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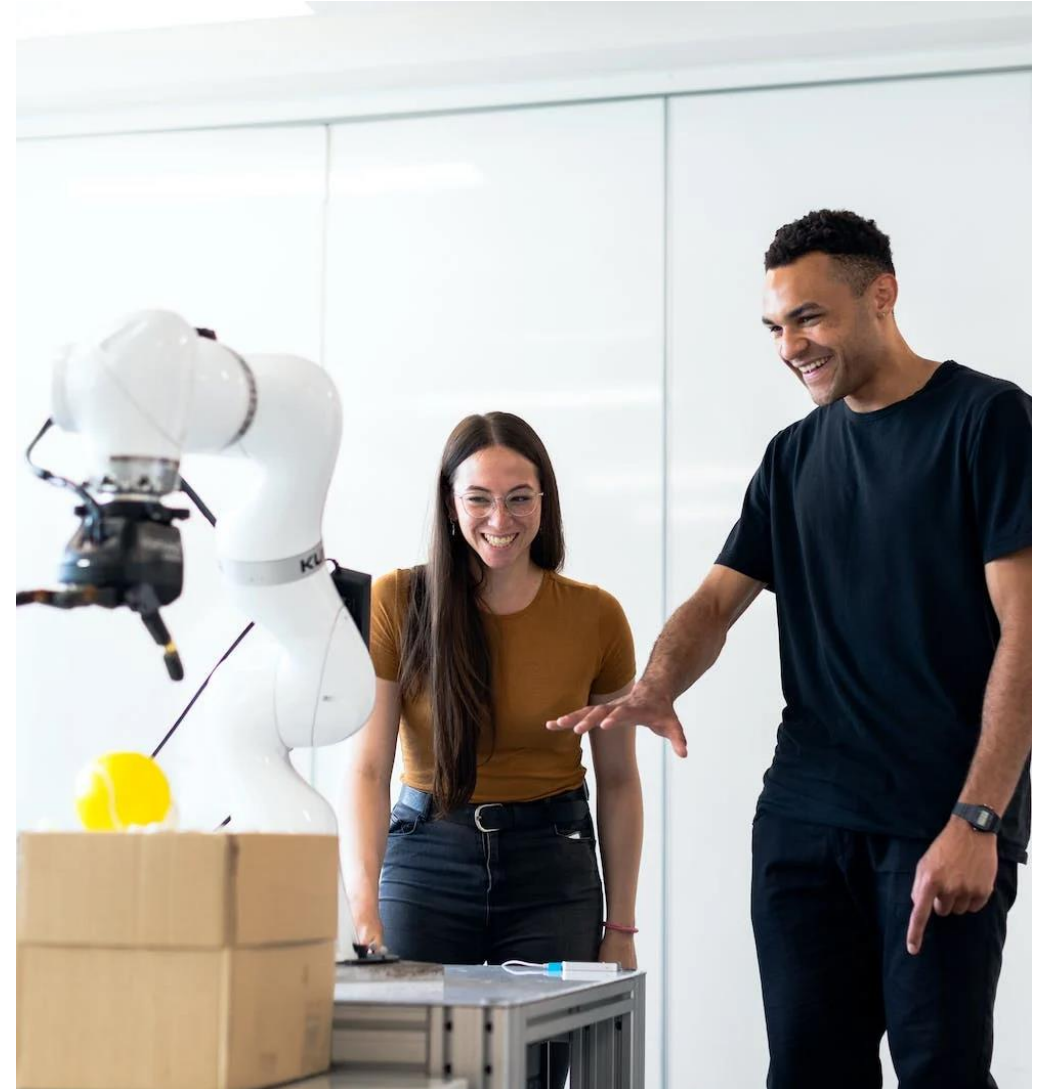
2023 Swinburne
Career Practitioner Seminar

Applied Innovation

“Courses for next gen_now”

Presented by Prof. Christine Thong & Dr David Mesa

17th February 2023



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Acknowledgement of Country

We respectfully acknowledge the Wurundjeri People of the Kulin Nation, who are the Traditional Owners of the land on which Swinburne's Australian campuses are located in Melbourne's east and outer-east, and pay our respect to their Elders past, present and emerging.

We are honoured to recognise our connection to Wurundjeri Country, history, culture, and spirituality through these locations, and strive to ensure that we operate in a manner that respects and honours the Elders and Ancestors of these lands.

We also respectfully acknowledge Swinburne's Aboriginal and Torres Strait Islander staff, students, alumni, partners and visitors.

We also acknowledge and respect the Traditional Owners of lands across Australia, their Elders, Ancestors, cultures, and heritage, and recognise the continuing sovereignties of all Aboriginal and Torres Strait Islander Nations.

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What is Applied Innovation?

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Applied Innovation

Innovation is an idea or invention taken to market or implemented in such a way that affects how people interact with each other and their environment.

Applied Innovation is using the technical skills and specialised knowledge of specific disciplines in a way that can create a significant impact on society. What better way to do so than collaborating with people from other disciplines to combine their ideas and expertise?

