



THE UNIVERSITY OF  
MELBOURNE

Faculty of  
Engineering and  
Information  
Technology

# Master of Digital Infrastructure Engineering



## What is digital infrastructure engineering?

Digital Infrastructure Engineering bridges the worlds of engineering and information technology. This dynamic field equips students with the skills to integrate data capture, data science, and analytics to create digital representations of our built and natural environments.

As a digital infrastructure engineer, you'll work with collected data from transport networks, satellites, and drones to generate actionable insights. These insights help us understand where resources are needed, how services are used, and how to make our cities smarter, more sustainable, and more resilient.

Whether supporting environmental sustainability, improving urban livability, or enabling rapid disaster response, digital infrastructure engineers play a critical role in shaping the future of infrastructure and society.

## Where will this take me?

You could work globally across any industry that uses or produces digital spatial data and platforms. You might fly a drone throughout a city to create a heat map, use satellite imagery to assess a natural disaster and provide resources to those in need, or maintain a digital twin of a city for real-time resource management. Our graduates work in digital engineering companies like Veris, global mobility providers like Grab, state governments and emergency response services, and NGOs like the Humanitarian OpenStreetMap Team. Our graduates are working at globally recognised companies such as:

- CSIRO
- Arup
- KPMG
- AECOM
- Deloitte
- EY
- Transurban
- Landlease
- GHD
- BCG
- WSP
- Telstra

## Key Info

**Designed & delivered by Geomatics Discipline**

### Duration

2-3 years

### Intake

Semester 1 (March)

Semester 2 (July)

### Designed for

Becoming an accredited engineer

### Accredited by

- EUR-ACE
- Engineers Australia (Provisional)
- Surveyors' Registration Board of Victoria

### Fees

CSPs available

International and domestic full fee places available

### Specialisations

Artificial Intelligence, Business, Communication Infrastructure, Construction, Cultural Heritage, Administration, Energy, Information Systems, Information Technology, Land, Mobility, Smart Cities, Sustainable Cities, Water

Scan to  
learn more



## Sample course plan

If you have not completed a major in Digital Infrastructure Engineering Systems in your undergraduate degree, study the 3 year Master of Digital Infrastructure Engineering:

Year 1	Semester 1	Sustainable Infrastructure Engineering	Engineering Risk Management	Applying Digital Infrastructure	Imaging the Environment
	Semester 2	Digital Systems for Infrastructure	Integrating Digital Infrastructure	Sensing and Measuring	Numerical Methods in Engineering

If you have completed a major in Digital Infrastructure Engineering Systems in your undergraduate degree, study the 2-year Master of Digital Infrastructure Engineering:

Year 2	Semester 1	Spatial Data Management	Interdisciplinary Design for Engineers	Spatial Data Analytics	Advanced Imaging
	Semester 2	The Ethics of Artificial Intelligence	Building Information Modelling	Information Visualisation	Remote Sensing
Year 3	Semester 1	Positioning Principles and Technologies	EMI Capstone	Digital Infrastructure Engineering Elective	Digital Infrastructure Engineering Elective
	Semester 2	Engineering Project Implementation		Digital Infrastructure Engineering Elective	Digital Infrastructure Engineering Elective

Core subject    Elective subject    Selective subject

These are sample course plans only. Subjects offered may change from year to year. You will be advised of current subject offering prior to subject selection and enrolment.

## Your Journey into Digital Engineering

### Choose an undergraduate degree:

<b>Bachelor of Science</b> Major in Digital Infrastructure Engineering Systems	<b>Bachelor of Design</b> Major in Digital Infrastructure Engineering Systems	<b>Bachelor of Commerce</b> Digital Infrastructure Engineering Systems (taking at least an additional year)
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### Continue with a 2-year Master's degree:

#### Master of Digital Infrastructure Engineering

With specialisations in AI, IT, information systems, land, construction, business, cultural heritage, energy, water, mobility, communication infrastructure, smart cities, and sustainable cities

### Exit to employment with professional accreditation

## Top 10 Future-Ready Skills You'll Gain

 <b>Digital Twin Development</b> Design and manage virtual replicas of real-world infrastructure.	 <b>Spatial Data Analytics</b> Turn complex geospatial data into smart insights.	 <b>Remote Sensing &amp; Imaging</b> Use satellite and drone data for environmental and infrastructure monitoring.	 <b>Information Visualisation</b> Communicate complex systems through intuitive visuals.	 <b>Positioning Technologies</b> Apply GNSS for precise digital mapping.
 <b>Building Information Modelling (BIM)</b> Create intelligent 3D models for planning & design.	 <b>Sensor &amp; IoT Integration</b> Capture real-time data using sensor networks and the Internet of Things.	 <b>Smart &amp; Sustainable Infrastructure Design</b> Build solutions for future cities and resilient communities.	 <b>Simulation &amp; Risk Analysis</b> Test & improve infrastructure through modelling & risk evaluation.	 <b>AI &amp; Ethical Tech Use</b> Leverage artificial intelligence responsibly in engineering systems.

## Industry Partners



**Susan Harris**  
CEO, ITS Australia

"Digital infrastructure is the backbone of intelligent transportation systems – knowing when and where is enabling smart transport solutions, and graduates in this discipline will realise some of them. I would like to congratulate UoM for its leadership in recognising and responding to this need with the establishment of the new Master of Digital Infrastructure Engineering."



**Kirk Mitchell**  
Head of APAC Partnerships  
Google Maps, Local Search & Google Earth

"My entire career has been spent in location and digital mapping. Through all this, I grew passionate about the power of teams and the impact that location data and technology was having in addressing many of the world's largest problems across transportation, climate and connectivity. Graduates in this area will contribute to the next generation's challenges."



Contact us