

2016

VICTORIA UNIVERSITY ENGINEERING AND SCIENCE

CELEBRATING
A CENTENARY OF
OPPORTUNITY 2016

vu.edu.au/engineering-science

Victoria University
CRICOS Provider No. 00124K (Melbourne)
CRICOS Provider No. 02475D (Sydney)
RTO Code: 3113



**VICTORIA
UNIVERSITY**
MELBOURNE AUSTRALIA



“The lecturers are experts in their field, sharing their own experiences and real-world knowledge.”

“The real-life scenarios at VU gave an insight into working life, rather than just learning through theory. The lecturers are experts in their field, sharing their own experiences and real-world knowledge.”

I’m now a project manager. I’ve been involved with and managed significant projects including the redevelopment of the former Pentridge Prison in Coburg into a housing estate, and a new air traffic control tower in Rockhampton, Queensland.”

—

Sarah Oleksiuk
Master of Project Management

“After so much practical training, VU students are ready to take on anything.”

BE THE EMPLOYER’S CHOICE

“VU courses are practical and industry-based so primary principles are taught in an applied, problem-based way.

The lecturers are real-life practitioners which is implicitly important. This is central to the strength of the courses.

I’ve targeted VU students as employees for the best part of two decades. They show commitment and drive, and after so much practical training during their studies, they’re ready to take on anything.”

—

Michael Jackson
Director, Woodburne Consulting



CHOOSE ENGINEERING AND SCIENCE AT VU

Do you dream of an innovative career in engineering, information technology or science?

Victoria University's unique Engineering and Science courses will help you achieve it. Our flexible pathways assist you in attaining higher qualifications, while our work placements and industry partnerships give you direct access to future employers and the skills you need to be their top choice.

Our programs embrace everything from environmental management to sports engineering, and our strong industry focus has led to the development of degrees available nowhere else in Victoria, such as architectural engineering.

Wherever you are on your career path, we have the courses, teachers, facilities and industry connections to ensure you reach your destination and are ready to make a difference from day one.

Most courses are delivered through the College of Engineering and Science and span the areas of architectural, civil, electrical and electronic, and mechanical engineering, as well as science and information technology.

Each course is designed to ensure you graduate work-ready with an understanding of the contemporary economic, environmental and social issues related to your industry.

We offer programs in postgraduate coursework and research – so you can pursue a career in an area of high demand, or tailor your study to a passion for a particular field.

Our future-focused research topics cover alternative energy, applied informatics and mathematics, biotechnology, chemical and analytical science, fire safety and risk engineering, sustainable building, water resources and more.

Conducted in collaboration with high-profile industry and community partners, our courses are designed to provide you with practical and hands-on work experience, so you graduate with all the right skills to land your dream job.

ENGINEERING AND SCIENCE COURSE AREAS

Courses are offered across a broad range of Engineering and Science specialisations, at vocational training (TAFE), undergraduate and postgraduate levels.

Our range of Engineering and Science specialisations includes:

- Applied Biology
- Architectural Engineering
- Biotechnology
- Building and Construction
- Building Surveying

- Chemical Sciences
- Civil Engineering
- Computer Engineering
- Computer Science
- Ecology and Sustainability
- Electrical and Electronic Engineering
- Engineering
- Engineering Science
- Engineering Technology
- Environmental Management
- Fire and Risk Engineering
- Information Technology
- Network Security
- Mechanical Engineering
- Network and Systems Computing
- Project Management
- Science
- Sports Engineering

For detailed information about all engineering and science courses visit vu.edu.au/engineering-science

Celebrating a Centenary of Opportunity

In 2016, Victoria University will celebrate a Centenary of Opportunity. The University has a long, rich history as a direct descendant of Footscray Technical School, which first opened its doors to students in February 1916.

With 100 years of experience in providing excellent opportunities to all our students and communities, today's VU can help you find true success through high-quality teaching and flexible study options that suit your lifestyle.

Join us in 2016 for our Centenary year and become a part of 100 years of tradition.



CELEBRATING
A CENTENARY OF
OPPORTUNITY 2016

VICTORIA UNIVERSITY

WE ARE MOST CONNECTED TO INDUSTRY

GAIN THE EMPLOYMENT EDGE

We prepare you for a career in engineering, information technology or science through strong partnerships with local and global engineering, informatics and scientific organisations.