“Stay within the boundaries of your discipline, and you will have an easier time making incremental improvements, opening the doors of the adjacent possible that are directly available to you given the specifics of the historical moment. (There’s nothing wrong with that, of course. Progress depends on incremental improvements.) But those disciplinary boundaries can also serve as blinders, keeping you from the bigger idea that becomes visible only when you cross those borders. [...] The time travellers [e.g. Leonardo Da Vinci] are unusually adept at “intercrossing” different fields of expertise.” Johnson, 2015

How Applied Innovation is shaping our world

Innovations that changed how we listen to music



How Applied Innovation is shaping our world

Innovations that changed how we listen to music



1881
First flat disc
record



1928
Tape Recorder

1954
Transistor Radio



1964
Compact Cassette

1979
Walkman



2001
iPod



1880

1877
Phonograph



1930 1940

1925
Electric Record
Player

1950

1948
LP
(Long-Playing Record)



1960

1970

1980

1990

1976
CD's



2000

2010

2020



1997
MP3 player

How Applied Innovation is shaping our world

Emerging technologies: ChatGPT produces excitement and fear

The technology magazine, Interesting Engineering, asked the ChatGPT bot to define what it is, and it said:

"I am a language model developed by OpenAI. I was trained on a diverse range of internet text, including websites, books, and more. This allows me to generate human-like text responses to a wide range of questions and prompts,"

"My training data encompasses a wide range of topics, so I can converse on many subjects, including but not limited to science, history, mathematics, and current events. However, I am still just a machine, and while I can generate responses that are similar to what a human might say, I do not have thoughts, feelings, or consciousness,"

Extracted from ChatGPT: 30 incredible ways to use the AI-powered chatbot (McFadden,2023)

<https://interestingengineering.com/innovation/chatgpt-30-incredible-ways-to-use> , Interesting Engineering/[ipopba](#)//[Stock](#)



Conceptual image: Uses of ChatGPT.

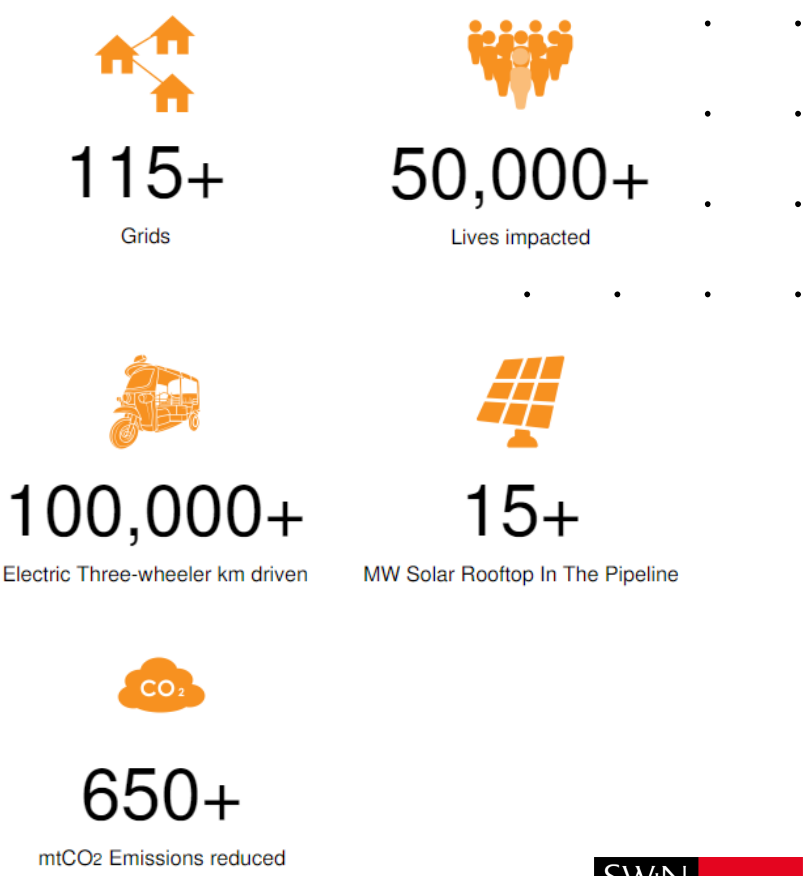
Interesting Engineering/[ipopba](#)//[Stock](#)

How Applied Innovation is shaping our world

SOLSHARE Bangladesh Innovation with social impact: Bringing electricity to vulnerable communities



