

Built Environment and Engineering



Mohammed Ahsan India
PhD in Engineering Systems

QUT has a dynamic research environment and opportunity for real, practical study. The facilities and professional development opportunities are helping me prepare for a career in advanced nanotechnology research.



Regina Whetstone USA
Student Exchange

Friends at my home university, Purdue, had told me how much they enjoyed their time at QUT, so I really wanted to experience it for myself. The staff and students are very friendly and Brisbane is a beautiful city to study and live in.

Why choose Built Environment and Engineering at QUT?

- QUT programs are regularly reviewed in line with industry advice and our courses are designed to meet the career needs of graduates. New areas include Infrastructure Planning and Management, Engineering Systems Management and Project and Engineering Management.
- QUT was the only Australian university appointed as a learning partner by Shell in a consortium (four universities) to support its global project academy.
- We have entered into a collaborative research arrangement with CSIRO to undertake research that will enable civilian uses of Unmanned Airborne Vehicles (UAVs).
- Our researchers are designing a new generation of artificial hearts that could extend cardiac patients' lives by 10 or more years.
- Our scientists are developing cheap portable personal solar cells able to recharge laptops and mobile phones.
- Our research in Building and Infrastructure Systems helps communities to live and work in buildings which are safe, environmentally friendly and cost effective.
- We are the only university in Queensland to provide the Power Engineering Supply Training Course.

Global links

- Shell Project Academy
- ICALL (International Construction Research Alliance (Stamford University, Salford University, Vtt Finland, Centre Scientific et Technique Du Batimat, France)
- Construction Industry Institute (Texas, Europe, Australia, Hong Kong)
- City University Hong Kong
- University of Indonesia
- Shanghai Jiao Tong University (China)
- Indian Institute of Technology, Roorkee
- TU, Delft (Netherlands)
- Universitas Pelita Harapan (Indonesia)

International accreditations

Our Faculty has international accreditation with international professional associations and local associations in the UK, New Zealand, Hong Kong, Singapore and Malaysia.

Facilities

- Aerospace flight simulator
- Architectural science and lighting laboratory
- Computer visualisation laboratory
- High-tech lecture/seminar rooms
- Human centred design and usability laboratory
- Mechatronics and Robotics Library
- Lighting and colour laboratory

- Mechanical workshop
- Postgraduate student centre
- Research resources laboratory
- Speech laboratory
- Student common rooms
- Student experiential learning centre
- Synthetic environment laboratory
- Timber, metals and plastics workshops
- 24 hour computer laboratories

Number of students

6000

Research strengths

Medical engineering – biomechanics simulation and modelling; orthopaedics and traumatology

Design – sustainable systems and design tools

Smart systems – image and signal processing; robotics and automation; infrastructure and asset management

Infrastructure

- Transport and land use
- Soil and water
- Power engineering
- Built environment and asset management
- Planning and housing
- Aerospace and avionics

www.qut.edu.au/bee



Course information

MASTERS DEGREES (COURSEWORK)

Master of Architecture (DE80)

CRICOS code: 056390G

Indicative fee: \$11,300 per semester (subject to annual review)

CAMPUS: Gardens Point

Semester of entry: February

Duration: 1 year (2 semesters) full-time

Program objectives:

The Master of Architecture enables you to develop advanced understanding in architectural design and research, contextual studies, technology and science and studies for professional practice.

Entry requirements:

All students entering the Master of Architecture must have completed the Bachelor of Design (Architectural Studies) or equivalent four years of full-time study in an accredited architecture program (including a three-year or four-year Bachelor degree).

Admission of applicants from equivalent accredited architecture courses will be based on evaluation of a full and authorised transcript of the applicant's academic record demonstrating completion of four years of architectural education equivalent to QUT's Bachelor of Design (Architectural Studies).

Why choose QUT for the Master of Architecture program?

Architecture is a well-established profession with an extensive history both in practice and as a discipline within the university setting. The moral and ethical purpose of architectural practice is to serve communities through practitioner engagement with designing, promoting and overseeing the procurement of built environments that sustain and celebrate human occupation.

A focus on sustainable systems and the application of advanced digital design tools to address sustainability is driving the architectural curriculum at QUT; hence it is a key focus of the Master of Architecture course.