We use these partnerships to inform our curriculum, provide shared resources, engage in multidisciplinary research and give you opportunities for workplace learning so you can graduate with relevant and up-to-date skills sought by employers in your industry.

Just some of our key partners include:

- Department of Environment & Primary Industries – Victorian Government laboratories
- Modern Olives Laboratories – chemical analysis of olive oil
- Foster's – brewing laboratories
- Racing Analytical Services – equine analyses
- Clariant – chemical synthesis
- National Measurement Institute – Federal Government analysis laboratory.

vu.edu.au/engineering-science/industry

INDUSTRY ACCREDITED

Industry accreditation is awarded to courses that best meet the needs of employers, and provide graduates with an optimum set of skills and knowledge. Many of our courses in engineering and science are industry accredited including our engineering programs accredited by Engineers Australia, and our Bachelor of Information Technology (Network and Systems Computing) accredited by the Australian Computer Society at professional level. We also have Course Advisory Committees (CACs) that meet regularly to provide expertise and advice on quality, currency and future-readiness of our courses to ensure that the courses align with industry trends and anticipated skills shortages.

PRACTICAL LEARNING

Preparing you for a career in engineering, information technology or science means bringing the real world into our courses.

We do this in a range of ways, including unique work placements with exciting venues such as Scienceworks museum, industry-sponsored projects and problem-based learning (PBL).

Extensive hands-on experience using industry standard equipment and techniques in state-of-the-art facilities gives you a practical edge – the hallmark of a VU education.

vu.edu.au/work-ready

PROBLEM-BASED LEARNING

We champion problem-based learning (PBL) in our courses. PBL is a team-based teaching and learning approach that encourages you to become a self-directed and independent learner.

This is part of our emphasis on students developing lifelong learning skills. Units delivered in PBL are central to the curriculum in preparing you to be work-ready upon graduation. PBL helps you develop:

- technical knowledge and skills
- problem-solving and critical thinking skills
- independent learning skills
- teamwork skills
- communication skills.

PBL uses problems as a stimulus for learning.

Problems often come from industry or the community. This provides a real-world context for learning and the development of 21st century skills.

GLOBAL LEARNING

You can take your studies global with a wide range of international study opportunities available in engineering, information technology and science. We have the largest international exchange program in Victoria with an extensive international network of partners.

For example, architecture students can take advantage of six-month placements at the University of Nebraska in Omaha, home to some of the largest engineering and construction companies in the US. These opportunities for unique experiences aim to enrich your study and prepare you for the global workplace.



FLEXIBLE PATHWAYS TO SUCCESS

WE BELIEVE THAT EDUCATION IS FOR EVERYONE

Our courses are designed to offer students from diverse backgrounds the opportunity to achieve success on their own terms. This includes flexible pathways and alternative entry programs to help you pursue your dream career, regardless of your prior experience or ATAR.

With one of the broadest range of scholarships of any university in Australia, we are renowned for providing educational opportunities to a wide range of students of all ages, cultures, and socioeconomic and educational backgrounds.

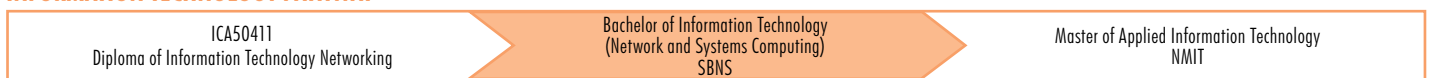
We offer a range of work-integrated study options, academic and personal support programs, and various entry and exit points between courses, including:

- vocational education programs
- bachelor degrees across a wide range of subject areas for those who may be unsure about which specialisations to follow, or require additional support while transitioning from vocational education
- specialist professional degrees
- industry-relevant postgraduate programs.

BUILDING AND SURVEYING PATHWAY



INFORMATION TECHNOLOGY PATHWAY



SAMPLE PATHWAYS

Above are samples of our many Engineering and Science course pathways to give you an idea of how pathways work. Note: unless otherwise indicated, these are not guaranteed pathways but suggested study journeys.

ENGINEERING AND SCIENCE PATHWAYS

We are one of the few universities in Australia to offer both vocational training (TAFE) and higher education. Our study pathways connect courses between vocational training and higher education, including postgraduate studies. This means that you can start your education journey at certificate level and proceed to a diploma, degree or even a PhD, exit the pathway when you achieve your immediate study goal, and re-enter if and when you choose to further your studies.