<https://youtu.be/KyXxRwTlBe0> , <https://solshare.com/>

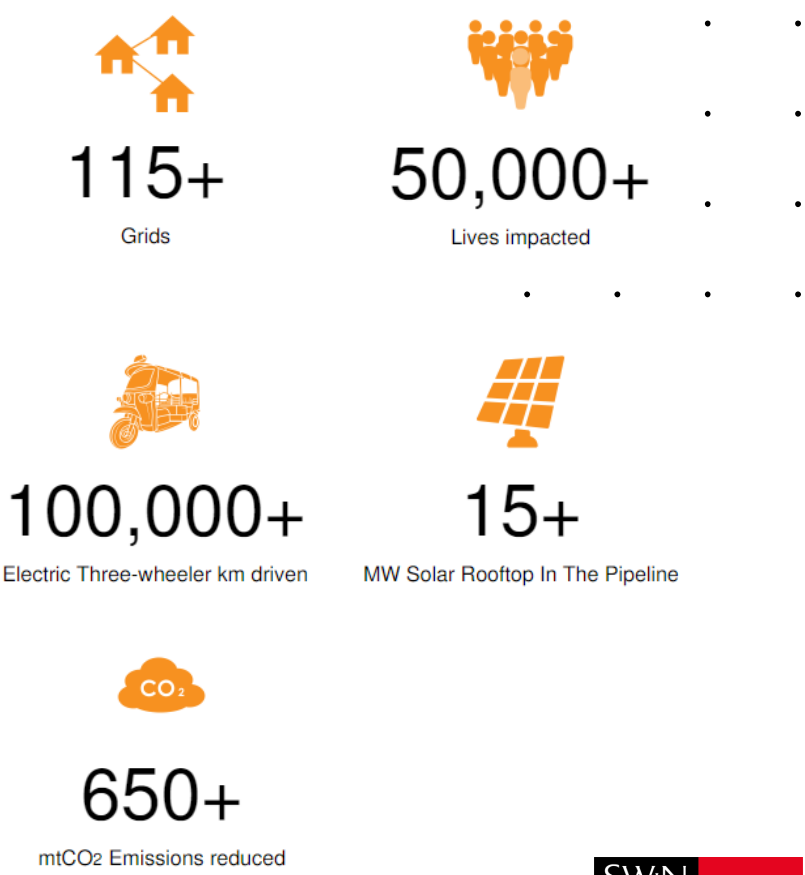


How Applied Innovation is shaping our world

SOLSHARE Bangladesh Innovation with social impact: Bringing electricity to vulnerable communities



<https://youtu.be/SiOOO3mm97g> , <https://solshare.com/>



How Applied Innovation is shaping our world

From Lab to Market: Eudaemon Technologies developing the next generation of condoms

Eudaemon Technologies is a Sydney-based Medical device manufacturer that combines **Advanced Manufacturing, Material Science and Human Centred Design** expertise to develop innovative solutions in sexual and reproductive healthcare. Scientists from Swinburne and the University of Wollongong founded the company.

Project Geldom



How Applied Innovation is shaping our world

Innovation at Swinburne



AVIATION

Zero-emissions aviation the focus for first Founder In Residence

Hydrogen and battery-powered air travel is on the horizon, thanks to Swinburne's new Founder in Residence Rachael Barritt. Rachael Barritt from Dovetail Electric Aviation is Swinburne's first Founder...

[Read more](#)



Tuesday 31 January 2023



HEALTH SCIENCE

Australia's biggest research trial using psychedelics to treat depression to commence in 2023

Swinburne has signed a \$5 million clinical trial research agreement with Woke Pharmaceuticals to embark on Australia's biggest research trial examining the promise of the active ingredient in...

[Read more](#)



Monday 30 January 2023



DESIGN TECHNOLOGY HEALTH

Student videos guide cancer patients through treatment

Swinburne students have created motion design videos with Peter MacCallum Cancer Centre to improve the patient experience by helping them prepare for their treatment. Swinburne design students worked...

[Read more](#)



Tuesday 3 January 2023



STUDENT NEWS TECHNOLOGY SUSTAINABILITY

Student climate change podcast goes global

Swinburne students have created a climate change podcast published on the Global Climate Change Week website as an international educational tool. As part of the Bachelor of Health Sciences, a group...

[Read more](#)

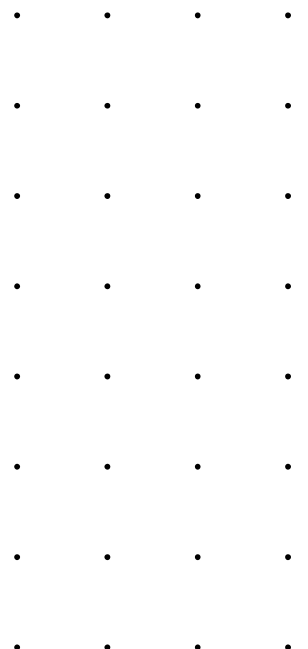


Wednesday 21 December 2022

Future Employment

'Australians entering the workforce could have as many as 5 different careers and make 17 changes in their employers over their work life.'

