

**NUS**  
National University  
of Singapore

College of Design  
and Engineering

# INNOVATION & DESIGN PROGRAMME

(iDP)

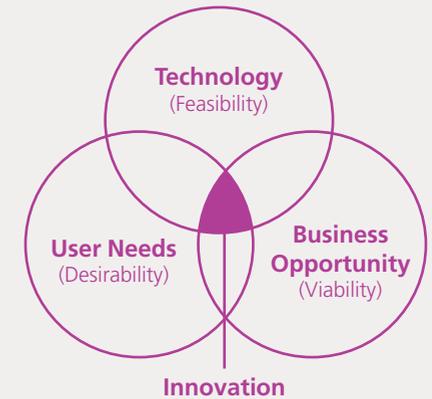
SECOND MAJOR/MINOR



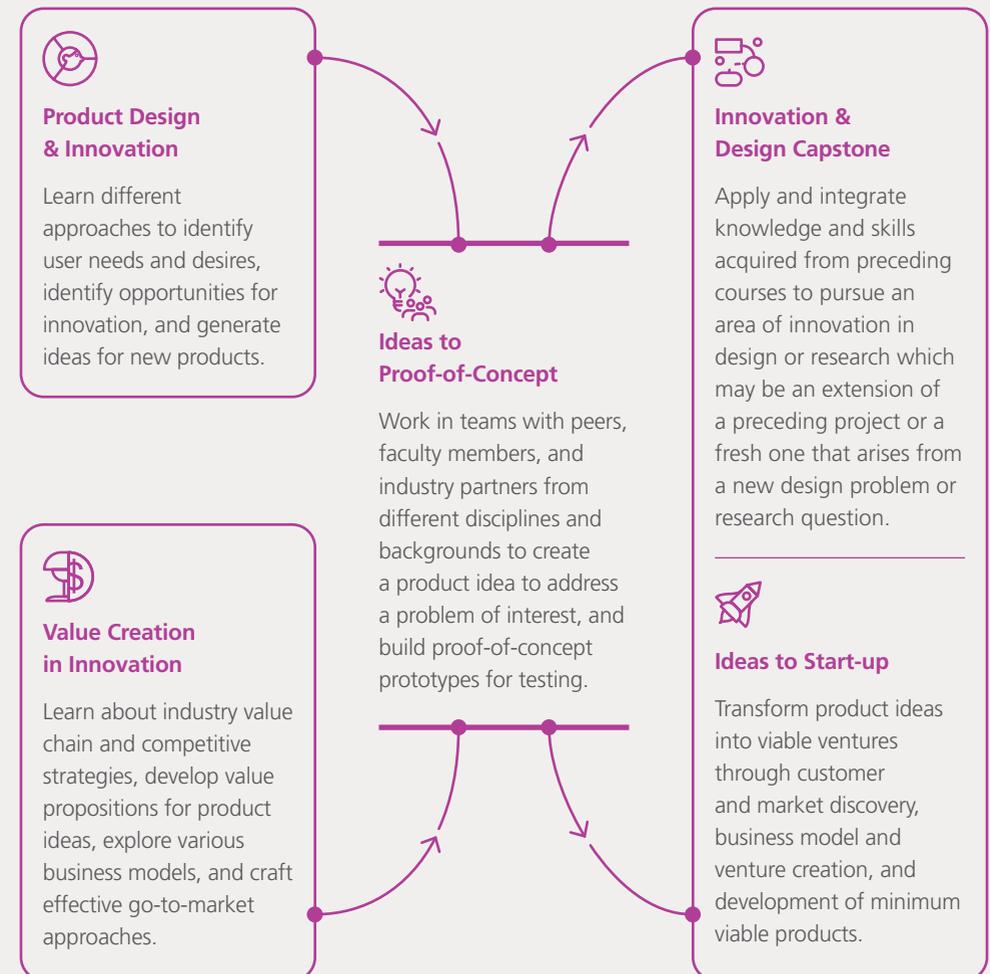
# Integrating Design, Technology and Entrepreneurship

iDP is designed to inculcate in you an entrepreneurial mindset, equipping you to comprehend innovation and apply your knowledge and skills effectively to solve problems and design new products, services and experiences. It is also a platform for you to collaborate with your peers from different disciplines on hands-on projects that address intricate, real-world challenges.