Pathways are designed to suit all types of students including those seeking career advancement, those wanting to develop their skills, and those seeking a career change or personal development.

vu.edu.au/pathways

FROM DIPLOMA TO DEGREE

We offer a streamlined pathway from some one-year diplomas straight into the second year of a bachelor degree, with full credit for the first year of the degree.

vu.edu.au/dip-into-degree

CREDIT FOR SKILLS AND PAST STUDY

We are committed to recognising previous studies and the life and work experiences that you bring with you when you decide to study with us. You can receive credit by matching your previous experiences and studies with the skills and knowledge covered in course units, allowing you to complete your studies sooner.

vu.edu.au/credit

SCHOLARSHIPS

UNDERGRADUATE

We offer the most comprehensive suite of undergraduate student scholarships of any university in Victoria.

vu.edu.au/scholarships

POSTGRADUATE COURSEWORK SCHOLARSHIPS

Visit our website for Victoria University and externally-funded postgraduate scholarships.

vu.edu.au/scholarships
researchscholarships@vu.edu.au

POSTGRADUATE RESEARCH SCHOLARSHIPS

We offer many living stipend scholarship programs for postgraduate research students.

vu.edu.au/research-scholarships
gradresearch@vu.edu.au

EQUAL OPPORTUNITY

We offer a range of special entry schemes for applicants who have been unable to reach their full educational potential or who may have restricted access to the courses of their choice because of their life circumstances.

vu.edu.au/access
03 9919 6100

We aim to ensure that students with a disability or medical condition are able to actively participate in all aspects of University life.

vu.edu.au/disability
disability@vu.edu.au
03 9919 5400

We encourage Indigenous Australians to apply for any of our courses. Our Moondani Balluk Academic Unit provides Indigenous students with support services.

vu.edu.au/moondani-balluk
moondani.balluk@vu.edu.au
03 9919 2836

"VU's pathways meant I could build on my qualifications one step at a time. The courses were flexible and the teachers were very supportive.

After finishing my studies, I got a job at one of the largest building surveying firms in Australia.

I have since started my own building surveying company. I thoroughly enjoy playing such an integral role in building safety."

—
Michael Tabone

CPC40110 Certificate IV Building,
CPC50210 Diploma of Building Surveying,
CPC60108 Advanced Diploma
of Building Surveying

A young man with short dark hair and a goatee, wearing a purple pinstriped dress shirt and a purple and white striped tie, is smiling broadly. He is holding a black folder containing several documents. The background is a blurred industrial or office setting with yellow and grey tones.

"The courses were flexible and the teachers were very supportive."

AT THE FRONTLINE OF ENGINEERING AND SCIENCE RESEARCH

Our Engineering and Science researchers are renowned for research excellence which means you have access to progressive thinkers, excellent facilities, and award-winning academics when you undertake your degree.

Many of our researchers enjoy international recognition for their contribution to the field of Engineering and Science. Through partnerships and collaborations, the work of our dynamic research community benefits students and staff across the University, as well as industry, the community and government.

We have recently added new courses to our postgraduate Engineering and Science portfolio, including the Master of IT and Master of Engineering which offer ideal pathways into exciting research careers.

RESEARCH FOCUS

Victoria University's Engineering and Science research was ranked highly in the most recent Excellence in Research for Australia (ERA) ratings. We received:

- **Well above world standard** in electrical and electronic engineering (including research into control systems and signal and image processing)
- **Above world standard** in applied mathematics
- **At world standard** in artificial intelligence, civil engineering, chemical engineering, distributed computing and food sciences.

VU conducts engineering and science research through the Institute of Sustainability and Innovation, the Centre for Environmental Safety and Risk Engineering, and the Centre for Applied Informatics.

