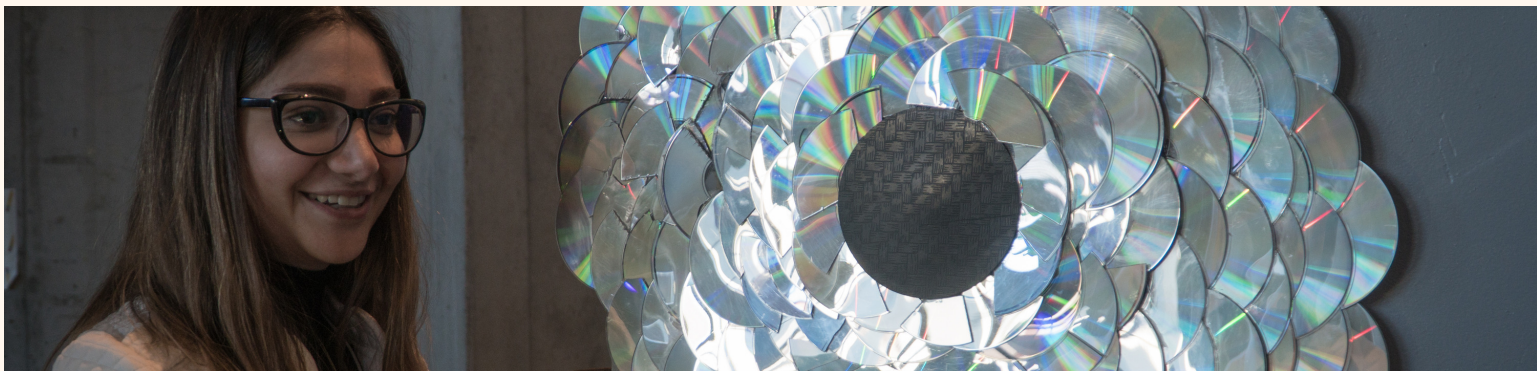
Design Competition

Design Day

- Showcasing engineering design projects and celebrating students achievements
- ~ 106 teams (700 students) participate every semester with more than 40 judges from the community and industry
- Takes place twice in academic year

Extra-Curricular Programs

Simon Nehme Summer Entrepreneurship School

- One week long summer school that brings together students, community members and researchers to collaborate on exciting ventures
- Participants work in groups throughout the one week
- The school offers a chance for one team to win $5,000 in the final pitch competition

MakerLaunch Program
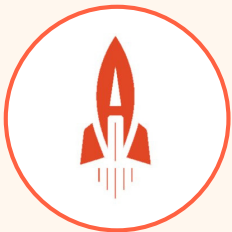
- A Startup Growth Program for Makers
- This program is designed to propel startups to success by surrounding them with the team, facilities and tools needed to launch and scale
- The program provides the participants with coaching, co-working spaces, funding, mentorship, business support, design and prototyping services

Entrepreneurship Internship

- Internships are in existing start-ups or to support students in starting their own companies
- 20 entrepreneurship internships are offered annually

Start-up Weekend

- Start-up Weekend uOttawa edition
- Over 30 judges and mentors
- Around 100 students participates in the event

3D printed prosthetic challenge

STEM Complex

Rob Hunter

UOttawa Electric Racing

Design Day Overall winners

Richard L'Abbé Makerspace:

Prosthetic Hand Challenge:
The students designed and built a new, functioning 3D printed prosthetic hand to a local 6 year old boy.

STEAM Interactive Arts challenge:
The students developed an interactive interdisciplinary futuristic art installation that will be showcased in the new STEM Complex.

Rob Hunter won the 2018 Ottawa Symphony Orchestra's 3D printing contest. Rob designed a 3D-printed clarinet that is narrower and lighter than a traditional one, and includes an arm brace that supports almost all of the instrument's weight.

John McEntyre Team Space (JMTS)

UOttawa Electric Racing (UOE):
In 2019, the UOE team won the 4th place in the Shell Eco-Marathon Americas competition in Sonoma, California.

MakerLab

As a part of the design classes, students work on accessibility themes. For example, a team developed foot support for clients with Parkinson's disease. This team won the best design in their category and also the Overall Design Day Award.

Simon Nehme Summer Entrepreneurship

## Simon Nehme Summer Entrepreneurship School

The Simon Nehme Summer Entrepreneurship school brings together students and community members interested in entrepreneurship. The school also brings together speakers and mentors from academia, industry, startup support services and entrepreneurs.

Entrepreneurship Competitions Winners

RC Benchmark co-founders

RC Benchmark provides tools for robot designers by robot designers.They have helped hundreds of designers and researchers complete their projects.
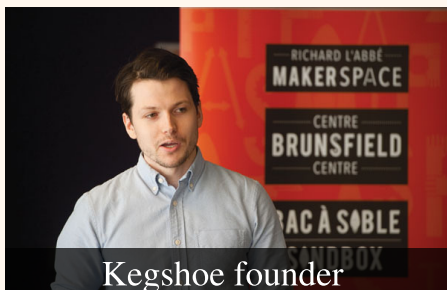
Kegshoe founder

Kegshoe helps breweries to track their kegs throughout production & storage, sales, and delivery. This startup was the winner of Launching Entrepreneur competition in 2017.

Midia Shikh Hassan

Midia was one of the three Canadian winners awarded the Queen's Young Leaders award in 2018 due to her work with refugee outreach program that was supported by CEED entrepreneurial training programs and the makerspace.

Spivo founder

The only selfie stick that pans the camera 180 degrees at the touch of a button. Users can record visually striking, 360-degree shots. Spivo won the entrepreneurial competition.

GameStrat founders

GameStrat specializes in real-time analytics software for the sports market, to provide coaches with instant video replays through wireless networks in stadium dense environments.

CEED Photo Gallery

Student showcasing their design for blood spatter project in Design Day.

Design Day Participants.

Training session at the Manufacturing Training Centre (MTC).

STEAM project showcased in Design Day by students in GNG1103.
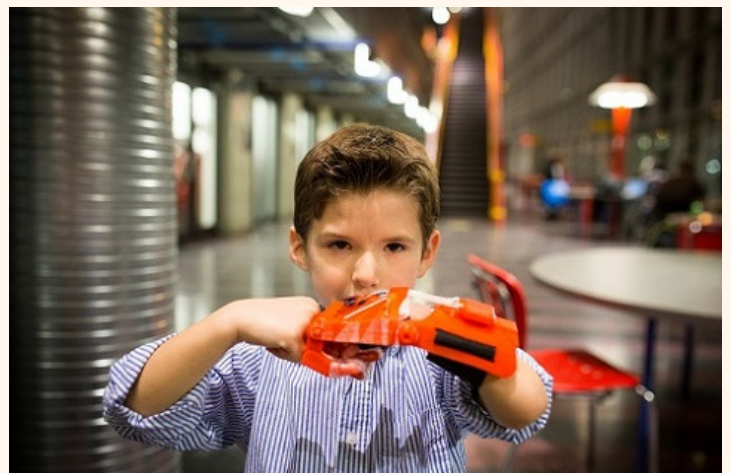
CEED Photo Gallery

Winners of Entrepreneurship Concept Competition.

VR Simulation developed by students for patients undergoing radiotherapy and chemotherapy.

MakerLaunch Program 2019 cohort.

Sebastian Chavarria after receiving his 3D printed prosthetic hand.

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