Structured as a second major or minor that is open to all primary majors in NUS, our curriculum brings you through an enriching journey in design and innovation. You will learn how to create innovative solutions to meet the needs of users and customers in a technologically feasible manner and matched with a viable business strategy. If you are keen on entrepreneurship, you can join the NUS Overseas Colleges (NOC) programmes and further develop your ideas for commercialisation through our Ideas to Start-up final year project.



Primary Major Requirements		iDP Courses	
SEMESTER 1	Year 1 Core Courses	Settle into NUS	
SEMESTER 2	Common Curriculum Courses	4 units	Product Design and Innovation (or other electives)
SEMESTER 3	Year 2 Core Courses	4 units	Value Creation in Innovation (or other electives)
SEMESTER 4	Common Curriculum Courses	12 units	Ideas to Proof-of-Concept (or Complex Systems Design: From Mission to Prototype)
SEMESTER 5	Year 3 Core Courses and Electives	Student exchange or internship	
SEMESTER 6			
SEMESTER 7	Year 4 Electives	12 units	Innovation & Design Capstone or Ideas to Start-up (for second major only)
SEMESTER 8		8 units	iDP electives (for second major only)



# Our Student Projects

Innovation needs a team-based process to succeed. From day one, you will learn to work together on projects with peers from different disciplines while being mentored by faculty members with diverse backgrounds. Projects in iDP span different themes and also include many special competition teams.

## Innovating for Better Healthcare

Design solutions for healthcare needs in hospitals and the community.



Nasogastric tube training device for caregivers

## Innovating for Smarter Living

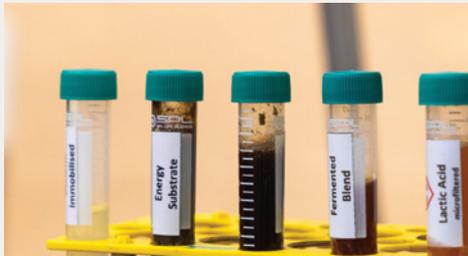
Design smart devices and solutions to enhance everyday life, work, and play.



Autonomous end-to-end wine glass washing and polishing system

## Innovating for Sustainable Cities

Design solutions to tackle challenges of urbanisation and sustainability.



Valorising food waste to produce sustainable chemicals

## Innovating for Future Mobility

Design future mobility solutions and novel vehicles for people and goods.



Electric blended wing body aircraft

## Innovations in Intelligent Systems

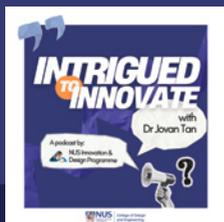
Design complex engineering systems and automation for various applications.



Autonomous robot for detection of invasive species

## Intrigued to Innovate

Tune in to this podcast to discover how our students address real-world challenges with innovation: their thoughts, motivations, and lessons learned.



## Innovating with Immersive Reality

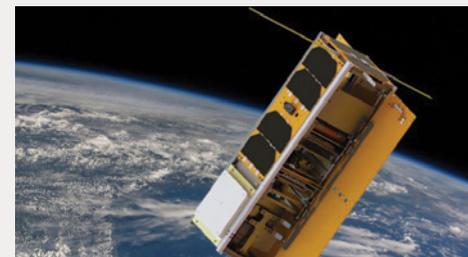
Develop novel applications using virtual reality, augmented reality, and generative AI.



Virtual reality childbirth delivery simulator

## Innovations in Space Systems

Design new technologies for applications in outer space.



Student-built Galassia nanosatellites

## Special Competition Projects

### Bumblebee

Design autonomous system of underwater vehicles, surface vehicles, and unmanned aerial vehicles.



### NUS Formula FSAE

Build, test, and race formula-style electric race cars in the annual FSAE Michigan competition.



### NUS Calibur Robotics

Design and fabricate specialised robots to compete in the DJI RoboMaster University Championship.



## Profiles of Current Students

### Charlyn Kwan Ting Yu

Bachelor of Engineering (Computer Engineering), Class of 2026  
NOC Toronto



"iDP is a truly rare opportunity that allows me to embrace my inner engineer and contribute to meaningful projects not found anywhere else in NUS."

### Muhammad Zakir Haziq Bin Mohd Padzal

Bachelor of Engineering (Engineering Science), Class of 2026  
NOC Malaysia



"I leverage my second major in iDP to fuse entrepreneurial creativity with engineering expertise, crafting prototypes like a computer vision-enabled boxing robot that seamlessly integrates my passion for sports and cutting-edge technology."