We also have research groups on energy; telecommunications, electronics, photonics and sensors; applied mathematics; water resources; applied ecology; engineered packaging and distribution; and structural mechanics and materials.

vu.edu.au/graduate-research

INSTITUTE FOR SUSTAINABILITY AND INNOVATION

The Institute for Sustainability and Innovation (ISI) promotes and enables sustainable outcomes for industry and the community, based on environmental and innovative technologies. It provides industry and community solutions in water treatment technology, resource management, asset management, social and behavioural research, environment, e-research, smart energy, alternative energy and packaging.

vu.edu.au/isi

CENTRE FOR APPLIED INFORMATICS

The Centre for Applied Informatics (CAI) is a leading research group in computing and information technology, and IT applications. The aim of the Centre is to engage computer scientists, experts from application domains (including health, community, business and environments), industry and government partners to develop innovative information technology applications to benefit society.

vu.edu.au/cai

CENTRE FOR ENVIRONMENTAL SAFETY AND RISK ENGINEERING

The Centre for Environmental Safety and Risk Engineering (CESARE) carries out research on the spread of smoke and fire in buildings, fire extinguishment and the way structures respond to fire. The Centre's academic and research staff has experience in areas of structural behaviour and design, heat transfer, mechanical systems, human behaviour in fire, risk assessment, management and detection systems, and environmentally sustainable building design.

vu.edu.au/cesare

SPECIALISED ENGINEERING AND SCIENCE FACILITIES

We have three campuses in Melbourne's CBD and five across the western suburbs. All campuses are easily accessible by public transport.

Many of our Engineering and Science courses are delivered at our Footscray Park and Werribee Campuses, as well as our new 'Construction Futures' hub – a \$44 million specialised building and construction vocational training facility at our Sunshine Campus.

LABORATORY FACILITIES

We operate a number of laboratory facilities for teaching professional Engineering and Science courses, as well as for research activities. These facilities offer extensive training in analytical applications, theory of operation, optimisation, maintenance and troubleshooting. Computer workstations are freely available with access to a wide range of generic and discipline-specific software for numerical simulation and modelling, and experimental analysis.

ENGINEERING LABORATORIES

- **Architectural/Civil/Mechanical Engineering:** Materials Laboratory, Statics/Dynamics Laboratory, Mechanics Laboratory, and a Fluid and Environmental Engineering Laboratory with fluid mechanics and hydraulics facilities, including pluviometers, flowmeters and water quality monitoring equipment.
- **Architectural/Civil Engineering:** Concrete Laboratory, Survey Laboratory and Geomechanics Laboratory.
- **Architectural Engineering:** Architecture Laboratory.
- **Mechanical Engineering:** Thermodynamics Laboratory and Engine Laboratory.
- **Electrical/Sports Engineering:** Communications Laboratory, Microelectronics Laboratory and Soldering/Construction Laboratories for integrated circuit design and construction.
- **Electrical Engineering:** Power Systems Laboratory.

SCIENCE LABORATORIES

Our Shimadzu Analytical Laboratory at Werribee Campus gives undergraduates, researchers and the community ready access to state-of-the-art chemical instrumentation. Along with a supercritical NMR spectrometer at Footscray Park Campus, these two laboratories enable complete chemical analyses to be performed, such as pesticides in waste water, impurity profiling in pharmaceutical products, structure determination and heavy metal analysis.

Advanced Food System Research Laboratories offer you resources for advanced food research, including food processing, shelf-life enhancement, microbial and enzyme technology and engineering, and functional foods and nutraceuticals.

INFORMATION TECHNOLOGY FACILITIES

Information Technology facilities for students in both higher education and vocational education include computing and networking resources that enable the study and practice of a wide range of technologies. This prepares you for future professional practice, as well as IT industry certifications in networking and systems administration.

For example, you will have access to:

- a full set of Cisco routers and switches
- virtualisation platforms to create and manage virtual servers
- the latest software packages and resources, including net and Java integrated development environment, SDKs, and graphics and video authoring tools.

FIRE-TESTING FACILITIES

Facilities for our Fire and Risk Engineering students include fire-test furnaces, a four-storey building scale model, cone calorimeter and 3MW calorimeter, and an ISO room for fire safety applications.

GENERAL FACILITIES

LIBRARIES

Our campus libraries are known as 'learning commons' – integrated hubs that offer career advice, learning and IT support, and academic resources, all in a relaxed, lounge-like setting. Our 'learning commons' provide you with access to photocopying, computing and printing facilities, electronic and print resources, and a comprehensive information skills training program.