Career outcomes:

Graduates of the Master of Architecture meet the academic requirements for membership of the Australian Institute of Architects (AIA). Graduates who have also completed two years of practical architectural experience, of which at least one year is postgraduate architectural experience, will be eligible to undertake the Architectural Practice Examination, which will enable the graduate, if successful, to be eligible for registration with any Board of Architects in Australia.

Course structure:

Year 1—Semester 1

- Master studio A
- Architectural theory and research 1
- Contemporary architectural culture
- Advanced topics in architectural technology

Year 1 – Semester 2

- Master studio B
- Architectural theory and research 2
- Advanced studio in integrated technology
- Professional practice

Master of Design (Urban Design) (DE50)

CRICOS code: 060812M

Indicative fee: \$12,000 per semester

Campus: Gardens Point

Semester of entry: February and July

Duration: 1 year (2 semesters) full-time

Program objectives:

The Master of Design addresses the issues of professional development in the design fields of built environment and engineering. It aims to enhance and advance your skills and understanding of the design disciplines through explorations in social, historic, economic, legal, and technological processes and systems that act upon our environments and products. This course advances abilities in visual and design literacy, communication, and design processes, through the integration of aspects of sustainability, project management, leadership, and design project applications. Early exit with a Graduate Diploma is available upon completion of four units in the course.

Entry requirements:

A four-year full-time Bachelor degree in a relevant discipline area, or equivalent qualification determined by the Faculty, and a grade point average of 5.0 or more (on a 7-point scale) in that study. Applicants from a non-relevant background may gain entry through successful completion of BN85, the Graduate Certificate in Built Environment and Engineering.

Career outcomes:

Graduates become specialist urban designers within their chosen professional field, or use the skills and knowledge gained to diversify their capabilities across a broader spectrum of design disciplines. In particular this course provides the skills and knowledge to become a leader and manager of urban design processes, both in the development and implementation of urban design policy and urban design practice. Graduates may typically work in either private practice as urban designers, or in government organisations as urban policy developers and implementers.

Course structure:

Year 1— Semester 1

- Project Management Principles
- Urban Design and Theory Studio A
- Communication, Negotiation and Leadership
- Theory Research Project A

Year 1 – Semester 2

- Sustainable Practice in Built Environment and Engineering
- Urban Design and Theory Studio B
- Integrated Project
- Theory Research Project B

Early exit with a Graduate Diploma is available after completing two common units and two specialisation units.

Master of Engineering Management (BN87)

CRICOS code: 006368G

Indicative fee: \$12,100 per semester

Campus: Gardens Point

Semester of entry: February and July

Duration: 1 year (2 semesters) full-time

Program objectives:

This course offers an engineering management qualification to practising engineers through a formal qualification in management with advanced engineering skills and knowledge. You can choose to specialise in manufacturing or maintenance engineering. Early exit with a Graduate Diploma is available upon completion of four units in the course.

Entry requirements:

A four-year full-time Bachelor degree in a relevant engineering discipline area, or equivalent qualification determined by the Faculty, and a grade point average of 5.0 or more (on a 7-point scale) in that study. Applicants from a non-relevant background may gain entry through successful completion of BN85, the Graduate Certificate in Built Environment and Engineering.

The information contained in this publication is correct at the time of printing (March 2011) but is subject to change. For detailed information on QUT courses, please visit www.qut.edu.au/courses

Career outcomes:

The Master of Engineering Management allows graduates to become specialist engineering managers within their chosen professional field, particularly to become a leader and manager of engineering processes. Graduates can also use the skills and knowledge gained to diversify their capabilities across a broader spectrum of engineering disciplines.

Course structure:

Year 1 – Semester 1

- Project Management Principles
- Engineering Knowledge Management
- Communication, Negotiation and Leadership
- Total Quality Management

Year 1 – Semester 2

- Sustainable Practice in Built Environment and Engineering
- Asset and facility Management
- Enterprise Resource Planning
- Integrated Project

Early exit with a Graduate Diploma is available after completing two common units and two specialisation units.

Master of Engineering (Systems) (EN50)

CRICOS code: 060811A

Indicative fee: \$12,200 per semester

Campus: Gardens Point

Semester of entry: February and July

Duration: 1 year (2 semesters) full-time

Program objectives:

This course provides a developmental path for professional engineers to master skills in selected engineering disciplines and the interaction of those disciplines. It aims to enhance your skills in dealing with more complex engineering problems and interactions between engineering technical domains and the broader context in which they exist. Systems engineering is concerned with the design, operation

and maintenance of electrical and mechanical systems that are employed in medical, aerospace, industrial settings, and in communications technology. This course advances your capabilities in information literacy, problem solving, application of theory, engineering design, communication, and interaction with other professionals. Early exit with a Graduate Diploma is available upon completion of four units in the course.