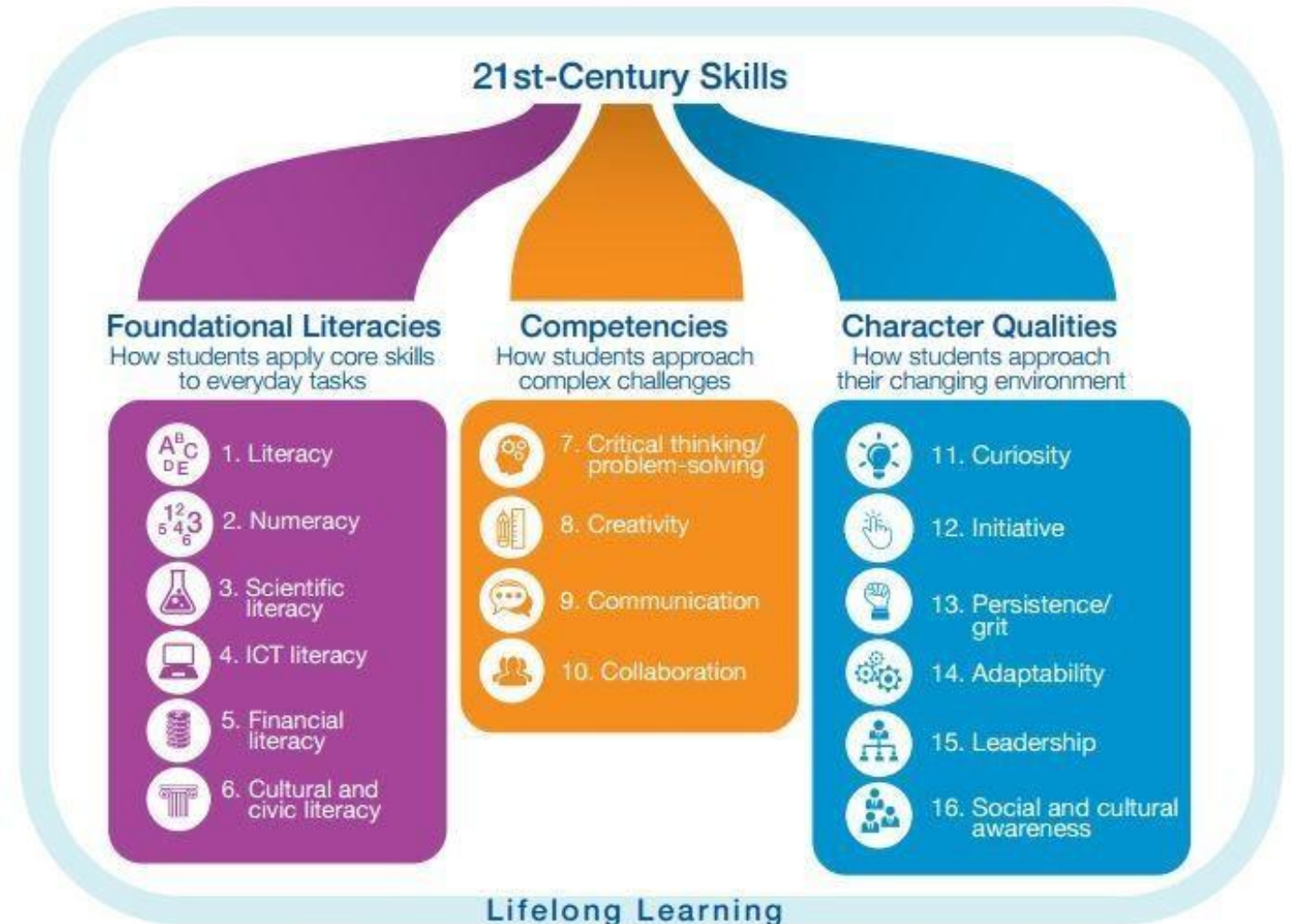
The Foundation for Young Australians' 2017 report



The Future of Work is changing

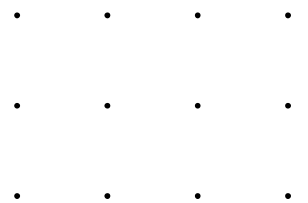
Exhibit 1: Students require 16 skills for the 21st century

- Changing employer expectations require graduates with **resilience & to deal with complexity and ambiguity**
- critical thinking, problem-solving and **creative confidence** applied in day-to-day work
- Pressure to "innovate" means graduates need **practical skills and a mindset** to deliver
- Growing need for people to be able to **work across industry sectors & traditional career pathways**



Note: ICT stands for information and communications technology.

Future Change-makers



Someone who is....

Creative, curious and inquisitive.

Passionate and up for a challenge.

Wanting to keep their options open and diversify.

Not too sure about their career path.

Team orientated and a team player.



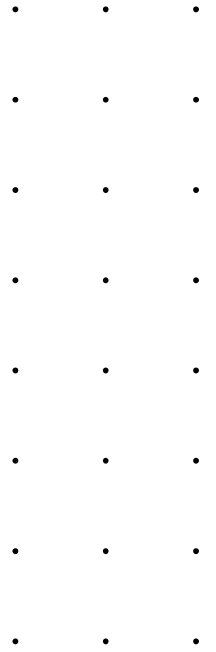
Career Opportunities

Are there jobs in this field?

What is happening in the market?

Yes. To stay competitive, most big organisations have in-house innovation labs (NAB, CBA, Medibank, Australian Unity, GHD Engineering, 7-Eleven, local councils, healthcare) which are hiring, as well as roles to manage and deliver new and/or improved products and services.