You will have access to a rich collection of online resources, 24 hours a day, seven days a week. These include databases or material housed within the library,

student email, e-learning content for courses, student software packages and innovative social networking tools.

vu.edu.au/library
vu.edu.au/student-tools

SPORT AND FITNESS

As Australia's leading sports university, we offer extensive sport services and facilities to all students, including:

- sport clubs, campus sport programs and representative sport opportunities
- quality fitness centres at Footscray Park, St Albans and Werribee Campuses

- a heated 25-metre swimming pool at Footscray Park Campus
- multi-purpose sports halls at Melton, Footscray Park and Footscray Nicholson Campuses
- tennis courts at Werribee, Footscray Park and St Albans Campuses.

vu.edu.au/sport

CHILDCARE

We operate multi-purpose childcare centres at the following campuses:

Footscray Park **03 9919 4578**
Footscray Nicholson **03 9919 8698**
Werribee **03 9919 8098**.

ACCOMMODATION

We own and operate a range of student accommodation, including Victoria Place, a modern apartment complex located just minutes from our Footscray Park Campus.

vu.edu.au/residences

HOUSING SERVICES

Our Student Housing Service provides free advice and assistance to students looking for housing as well as general tenancy advice.

housing@vu.edu.au

HOW MUCH WILL YOUR COURSE COST?

COURSE FEES AND FINANCIAL ASSISTANCE

Course costs vary between VE/TAFE and higher education courses, depending on whether you are a government-funded student or full-fee paying student, and the units you select.

Below you will find some important information and a general guide to costs.*

The latest information and a specific guide to study costs, including Victoria University's Unit Fee Schedule, is available on our website.

vu.edu.au/fees

VOCATIONAL EDUCATION/ TAFE FEES

The fees you pay as a Vocational Education/TAFE student depend on a number of factors, including:

- whether the course is government funded
- your citizenship status
- when you commence the course
- your age
- your prior qualification
- the units and course that you enrol in.

Additional fees may apply such as Student Services and Amenities Fee and material fees.

Some TAFE students may be eligible for a government subsidy (such as the Victorian Training Guarantee) to support tuition fees, depending on:

- citizenship status
- age at time of enrolment
- prior study completed.

VE/TAFE students are also required to pay an annual Student Services and Amenities Fee. In 2015 this amounted to \$200 for full-time government funded students, \$100 for part-time government funded students, \$40 for students studying off-campus and \$80 for concession card holders. Students studying less than 25 hours are exempt from the fee.

Visit vu.edu.au/ssaf for more information on Student Services and Amenities fees.

VET FEE-HELP is available to assist eligible students studying higher level vocational education and training (VET) qualifications to pay their tuition fees. Higher level VET qualifications are at the diploma level and above. VET FEE-HELP can be used to pay all or part of an eligible student's tuition fees, but cannot be used for additional study costs such as accommodation or text books.

Visit studyassist.gov.au for further information and to check eligibility.

HIGHER EDUCATION FEES

The options available to students enrolled in higher education courses are:

- Commonwealth Supported Place (CSP) – course fees are shared between students and the Australian Government, which subsidises your course fees.
- Full-Fee Place (FFP) – you must pay the full cost of your course.

All domestic undergraduate students at Victoria University are enrolled in a Commonwealth Supported Place (CSP).

This table shows the maximum student contribution and full-fee amount for 2015 admissions, per year of full-time study.

Higher Education students are also required to pay an annual Student Services and Amenities Fee. In 2015 this amounted to \$286 for full-time students and \$143 for part-time students.

POSTGRADUATE COURSEWORK DEGREE FEES

The University does not receive any government funding for postgraduate coursework student places, and students pay the full cost of their course. This is called a fee-paying place. Tuition fees are based on the units studied, rather than a fixed price for each course. Different units have different costs.

You can calculate your own individual course fees at vu.edu.au/fees

POSTGRADUATE RESEARCH DEGREE FEES

If you qualify for an Australian government funded place under the Research Training Scheme you will not be required to pay course fees.

If you are offered a full-fee paying place you can apply for FEE-HELP government assistance as outlined below.

INTERNATIONAL STUDENTS

For information on course fees as an international student, select your course from the list on the following web page: vu.edu.au/courses/international

PAYING YOUR FEES

There are several options available to help you with the costs involved in studying at university.

