Bachelor of Engineering (Honours)/Bachelor of Data Science (Domestic students)

Program code
1611

Available at
Gold Coast Campus

Duration
5 years full-time
10 years part-time

Credit points
400

Indicative fee
$8,500.00* per year (more)
* 2024 indicative annual CSP fee

Entry requirements
70.00
ATAR/RANK 2024
(more)

Commencing in
Trimester 1 and Trimester 2

Prerequisites
NIL

Assumed knowledge
Any General or Applied English subject (Units 3 and 4, C)
Mathematical Methods (Units 3 and 4, C)

Degree requirements: Students who started Trimester 2 - 2022

For Domestic and those International students not required to complete the English Language Enhancement course

For the award of *Bachelor of Engineering (Honours)/Bachelor of Data Science [BEng(Hons)/BDataSc]*, you must successfully complete 400 credit points, made up of the core courses AND

- 170 credit points for an Engineering major; AND
- 20 credit points of listed electives.

Other program requirements

You must successfully complete:

- no more than 120 credit points of Level 1 courses (the first digit of a course code denotes the level);
- at least 60 credit points of Level 3 courses or higher.

You must also complete a minimum of 12 weeks (60 days) of approved experience in an Engineering practice environment (or a satisfactory alternative) during your degree studies.

Exit point

To be eligible to exit with the **Bachelor of Engineering Science** award, you must successfully complete the 240 credit point requirements of Years 1, 2 and 3. To exit, a student should apply for a program transfer.

Honours

Classification of Honours - Bachelor of Engineering (Honours)

The class of Honours to be awarded to each student in this degree will be determined by the School Assessment Board on the basis of the Program Grade Point Average for the engineering components of the program and the performance in the final year IAP course.

A minimum IAP mark of 50% is required for the award of the Bachelor of Engineering (Honours).

Students who have repeated the IAP course will be eligible for no higher than Class III Honours. A second fail in the IAP course will result in termination of the student's enrolment in the program.

Cut-offs for Honours Classifications

- **Class I Honours:**
  - Program Grade Point Average - 6.200 (minimum)

    - Minimum IAP Mark - 80%
- **Class IIA Honours:**
    - Program Grade Point Average - 5.650 (minimum)
    - Minimum IAP Mark - 70%
- **Class IIB Honours:**
    - Program Grade Point Average - 5.000 (minimum)
    - Minimum IAP Mark - 60%
- **Class III Honours:**
    - Program Grade Point Average - < 5.000
    - Minimum IAP Mark - 50%

Australian Qualifications Framework (AQF) Level and Type

The Australian Qualifications Framework (AQF) is the national policy for regulated qualifications in Australian education and training. The Bachelor of Data Science is accredited as an AQF Level 7 - Bachelor Degree.The Bachelor of Engineering (Honours) is accredited as an AQF Level 8 - Bachelor Honours Degree.

English Language Enhancement

Domestic students enrolled in this program whose first language is not English may complete the following **English Language Enhancement Course** as an elective.

- 5903LHS Language and Communication for Sciences

Students whose first language is English are not permitted to undertake this course.

Program learning outcomes

Program learning outcomes

Program Learning Outcomes communicate to the community the value of the Griffith educational experience as benchmarked against national qualification standards.

Program Learning Outcomes for the Bachelor of Engineering (Honours) and Bachelor of Data Science describe the knowledge, skills and the application of knowledge and skills you will acquire through studying the Griffith program of your choice.

Course list: Students starting Trimester 2 - 2022

Course offering information in program structures is a guide only. Please check the actual offering information in the Course Catalogue.

Students must check the prerequisite and incompatible requirements before selecting any course within this program.

English Language Enhancement course

Students required to undertake the English Language Enhancement course must complete 5903LHS in their first trimester of study.

Students that complete 5903LHS will only be required to complete 10 credit points of listed electives.

Trimester	Course code	Requirement	Course title	CP
Tri 2	5903LHS	English Enhancement	Language and Communication for Sciences (see Note 1)	10
			OR	
Tri 2		Hons Elective to Maj	Listed electives (see Note 1)	10

Note 1: This advice is only for students required to complete the English Language Enhancement course.

Year 1

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1,3	1010ENG	Hons Core to Program	Engineering Mathematics 1	10
Tri 2	1018ENG	Hons Core to Program	Engineering Science	10
Tri 1,3	1022ENG	Hons Core to Program	Engineering Design Practice	10
Tri 3	1020ENG	Hons Core to Program	Engineering Mathematics 2	10
Tri 3	1017ENG	Hons Core to Program	Engineering Materials	10
Tri 3	1701ENG	Hons Core to Program	Creative Engineering	10
Tri 1,2			Foundation courses for chosen Engineering major	20