There are also design and innovation consultancies hiring in various roles in a similar space. *E.g. Planet Innovation – specific focus in MedTech.*



Career Opportunities

What kind of jobs will students get when they graduate?

Innovation Consultant, Innovation Lead, Innovation Analyst, Strategic Designer, Creative Producer, Start-up Founder, Human-Centred Researcher, Product Manager, Transformation Lead, Innovation Strategist and Innovation Manager.....and they will invent more!




Director - Growth & Experiments at Accenture Song
Melbourne, VIC

3K followers

Talks about #tech, #growth, #innovation, #experiments and #productmanagement


1 mutual connection



Sustainability and Innovation Lead - ANZ @ VinZer...
Sydney, NSW


Talks about #innovation, #climatechange, #sustainability, and #renewableenergy

1K followers • Antonio Castillo BEng PhD and Zoran Vasic are mutual connections



Technology and Innovation Lead at TOM: Mell
Greater Melbourne Area

Charlie Ranscombe, Blair Kuys, and 4 other mutual connections




Industry and Innovation Lead at Randwick Health & I...
Greater Sydney Area

Summary: ...**innovation** and industry engagement opportunities for the Randwick Health & **Innovation** Precinct (RHIP). I...

MARILYN JONES and Antonio Castillo BEng PhD are mutual connections




Jobs



Innovation Manager
ResMed
Sydney, New South Wales, Australia (On-site)


Actively recruiting

4 days ago • 13 applicants



Innovation Manager
GroundProbe
Brisbane, Queensland, Australia (On-site)


2 weeks ago



Service Innovation Manager
Windsor Group
Brisbane, Queensland, Australia (On-site)


1 alumnus works here

2 weeks ago • 1 applicant



Digital Product Innovation Coach
Hello Human
Millers Point, New South Wales, Australia (On-site)

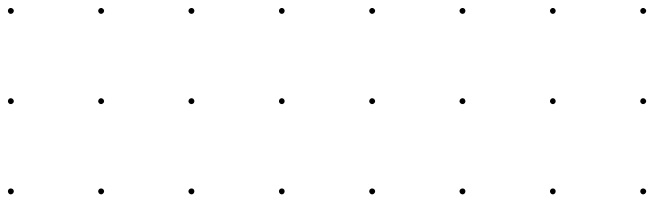
1 month ago • 0 applicants



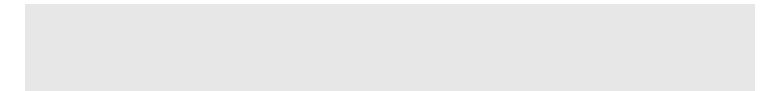
Digital Innovation Lead, Homeless Law
Justice Connect
Melbourne, Victoria, Australia (Hybrid)

4 alumni work here

1 month ago • 1 applicant



Applied Innovation at Swinburne



Bachelor of Applied Innovation Overview

A unique suite of double degrees

The Bachelor of Applied Innovation develops **in-demand workforce skills** such as interdisciplinary collaboration, creativity and complex problem-solving, persistence, curiosity and initiative in real-world contexts.

It gives students **practical skills and industry experience** applying innovation methods.

It is immersed in a **collaborative, interdisciplinary environment** supported by specialist academic teams. It is student-centred, innovative and experiential in its delivery.

As an innovator, students will be ready to conceive, develop and deliver transformative projects and adapt to uncertain and changing contexts to **secure or create fulfilling employment opportunities**, with a portfolio of experience to back it up.



Bachelor of Applied Innovation Overview

School of Business, Law and Entrepreneurship

- [Bachelor of Accounting / Bachelor of Applied Innovation](#)
- [Bachelor of Business Information Systems / Bachelor of Applied Innovation](#)
- [Bachelor of Business / Bachelor of Applied Innovation](#)
- [Bachelor of Criminal Justice and Criminology / Bachelor of Applied Innovation](#)

School of Design and Architecture

- [Bachelor of Design / Bachelor of Applied Innovation](#)

School of Engineering

- [Bachelor of Aviation Management / Bachelor of Applied Innovation](#)
- [Bachelor of Engineering \(Honours\) / Bachelor of Applied Innovation](#)

School of Health Sciences

- [Bachelor of Health Science / Bachelor of Applied Innovation](#)

School of Science, Computing and Engineering Technologies

- [Bachelor of Computer Science / Bachelor of Applied Innovation](#)
- [Bachelor of Information and Communication Technology / Bachelor of Applied Innovation](#)
- [Bachelor of Science / Bachelor of Applied Innovation](#)

School of Social Sciences, Media, Film and Education

- [Bachelor of Animation / Bachelor of Applied Innovation](#)
- [Bachelor of Arts / Bachelor of Applied Innovation](#)
- [Bachelor of Games and Interactivity / Bachelor of Applied Innovation](#)
- [Bachelor of Media and Communication / Bachelor of Applied Innovation](#)
- [Bachelor of Screen Production / Bachelor of Applied Innovation](#)

Requirements and Pathways

Bachelor of Applied Innovation is offered exclusively as a double degree. It has been designed to extend students' discipline skills and knowledge and provide them with a truly interdisciplinary experience.