HECS-HELP

The Australian Government's Higher Education Loan Program, HECS-HELP, allows Australian citizens and Humanitarian Visa holders to borrow the amount of their student contribution and pay it back once in the workforce and earning a specified amount. You also have the option of paying some or all of your student contribution up-front and receiving a discount.

FEE-HELP

FEE-HELP is a government loan program that enables eligible students to defer the payment of their tuition fees.

studyassist.gov.au

FINANCIAL ADVICE

We offer free financial advice and information on all costs related to studying at university. This includes information about government assistance (such as HECS-HELP, Centrelink Youth Allowance and Austudy), household expenses, financial planning, student loans and tax.

vu.edu.au/financial-assistance

STUDENT CONTRIBUTION BAND	MAXIMUM STUDENT CONTRIBUTION (2015)	INDICATIVE FULL-FEE AMOUNT
BAND 1 Humanities, behavioural science, social studies, education, clinical psychology, foreign languages, visual and performing arts, nursing	\$6,152	\$15,167
BAND 2 Mathematics, statistics, computing, built environment, other health, allied health, science, engineering, surveying, agriculture	\$8,768	\$16,801
BAND 3 Law, accounting, administration, economics, commerce, dentistry, medicine, veterinary science	\$10,226	\$22,101

*All fee information provided here was correct at the time of printing. For the latest guide to fees and payment information, please refer to our website at vu.edu.au/fees

Note: Students are required to pay additional amenities fees annually. This information was extracted from the Australian Government's Study Assist website studyassist.gov.au



“My research will assist in controlling road deterioration.”

“I discovered my love for physics as a teenager, which led to engineering.”

My PhD research is focused on predicting vibrations generated by transport vehicles travelling on uneven roads.

The results will assist in controlling road deterioration and reducing damage to products during transport.”

—
Daniel Ainalis

Bachelor of Engineering
(Mechanical Engineering),
Doctor of Philosophy (Mechanical Engineering)

LEARN FROM THE BEST

Award-winning VU ecologist Dr Patrick-Jean Guay works with graduate students from around the world studying Australia’s wildlife. Dr Guay’s previous research looked into ways to safeguard the wild temperament of the endangered Tasmanian devil, which was found to be crucial to the animal’s survival.



HOW TO APPLY

UNDERGRADUATE AND TAFE

Most applications for undergraduate and vocational education (TAFE) courses are made through the Victorian Tertiary Admissions Centre (VTAC).

Information about all Victoria University courses offered through VTAC can be accessed on the VTAC website.

vtac.edu.au

Applications for courses not available through VTAC are made directly to the University. These include some undergraduate degrees, and vocational and further education (TAFE) programs. Details on how to apply for these courses are provided on our website.

vu.edu.au/apply

POSTGRADUATE

Applications for most postgraduate research and coursework programs are made direct to the University. Course indexes and hardcopy Direct Entry Application forms can be downloaded from our website.

vu.edu.au/apply

WANT TO
KNOW MORE?

Course and career advice

Phone 03 9919 6100 or 1300 VIC UNI

student.recruitment@vu.edu.au

vu.edu.au/courses

The Victorian Tertiary Admissions Centre (VTAC) website provides information on courses and how to apply for them.

vtac.edu.au

VU Open Day

Come to VU Open Day at Footscray Park Campus on Sunday 23 August 2015, 10am – 3pm

vu.edu.au/openday

Postgraduate coursework and research

vu.edu.au/postgraduate

Courses for international students

vu.edu.au/courses/international

Questions?

Ask us a question by visiting vu.edu.au/gotovu

ASKVU gives answers to common questions on anything from admission to graduation, including applications, enrolment, fees, exams and all other aspects of student life.

askvu.vu.edu.au

Connect with us



DISCLAIMER: The information in this publication was current at the publication date, March 2015. It is provided as information only and does not form any part of a contract between any person and Victoria University.

The content is relevant to Australian citizens, Australian permanent residents and New Zealand citizens. Please check the Victoria University website vu.edu.au for the most up-to-date detailed information.

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vu.edu.au/engineering-science

Victoria University CRICOS Provider No. 00124K

RTO Code 3113

For further course information
Phone 03 9919 6100
student.recruitment@vu.edu.au



vu.edu.au

OPEN DAY

23.08.15

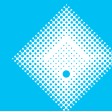
vu.edu.au/openday

Footscray Park campus
Ballarat Road, Footscray



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