### Namit Deb

Bachelor of Computing (Computer Science), Class of 2027  
NUS CanSat Team



"I joined iDP because it provides me the opportunity to work on projects with a real-world impact, opening my eyes to the incredible feats we can achieve through innovation."

Students in iDP come from diverse disciplines within the College of Design and Engineering as well as other Colleges/Faculties/Schools in NUS, creating a very vibrant community that is passionate about their innovation, design, and entrepreneurship projects.

### Ong Jia Wen Amelia

Bachelor of Engineering (Biomedical Engineering), Class of 2026  
Duke-NUS Health Innovator Programme



"iDP lets me turn curiosity into real-world innovation. Being able to build ideas from scratch with strong mentorship has been one of the most meaningful parts of my NUS journey."

### Low Tse Han

Bachelor of Engineering (Electrical Engineering), Class of 2027  
Executive Producer, *Intrigued to Innovate*



"iDP gives me the rare opportunity to step out of my comfort zone, explore meaningful projects, and apply real-world engineering concepts with a practical, entrepreneurial-minded approach."

### Ong Tian Gui, Givson

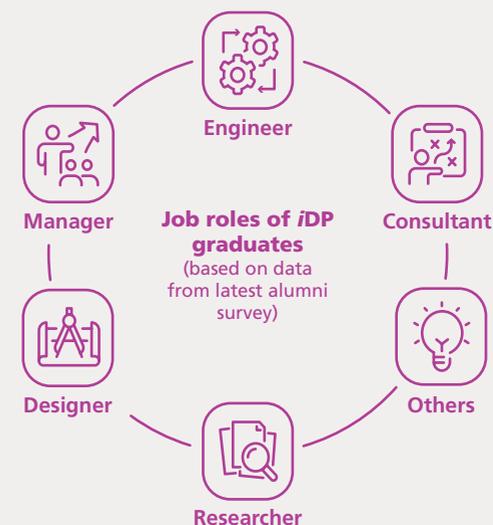
Bachelor of Arts (Industrial Design), Class of 2026  
NOC Stockholm



"iDP allowed me to work with students from engineering, social sciences, and the sciences, and introduced me to innovation frameworks and diverse perspectives that enriched my design process and helped me shape more grounded, real-world solutions."

## Where Our Graduates Go

iDP graduates go on to take up diverse roles like engineers, product designers, product managers, and consultants in a wide range of industries such as engineering, financial services, public service, and research and development. The majority of iDP graduates secure their first job before graduation. Many iDP graduates also founded their own start-up companies.



## Our Start-Up Founders

### Vishnu Saran

Bachelor of Engineering (Materials Science and Engineering), Class of 2019



#### CEO, Invigilo AI

*Invigilo is Singapore's leading AI video analytics solution provider for improving workplace safety in high-risk environments.*

### Chang Qingyang

Bachelor of Engineering (Civil Engineering), Class of 2021



#### Co-founder and CEO, ConcreteAI

*ConcreteAI is a construction technology start-up that develops solutions for real-time monitoring of concrete curing for construction companies to improve productivity and quality assurance.*

### Nguyen Tuan Dung

Bachelor of Engineering (Mechanical Engineering), Class of 2023



#### Co-founder and COO, HiveBotics

*HiveBotics is redefining the future of work by automating laborious and hazardous tasks, starting with restroom cleaning.*

### Nandiraju Rishi Bharadwaj

Bachelor of Engineering (Chemical Engineering), Class of 2024



#### Founder and Director, Innorini Life Sciences

*Innorini is an organisation that focuses on pioneering research and development in the pharmaceutical and nutraceutical domains.*

---

## How to Apply?

Students who are applying to any Design, Engineering, or Computing major may select *iDP* as a second major or minor in the NUS application form, or join *iDP* during their first or second year in NUS. Students who are applying to other majors may join *iDP* during their first or second year in NUS.

There is no specific requirement for admission into *iDP* other than enrolment in any primary major in NUS. We welcome applicants from all disciplines who are enthusiastic to be part of our unique learning experience.



### Contact

-  [cde.nus.edu.sg/edic/idp](https://cde.nus.edu.sg/edic/idp)
-  +65 6601 3320
-  [idp-query@nus.edu.sg](mailto:idp-query@nus.edu.sg)

*All information contained is accurate at the time of publication in February 2026.  
Do check our website for updates if any.*

---