The entry requirements for admission into any of the Applied Innovation double degrees are as per the single Base Discipline Degree.

Students that are currently in their 1st or 2nd year of any of the Base Discipline Degree can transfer into the double degree course.

Bachelor of Applied Innovation Course Structure

3.5 years accelerated

Year 1

Semester 1	
Base degree	Base degree
Base degree	Base degree
Winter Term	
INV10001 Exploring Creativity and Innovation	
Semester 2	
Base degree	Base degree
Base degree	Base degree

Year 2

Semester 1	
Base degree	Base degree
Other studies	INV10002 Fundamental of Innovation Practice
Winter Term	
INV10003 Innovation Sandpit	
Semester 2	
Base degree	Base degree
Other studies	INV10004 Responsible Innovation Futures

Year 3

Semester 1	
Base degree	Base degree
Other studies	INV20003 Applied Innovation Internship
Winter Term	
INV30003 Leadership and Facilitation of Innovation*	
Semester 2	
Base degree	Base degree
Other studies	INV20001 Innovation for Challenges of Today

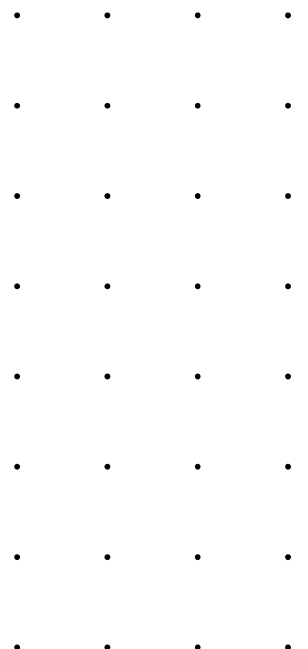
Year 4		.	.	.	.
Summer Term		.	.	.	.
INV20002 Innovation for the Future*		.	.	.	.
Semester 1		.	.	.	.
INV30001 Applied Innovation Studio A*		.	.	.	.
INV30002 Applied Innovation Studio B*		.	.	.	.

* Denotes outcome unit

Why study a Bachelor of Applied Innovation

Swinburne's Bachelor of Applied Innovation gives students unique interdisciplinary innovation practice across a breadth of diverse disciplines from law, engineering and health sciences to aviation, psychology and criminology.

- **Accelerated structure** – students only extend their 3-year bachelor degree by 6 months by studying in Winter Term.
- **Hands-on, real experience** - like an innovation lab in industry to know “how industry does innovation”.
- **CV competitive advantage** – an innovation toolkit innovation applicable across industry sectors
- **Collaborating, catalysing and leading innovation** – how to facilitate and foster innovation in teams and organisations.
- **Develop professional innovation networks** locally and globally. Design Factory Melbourne, who coordinates the degree and is part of a Global Network of 30+ Design Factories,, from Helsinki to Japan, to New York.



What this looks like in practice

The course is hands-on, to develop real experience.

Projects cover industry practices, have industry partner briefs or support students to explore innovation opportunities for their industry sectors of interest.

Sprint projects like Google, mentoring and internships from start-ups and companies practising innovation.

- Agile team collaboration,
- Practical prototyping and testing of ideas,
- Pitching ideas,
- Demonstrating value and impact of outcomes,
- Communicating with stakeholders,
- Immersing in a space that supports innovation culture and mindset.



internship



sprints



mentoring



projects

What this looks like in practice

Range of topics and challenges
(product, digital, physical, service, tech...)



Sustainable development, future-focused
innovation combatting food waste in hospitals



Corporate innovation challenge with big pharma in
Germany – build and develop application for healthcare



Engineering challenge to develop new experience on water with
Japanese industry partner. Now commercialised as startup.

Industry Connections

Who are our industry partners for this course?

Design Factory Melbourne, who coordinates the degree, works with many industry partners. Some here →

An Industry Advisory Board has been involved in the development, with various disciplines and sector representatives.

Are there work placements involved?

There is an Applied Innovation *Internship* unit in the course, which gives real experience with companies on applying innovation.

We are part of the Swinburne Innovation Precinct ecosystem, with opportunities to learn about start-ups or supported create your own. E.g. Venture Cup.