Entry requirements:

A four-year full-time Bachelor degree in a relevant engineering discipline area, or equivalent qualification determined by the Faculty, and a grade point average of 5.0 or more (on a 7-point scale) in that study. Applicants from a non-relevant background may gain entry through successful completion of BN85, the Graduate Certificate in Built Environment and Engineering.

Career outcomes:

Graduates may choose to become a specialist systems engineering practitioner within their chosen professional field, or use the skills and knowledge gained to diversify their capabilities across a broader spectrum of systems-related disciplines. In particular, this course provides graduates with the skills and knowledge to become a leader, manager and innovator in the chosen discipline. Graduates may typically work in government, semi-government or private organisations as electrical, mechanical, biomedical or avionics engineers.

Course structure:

Year 1 – Semester 1

- Project Management Principles
- Advanced Signal Processing and Systems
- Communication, Negotiation and Leadership
- Engineering Optimisation

Year 1 – Semester 2

- Systems Design
- Control Systems
- Sustainable Practice in Built Environment and Engineering
- Integrated Project

Early exit with a Graduate Diploma is available after completing two common units and two specialisation units.

Master of Infrastructure Management (BN88)

CRICOS code: 060807G

Indicative fee: \$12,100 per semester

Campus: Gardens Point

Semester of entry: February and July

Duration: 1 year (2 semesters) full-time

Program objectives:

This course addresses the main concepts and methodologies of infrastructure planning and management. It aims to advance and enhance your skills and understanding of the diverse types of infrastructure assets planning and management, including the environmental, social, institutional assessments, and economic and financial aspects of infrastructure management. Early exit with a Graduate Diploma is available upon completion of four units in the course.

Entry requirements:

A four-year full-time Bachelor degree in a relevant discipline area, or equivalent qualification determined by the Faculty, and a grade point average of 5.0 or more (on a 7-point scale) in that study. Applicants from a non-relevant background may gain entry through successful completion of BN85, the Graduate Certificate in Built Environment and Engineering.



Career outcomes:

Graduates may choose to become a project manager, asset manager, planner within an infrastructure organisation, or use the skills and knowledge gained to diversify their capabilities across a broader spectrum of construction disciplines. In particular, this course provides graduates with the skills and knowledge to become leaders and managers of infrastructure planning and management.

Course structure:

Year 1 – Semester 1

- Project Management Principles
- Infrastructure Planning and Management
- Communication, Negotiation and Leadership
- Water Resource and Waste Management

Year 1 – Semester 2

- Asset and Facility Management
- Transport Infrastructure
- Sustainable Practice in Built Environment and Engineering
- Integrated Project

Early exit with a Graduate Diploma is available after completing two common units and two specialisation units.

Master of Project Management (BN89)

CRICOS code: 060815G

Indicative fee: \$12,000 per semester

Campus: Gardens Point

Semester of entry: February and July

Duration: 1 year (2 semesters) full-time

Program objectives:

This course is designed to provide you with appropriate knowledge and experience in managing projects in professional organisations. It addresses the main concepts and methodologies of project management and provides you with educational opportunities for advanced study following your graduation in a relevant discipline. This course aims to produce project managers capable of ensuring project success through the management of constraints in time, cost and quality, as well as of social, political and environmental challenges. Early exit with a Graduate Diploma is available upon completion of four units in the course.

Entry requirements:

A four-year full-time Bachelor degree in a relevant discipline area, or equivalent qualification determined by the Faculty, and a grade point average of 5.0 or more (on a 7-point scale) in that study. Applicants from a non-relevant background may gain entry through successful completion of BN85, the Graduate Certificate in Built Environment and Engineering.

Why choose QUT for the Master of Project Management program?

Students have the opportunity to be involved in real-world projects with practitioners from industry or major research centres. BEE graduates have been recognised nationally and internationally for excellence in their field winning a number of prestigious awards. For more information visit www.qut.edu.au/bee

Career outcomes:

Graduates will have the necessary expertise to take on managerial roles in projects of their chosen profession. They will have acquired professional experience, which will enable them to manage project goals within constraints, contribute to strategic decision making through understanding a range of speciality areas relevant to project management. They will also make a difference to professional practice by introducing project-based practices and a project management approach.

