Master of Professional Engineering

YOUR CAREER STARTS HERE...
Message from the Dean

Sometimes people suggest that the great innovations, the greatest advances, have already taken place – the Newton’s, the Edison’s, the Bell’s.

At UWA, we believe that history will prove otherwise. History will show that we have only just begun and we believe that the greatest challenges are still ahead of us.

The world is changing rapidly. We are faced with an increasing population, higher standards of living and greater expectations than ever before. We live in a world that requires smarter use of energy and resources – and real changes to the way we work, live and interact. We are challenged to develop technologies that fulfill the demands of our 21st century expectations.

These challenges require new ways of thinking and a greater ability to put those ideas into practice. This is why we are focused on providing the best possible learning environments for the leaders of tomorrow.

A dynamic blend of cutting-edge research, state-of-the-art teaching facilities and industry partnerships makes UWA a place that truly breeds excellence and fosters ingenuity.

Our engineering courses are designed to address the changes in the world. With practical and theoretical learning, we provide the exciting and engaging environment required to inspire creativity, innovation and collaboration.

We look forward to welcoming you to Engineering at UWA. We invite you to participate in an exciting and rewarding experience that will make you a sought-after graduate, with an internationally recognised education, ready to change the world.

John Dell
Dean
Faculty of Engineering, Computing and Mathematics

Achieve international excellence

No matter where you decide to take your engineering career, at the heart of UWA’s vision is international excellence. As a result, high priority is attached to the quality of teaching and research, and to graduate outcomes. The proportion of the University’s graduates accepted into full-time employment is among the highest in Australia, and UWA graduates consistently have the best success rates in gaining full-time employment when compared with graduates from other Western Australian universities.

UWA is also the only Western Australian university to belong to the Group of Eight, a collaboration of the top research universities in Australia. The Faculty of Engineering, Computing and Mathematics is proud to have extensive relationships with engineering companies such as Apache, BHP, Chevron, Rio Tinto and Woodside through a number of high profile research projects.

The engineering hub of the world

Western Australia (WA) is a dynamic place for any aspiring engineer. Often referred to as the ‘engineering hub of the world’, WA is the fastest growing state in Australia, with much of this growth directly attributed to the State’s strong mineral and petroleum resource base.

The abundance of these resources has led to the creation of many large-scale engineering projects, which in turn generate thousands of new engineering jobs. The mining sector of WA in particular is seeking skilled professional engineering graduates across all fields. In exchange you can enjoy the highest graduate starting salaries in the industry and excellent opportunities for travel.

There has never been a better time to enter the dynamic and exciting world of engineering and take advantage of the career prospects that await you in this resource-rich state.

Postgraduate study for a changing world

The Master of Professional Engineering (MPE) has been developed in consultation with industry to equip you with the advanced technical expertise, critical thinking and professional skills required to remain competitive in a global workforce.

The course enables you to specialise in a field of engineering through a mix of advanced engineering technical units, a design and research project and professional units. Your engineering project will provide you with the opportunity to thoughtfully apply your skills and work creatively as part of a team across the breadth of the project, preparing you for real-world application.

Upon successful completion, you will have an internationally recognised qualification that allows you to practice as a professional engineer. As is standard practice for new courses, provisional accreditation from Engineers Australia is currently being sought. Full accreditation will occur upon graduation of the first cohort of students from the Master of Professional Engineering in 2014/15.

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Pathway to professional engineering

The pathway to professional engineering is now easier and more accessible than ever before at UWA.

Pathway options

- Graduates with a UWA bachelor’s degree and major in Engineering Science or Computer Science
- Graduates with a bachelor’s degree in a non-engineering area of study (e.g., Bachelor of Science)
- Graduates with a bachelor’s degree and prior studies in engineering, maths, physics or computing
- Master of Professional Engineering Preliminary (1 semester – 1.5 years (3 semesters) full-time)

PROFESSIONAL POSTGRADUATE DEGREE
Master of Professional Engineering (2 years full-time/4 semesters)

Course structure

**Year 1**

Core unit | Core unit | Core unit | Core unit
--- | --- | --- | ---

**Year 2**

Specialist unit | Specialist unit | Specialist unit | Specialist unit
--- | --- | --- | ---

Design project | Design project | Research project | Research project

Master of Professional Engineering programs

The Master of Professional Engineering is a two-year postgraduate course specialising in a chosen field of engineering.

Beyond practice as a professional engineer, this course will equip students to pursue further research studies in engineering, as well as to seek employment in a wide range of related industries.

Programs

- Chemical Engineering
- Civil Engineering
- Electrical/Electronic Engineering
- Environmental Engineering
- Mechanical Engineering
- Mining Engineering
- Software Engineering

This pathway allows a graduate with a bachelor’s degree in science for example, to become a professionally qualified engineer in 3 – 3.5 years (depending on prior study and whether the course is studied full-time or part-time).

* A non-award course is a program of study which does not lead to a formal award. It may comprise a unit or units of study from an award course and may be counted as credit towards an award course in some cases.
Admission requirements

In addition to the admission requirements listed below for each course, all students must meet the University’s required level of English language competency (visit www.studyat.uwa.edu.au/elc).