Some past Design
Factory Industry
Partners:



netwealth.com.au



studiomass.com.au



Example: Upcoming Winter Unit

INV10001 Exploring Creativity and Innovation

- Week 1-3: blended learning – online + 1 face-to-face day of creativity labs
- Week 4: Apply Google Sprint Methodology in interdisciplinary teams a consecutive 4-day Sprint project in MAKE IT BREAK IT.
- Students get to collaborate with industry experts, learn how to prototype and test big ideas, workshop solutions for a real problem, network with other students
- Facilitated by industry professionals in partnership with industry partners



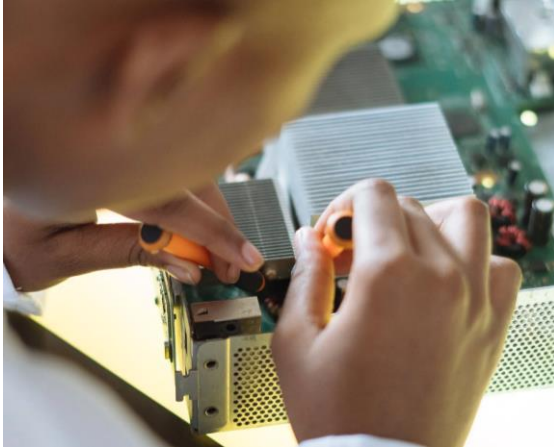
netwealth.com.au



studiomass.com.au



Why Swinburne for Applied Innovation?



Cutting Edge Skills

Industry standards and world-class innovation methods– radical, experimental, incremental and transformative. Skills to catalyse positive change for companies, environment and people.



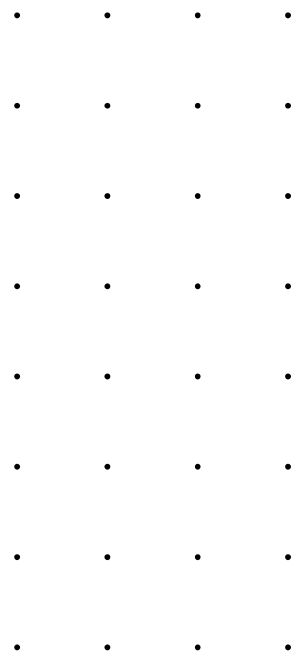
Real Industry Experience

Industry partner projects, internships and opportunities to explore new ideas that could lead to student start-ups- innovate like an entrepreneur or intrapreneur

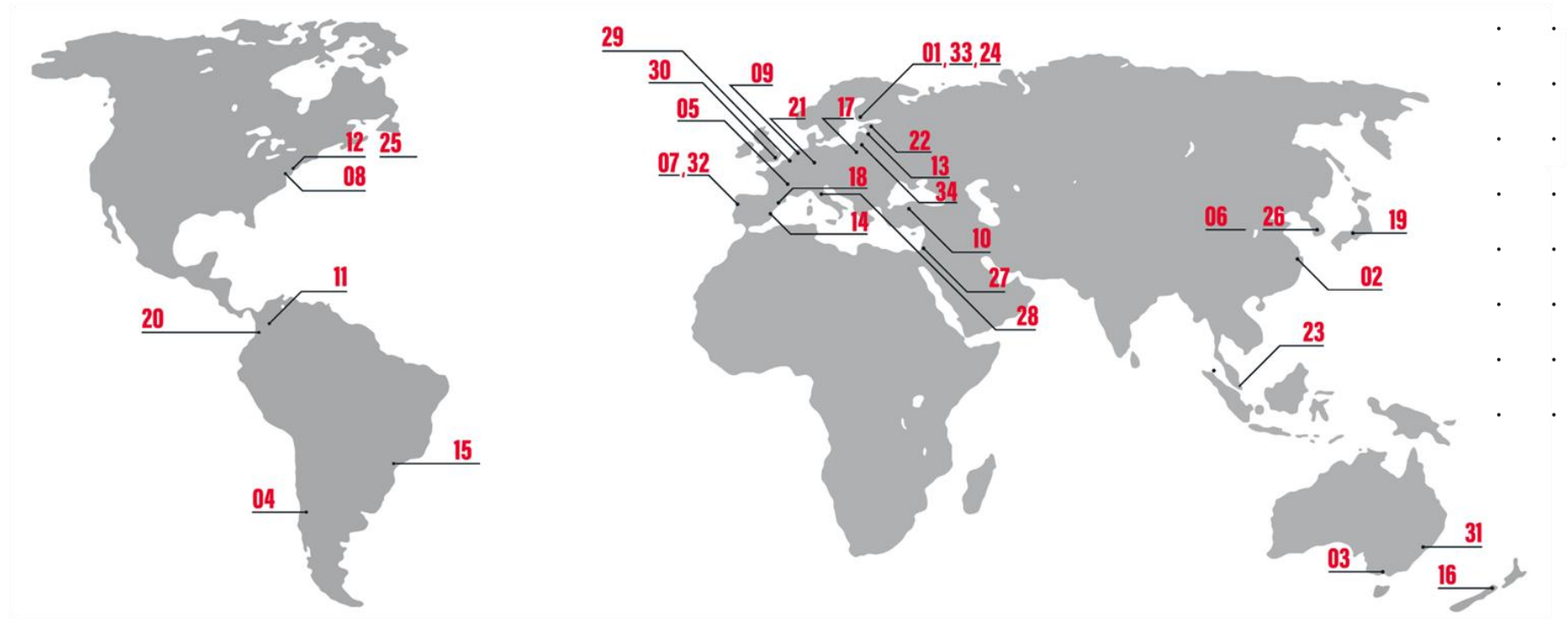


Community & Care

Innovation Culture puts people first and embraces diverse perspectives. Global Networks create international communities for innovation professions.