Course structure:

Year 1 – Semester 1

- Project Management Principles
- Project Scope and Risk Management
- Communication, Negotiation and Leadership
- Resource schedule and Performance Management

Year 1 – Semester 2

- Procurement and Delivery strategies
- Human Resource and Organisational culture
- Sustainable Practice in Built Environment and Engineering
- Integrated Project

Early exit with a Graduate Diploma is available after completing two common units and two specialisation units.

Master of Urban Development (UD50)

CRICOS code: 060809F

Indicative fee: \$12,000 per semester

Campus: Gardens Point

Semester of entry: February and July

Duration: 1 year (2 semesters) full-time

Program objectives:

This course aims to enhance and advance the range of knowledge, skills and social understanding required to operate professionally within the urban development context. The course sets practice within the broader socio-economic and political contexts that influence the development of policy and infrastructure in the built environment. The course is designed to offer graduates the full range of knowledge, skills and social understanding required to become a successful urban and regional planner. Early exit with a Graduate Diploma is available upon completion of four units in the course.

Entry requirements:

A four-year full-time Bachelor degree in a relevant urban development discipline area, or equivalent qualification determined by the Faculty, and a grade point average of 5.0 or more (on a 7-point scale) in that study. Applicants from a non-relevant background may gain entry through successful completion of BN85, the Graduate Certificate in Built Environment and Engineering.

Career outcomes:

Graduates can expect to be in demand in government departments, planning and development enterprises and consultancies, and in the voluntary sector, both in Australia and overseas. Opportunities include development planning and assessment, consultancy within the urban design field, regional planning, plan and policy preparation for land use, environment, housing, transport, recreation, education, community engagement and development, and corporate planning.



Course structure:

Year 1 – Semester 1

- Project Management Principles
- Urban Planning Practice
- Master Concepts and Ethics Seminar
- Communication, negotiation and Leadership

Year 1 – Semester 2

- Regional Planning Practice
- Community Planning
- Sustainable Practice in Built Environment and Engineering
- Integrated Project

Early exit with a Graduate Diploma is available after completing two common units and two specialisation units.

Graduate Certificate in Built Environment and Engineering (BN85)

CRICOS code: 060808G

Indicative fee: \$11,600 per semester

Campus: Gardens Point

Semester of entry: February and July

Duration: 1 semester full-time

Program objectives:

This course serves as a preparation and pathway program for students wishing to enter a masters program in the Faculty of Built Environment and Engineering. It is particularly aimed at students with either a three-year undergraduate degree, or a degree in a different area to the masters of their choice.

Entry requirements:

A four-year full-time Bachelor degree in a relevant discipline area; or a three-year full-time diploma and three or more years of relevant professional experience in a relevant discipline; and a grade point average of 5.0 or more (on a 7-point scale) in that study, or an equivalent qualification determined by the Faculty.

MASTERS DEGREES (RESEARCH)

Master of Applied Science (Research) (BN71)

CRICOS code: 007897G

Indicative fee: \$13,600 per semester

Campus: Gardens Point

Semester of entry: at any time

Duration: 2 years (4 semesters) full-time

Course objectives:

From this research degree students acquire advanced knowledge of applied science research methods, applied to research problems in the built environment. As well as mastering relevant techniques, students can expect to develop high-level skills in investigation and critical thinking and extensive knowledge in a specialist area.

Specialisations are available in all the design and built environment disciplines available in the Faculty (including Property Economics, Construction Management, Landscape Architecture, Interior Design, Industrial Design, Architecture and Planning), with specialisations in the Faculty research themes of Sustainability, and Design. Students are encouraged to approach potential supervisors early in the development of the research proposal that forms part of their application.

Master of Research studies normally include assessed coursework; participation in university scholarly activities such as research seminars, teaching and publication; regular meetings with supervisors; a program of supervised research and investigation; and preparation of a thesis.

Why choose QUT for built environment research?

Students have the opportunity to be involved in real-world projects with practitioners from industry or major research centres or research specialisations. For example a new generation of artificial hearts that could give cardiac patients 10 or more extra years of life.