Master of Professional Engineering

Domestic applicants
- A UWA bachelor’s degree with a major in Engineering Science (or Computer Science for students seeking to do Software Engineering); or
- The Master of Professional Engineering Preliminary in the engineering field relevant to the choice of program; or
- A recognised bachelor’s degree or equivalent, completed in an area of engineering relevant to the choice of program, and with the equivalent of a UWA weighted average mark of at least 65%.

International applicants
- A recognised bachelor’s degree or equivalent, completed in an area of engineering relevant to the choice of program; or
- A UWA bachelor’s degree with a major in Engineering Science (or Computer Science for students seeking to do Software Engineering); or
- A Master of Professional Engineering Preliminary in the engineering field relevant to the choice of program.

Master of Professional Engineering Preliminary

Domestic applicants
- A recognised bachelor’s degree in any field, completed with the equivalent of a UWA weighted average mark of at least 65%, or equivalent; and
- Prior study of prerequisite units equivalent to WACE Mathematics: Specialist 3C/3D, Mathematics 3C/3D, Physics 3A/3B and Chemistry 3A/3B.

International applicants
- A recognised bachelor’s degree, or equivalent, completed to an appropriate academic standard; and
- Prior study of prerequisite units: Mathematics with Calculus, Chemistry and Physics, or equivalent.

International students
International students should also visit www.international.uwa.edu.au/students/esos for more information about the study environment, course fees and refund policy, support services and schooling obligations for dependent children.

Engineering careers

Chemical Engineer
Chemical engineers design the methods and equipment that are used in the transformation of basic, raw materials into useful products. They seek out new and more efficient processes and materials, or improve or find new uses for existing materials. As a chemical engineer, you will find the major employing industries include manufacturers of iron and steel basic products, organic industrial chemicals, the minerals industry and petroleum refiners. You may also have the opportunity to move into related areas including biotechnology, food engineering and mineral engineering, along with government agencies and state authorities concerned with gas, electricity, water supply and environmental protection.

Civil Engineer
As a civil engineer, you will have an impact on almost every aspect of our lives. You will plan, design, construct and maintain the facilities which society relies upon, such as bridges, roads, tunnels, airports, railways, harbours, reservoirs, water supply, dams, power stations and buildings of every sort. You may be employed by a government department or agency, municipal authority, civil engineering contractor or mining company, or you may be part of the smaller proportion of civil engineers that work in research activities and teach in industrial, government and university research establishments.

Electrical/Electronic Engineer
The field of electrical and electronic engineering encompasses all kinds of essential human activity and enterprise. The rapid proliferation of new discoveries, products and markets in this discipline has provided a broad range of career opportunities for graduates. As an electrical or electronic engineer, you may work in fields as diverse as communications, aviation, aerospace, defence, robotics, biomedical, biotechnical, information technology, home appliances and entertainment, manufacturing, biomedical engineering and meteorology.

Environmental Engineer
Environmental engineers combine their knowledge of environmental systems with fundamental engineering skills and principles to find creative solutions to pressures facing our environment. Environmental engineers often engage in consultancy work. Other careers can be found within a large construction company or mining organisation, large forestry organisation, regulatory authority or government department.

Mechanical Engineer
Mechanical engineering opens the door to employment in many areas as a result of the broad-based knowledge you will develop enabling you to move easily between industries. Some popular career pathways include the building, minerals, construction, power, manufacturing and processing industries, where you will design and oversee the development, installation, operation and maintenance of machinery, solve practical engineering problems and improve efficiency.

Mining Engineer
Mining engineering encompasses all the processes involved in extracting ore from the ground. As a mining engineer you will be responsible for analysing and designing the most suitable mining method for a project, the best equipment to efficiently perform the task and the most appropriate blasting technique. An integral part of your role will be to take on the challenge of selecting the most environmentally responsible methods, with the aim of minimising environmental impact. You may also be involved in the manufacture and supply of mining machinery or explosives. Mining engineers most commonly find employment in a mining company as a contractor or within a government department.

Software Engineer
Software engineers apply the principles and techniques of computer science, engineering, and mathematical analysis to the design, development, testing, and evaluation of the software and systems that enable computers to perform their many applications. Career opportunities are available across a range of industries, in particular in the business and government sector in organisations that are concerned with software development on a large scale.

www.ecm.uwa.edu.au
Further Information

Faculty of Engineering, Computing and Mathematics
The University of Western Australia
M017, 35 Stirling Highway
Crawley WA 6009
Tel: + 61 8 6488 3061
Fax: +61 8 6488 1026
Email: enquiries-ecm@uwa.edu.au
Enquiries: www.ask.uwa.edu.au
www.ecm.uwa.edu.au

While the UWA Faculty of Engineering, Computing and Mathematics has made every effort to ensure that information contained in this brochure is accurate, courses may be subject to change. For up-to-date information, please contact us or visit www.ecm.uwa.edu.au