Globally Connected



1. **Aalto University Design Factory**
Aalto University, Helsinki, Finland (2008)
2. **Sino-Finnish Centre**
Tongji University, Shanghai, China (2010)
3. **Design Factory Melbourne**
Swinburne University of Technology, Melbourne, Australia (2011)
4. **Duoc Design Factory**
Duoc UC, Santiago de Chile, Chile (2012)
5. **Ideasquare@CERN**
CERN, Geneva, Switzerland (2014)
6. **Design Factory Korea**
Yonsei University, Seoul, South Korea (2015)
7. **Porto Design Factory**
Porto Polytechnic, Porto, Portugal (2015)
8. **Nexus Design Factory**
Thomas Jefferson University, Philadelphia, USA (2015)
9. **Frisian Design Factory**
NHL Stenden University of Applied Sciences, Leeuwarden, the Netherlands (2015)
10. **METU Design Factory**
Middle East Technical University, Ankara, Turkey (2016)
11. **Design Factory Javeriana Bogotá**
PUC Javeriana, Bogotá, Colombia (2016)
12. **NYC Design Factory**
Pace University, New York City, USA (2016)
13. **RTU Design Factory**
Riga Technical University, Riga, Latvia (2016)
14. **UPV Design Factory**
Universidad Politécnica de Valencia, Valencia, Spain (2017)
15. **Design Factory São Paulo**
Universidade São Paulo, São Paulo, Brazil (2017)
16. **Design Factory New Zealand**
Wintec, Hamilton, New Zealand (2017)
17. **Warsaw Design Factory**
Warsaw University of Technology, Warsaw, Poland (2017)
18. **Fusion Point**
ESADE, Universidad Politécnica de Catalunya and IED Barcelona, Barcelona, Spain (2017)
19. **Kyoto Design Lab**
Kyoto Institute of Technology, Kyoto, Japan (2017)
20. **Cali Design Factory**
PUC Javeriana, Cali, Colombia (2017)
21. **inno.space**
Hochschule Mannheim, Mannheim, Germany (2018)
22. **University of Tartu Delta Sandbox**
University of Tartu, Tartu, Estonia (2018)
23. **SIT Design Factory**
Singapore Institute of Technology, Singapore (2018)
24. **HAMK Design Factory**
Häme University of Applied Sciences, Hämeenlinna, Finland (2019)
25. **St. John's University Design Factory**
St. John's University, New York City, USA (2019)
26. **Hannam Design Factory**
Hannam University, Daejeon, South Korea (2019)
27. **Shenkar Design Factory**
Shenkar College, Tel Aviv, Israel (2019)
28. **OPER.SPACE**
University of Bologna, Bologna, Italy (2019)
29. **Technovation HUB**
KU Leuven, Leuven, Belgium (2020)
30. **Design Factory London**
Brunel University London, UK (2020)
31. **nandin**
ANSTO, Sydney, Australia (2020)
32. **Design Factory Aveiro**
PCI creative science park, Aveiro, Portugal, (2021)
33. **Viikki Food Design Factory**
University of Helsinki, Helsinki Finland (2021)
34. **LinkMenu fabrikas**
Vilnius Gediminas Technical University, Vilnius, Lithuania (2021)

Course Leaders

Academics with collective 50+ years working with innovation and industry - bringing expertise from Design, Product Development, Business, Entrepreneurship, Futures and Foresight,

We integrate Industry Experts and Guest Lecturers through the degree.

The course is supported by an Academic Advisory Group made up of the Course Directors and Discipline Leaders from the various Base Discipline Degrees, and an Industry Advisory Group.



Aaron Down

Lecturer, Design
Factory Melbourne

Course Director

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David Mesa

Lecturer, Design Factory
Melbourne

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Prof Christine Thong

Academic Director,
Design Factory Melbourne

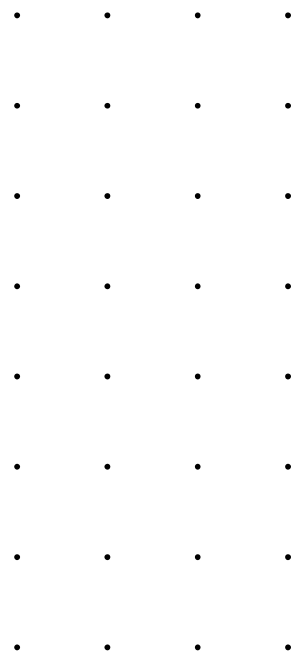
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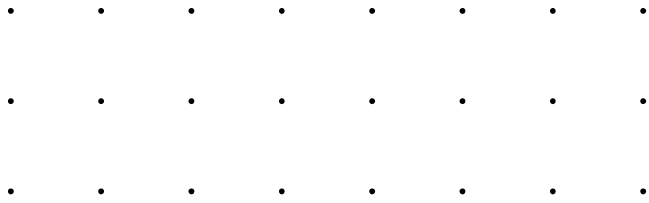


Bridgette Engeler

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Thank you

17th February 2023