Academic entry requirements:

Applicants must hold a four-year degree in an appropriate discipline with honours or equivalent qualification or a graduate diploma or masters degree in an appropriate discipline with a minimum grade point average of 5 out of 7 with relevant experience or professional experience and/or other qualifications.

Master of Engineering (Research) (BN72)

CRICOS code: 003465J

Indicative fee: \$13,700 per semester

Campus: Gardens Point

Semester of entry: at any time

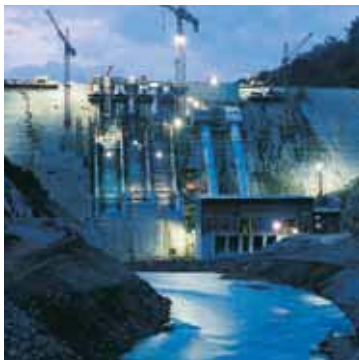
Duration: 2 years (4 semesters) full-time

Program objectives:

This research program for professional engineers equips students with skills to solve complex industrial problems. The program is available in all engineering disciplines available in the Faculty (including Civil, Electrical, Mechanical, Medical, Environmental and Telecommunications Engineering), with specialisations in the Faculty research themes of Sustainability, Medical Engineering and Smart Systems (see above for details).

In completing the course students apply themselves to real-world problems in a research project which would usually be sponsored by industry, government authorities, professional organisations or QUT. Students can enhance their preparation for the research project by completing coursework units as part of their program.

Master of Research studies normally include assessed coursework; participation in university scholarly activities such as research seminars, teaching and publication; regular meetings with supervisors; a program of supervised research and investigation; and preparation of a thesis.



Why choose QUT for your research and thesis?

Students have the opportunity to be involved in real-world projects with practitioners from industry or major research centres or research specialisations. For example a collaborative research arrangement to undertake world class research that will enable civilian uses of Unmanned Airborne Vehicles (UAVs).

Academic entry requirements:

Applicants must hold a four-year degree in an appropriate discipline with honours or equivalent qualification or a graduate diploma or Masters degree in an appropriate discipline with a minimum grade point average of 5 with relevant experience or professional experience and/or other qualifications.

DOCTORAL

Doctor of Philosophy (Built Environment, Engineering) (IF49)

CRICOS code: 006367J

Indicative fee: \$13,700 per semester

Campus: Gardens Point

Semester of entry: at any time

Duration: 3 years (6 semesters) full-time; External 8 semesters full-time or 12 semesters part-time

Program objectives:

This program provides in-depth research training in particular areas of built environment and engineering while broadening knowledge in a chosen discipline area. In the external program candidates conduct research away from QUT, often in the workplace, either in Australia or overseas. Videoconferencing, email and other technologies make it possible for candidates to participate in activities such as seminar delivery and progress reporting.

Candidates would normally undertake their Confirmation of Candidature and Final Seminar in person. A QUT staff member of the supervisory team would normally visit the candidate at their research site at least once during their candidature. External candidates must normally spend a minimum of three months at QUT and be present in person for their Confirmation of Candidature and Final Semester.

Doctoral studies normally include assessed coursework; participation in University scholarly activities such as research seminars, teaching and publication; regular meetings with supervisors; a program of supervised research and investigation; and preparation of a thesis.

Why choose QUT for a PhD in built environment?

Students have the opportunity to be involved in real-world projects with practitioners from industry or major research centres or research specialisations. An example of this is QUT researchers who have helped launch Australia's first satellite in more than 30 years.

Academic entry requirements:

Applicants must possess a first class or second class division A honours degree, an appropriate masters degree (research or coursework), or a professional doctorate, from a recognised institution. Masters degree by coursework and professional doctorates must contain a significant research component, of no less than 33 per cent of the total degree, and must have a GPA of at least 5.5 on a 7-point scale.

Scholarships:

The Faculty of Built Environment and Engineering (BEE) offers a number of full tuition and half tuition scholarships to assist international students. For more information about BEE international scholarships visit www.qut.edu.au/bee

Credit and advanced standing

QUT may offer you credit based on your previous studies. Please check individual course listings on www.qut.edu.au/courses for more details on credit or advanced standing.

Additional costs may be incurred by students in particular courses, for example engineering students may need safety equipment for site visits and creative artists may need materials. Please refer to www.qut.edu.au/fees to check for any additional course costs.



Course progression and awards:

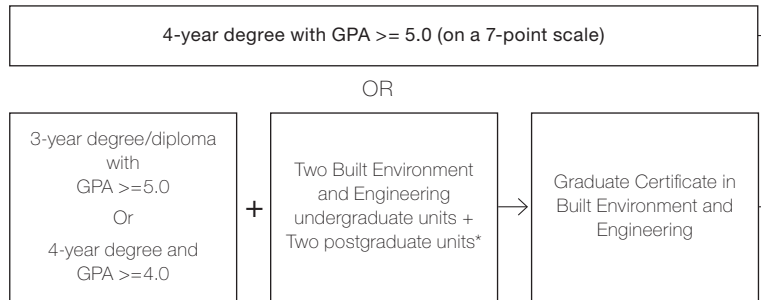
The Faculty has revised its postgraduate coursework offerings to improve quality and in response to student and industry requirements. Graduates will acquire capabilities in:

- higher order analysis and critical thinking
- problem solving

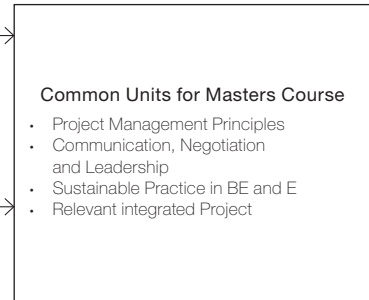
- information retrieval, evaluation and application
- identifying the needs and purposes of exploration, examination and investigation
- managing and leading projects
- working independently or collaboratively
- high-level communication and negotiation

- understanding and acting with social and ethical responsibility.

Entry Pathways

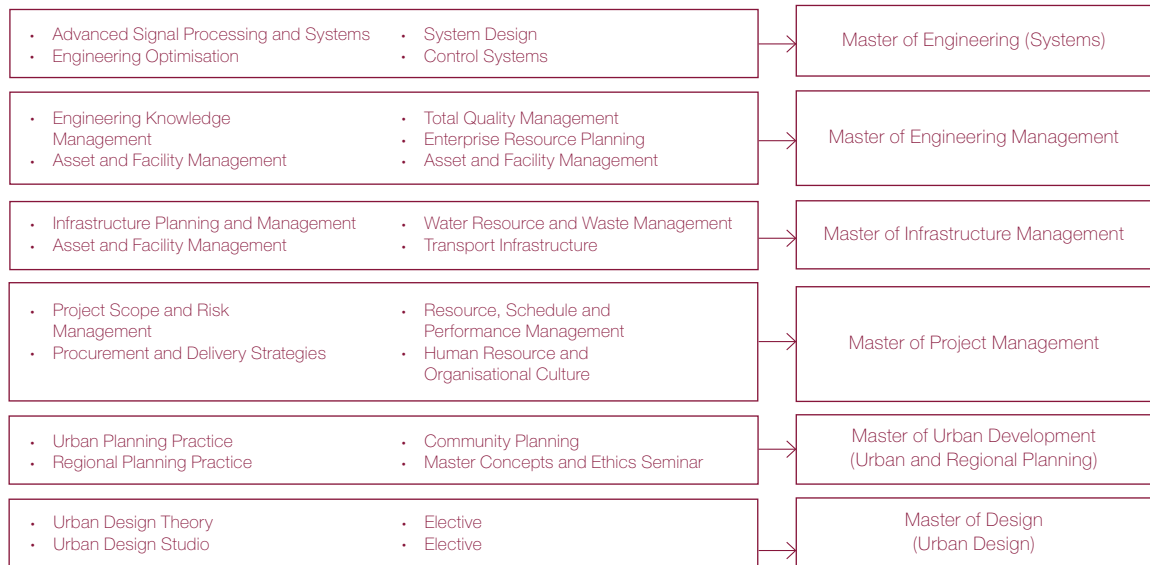


Masters Courses

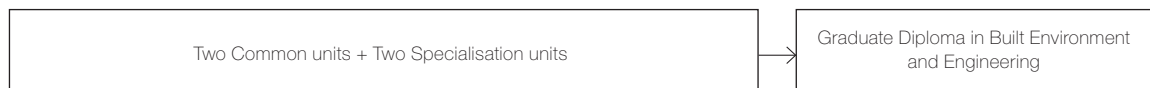


+
Specialisation Units
↓

Specialisation Units



Early Exit Option



* Two postgraduate units from another QUT faculty (to be approved by the Postgraduate Coordinator).