Years 2-4

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1,3	1015SCG	Core to Program	Quantitative Reasoning	10
Tri 1	1701ICT	Core to Program	Creative Coding	10
Tri 2,3	1802ICT	Core to Program	Foundations of Systems Development (not offered from 2025)	10
			OR	
Tri 2	2006ICT	Core to Program	Object Oriented Software Development (offered from 2025)	10
Tri 1,2	2807ICT	Core to Program	Programming Principles	10
			OR	
Tri 1,2	1811ICT	Core to Program	Programming Principles (offered from 2025)	10
Tri 2	2030ICT	Core to Program	Introduction to Big Data Analytics	10
Tri 1,2,3	2814ICT	Core to Program	Data Management	10
			OR	
Tri 1,2,3	1804ICT	Core to Program	Data Management (offered from 2024)	10
			OR	
Tri 2	2808ICT	Core to Program	Secure Development Operations	10
Tri 2	2810ICT	Core to Program	Software Technologies	10
Tri 2	2703ICT	Core to Program	Web Application Development (not offered from 2026)	10
			OR	
Tri 2	3004ICT	Core to Program	Web Application Development (offered from 2026)	10
Tri 1	3030ICT	Core to Program	Data Analytics	10
Tri 2	3031ICT	Core to Program	Applied Data Mining	10
Tri 1	4030ICT	Core to Program	Big Data Analytics and Social Media (not offered from 2023)	10
			OR	
Tri 1,2,3	3032ICT	Core to Program	Big Data Analytics and Social Media	10
Tri 2	3004ENG	Hons Core to Program	Project Management Principles	10
Tri 1	4000ENG	Hons Core to Program	Research Methods and Statistics	10

Trimester	Course code	Requirement	Course title	CP
Tri 1,2			One Engineering major	170
Tri 1,2			Listed electives for chosen Engineering major	20

Exit point: Bachelor of Engineering Science (1573). To exit (after successfully completing the 240 credit point requirements for Years 1, 2 and 3), you should apply for a program transfer.

Bachelor of Engineering (Honours) - Majors (4 available)
Civil Engineering

Year 1

You must complete the following **foundation** courses:

Trimester	Course code	Requirement	Course title	CP
Tri 2	1105ENG	Hons Core to Major	Numerical and Computing Skills (withdrawn from 2022)	10
			OR	
Tri 2	1108ENG	Hons Core to Major	Digital and Data Skills (for Civil or Environmental Engineering majors)	10
Tri 2	1501ENG	Hons Core to Major	Engineering Mechanics	10

Year 2

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2205NSC	Hons Core to Major	Calculus II	10
Tri 1	2002ENG	Hons Core to Major	Fluid Mechanics and Hydraulics	10
Tri 1	2101ENG	Hons Core to Major	Mechanics of Materials I	10
Tri 1	2104ENG	Hons Core to Major	Construction Methods and Practices	10
Tri 2	2004ENG	Hons Core to Major	Hydrology	10
Tri 2	2102ENG	Hons Core to Major	Soil Mechanics	10
Tri 2	2103ENG	Hons Core to Major	Structural Design	10

Year 3

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	3101ENG	Hons Core to Major	Structural Analysis	10
Tri 1	3102ENG	Hons Core to Major	Geotechnical Engineering	10
Tri 2	3103ENG	Hons Core to Major	Concrete Structures	10
Tri 2	3113ENG	Hons Core to Major	Civil Engineering Design Project	10

Year 4

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	6002ENG	Hon Diss Core to Mjr	IAP (see Note 1)	40
Tri 2	6106ENG	Hons Core to Major	Transportation Engineering	10
Tri 2	6003ENG	Hons Core to Major	Integrated Design Project	10

Note 1: It is a requirement that students complete a minimum of 60 days of approved experience in an Engineering practice environment (or satisfactory alternative) during their degree studies.

Listed Civil Engineering electives

You must complete 20 credit points from the following elective courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2107ENV	Hons Elective to Maj	Introduction to Geographic Information Systems	10
Tri 1	3047ENV	Hons Elective to Maj	Geographic Information Systems	10
Tri 1	3107ENG	Hons Elective to Maj	Construction Materials	10
Tri 1	3114ENG	Hons Elective to Maj	Rock Mechanics	10
Tri 2	6206ENG	Hons Elective to Maj	Site Remediation and Rehab (offered every second odd year eg. 2021, 2023 etc.)	10
Tri 1	7125LHS	Hons Elective to Maj	Communication in Crises and Disasters	10
Tri 1	7202ENG	Hons Elective to Maj	Project Evaluation and Control	10
Tri 1	7309ENG	Hons Elective to Maj	Advanced Water Engineering Practice	10
Tri 1	2904ENV	Hons Elective to Maj	Sustainable Built Environment Principles	10
Tri 1	3904ENV	Hons Elective to Maj	Building Construction and Services	10
Tri 2	2105ENG	Hons Elective to Maj	Mechanics of Materials 2	10
Tri 2	3105ENG	Hons Elective to Maj	Water Resources Engineering	10
Tri 2	3115ENG	Hons Elective to Maj	Geotechnical Engineering Practice	10
Tri 2	3118ENG	Hons Elective to Maj	Digital and Spatial Technologies	10
Tri 2	6109ENG	Hons Elective to Maj	Construction Project Management	10
Tri 2	6110ENG	Hons Elective to Maj	Coastal Engineering and Modelling	10
Tri 2	6201ENG	Hons Elective to Maj	Air Quality Monitoring and Control	10
Tri 2	6204ENG	Hons Elective to Maj	Advanced Water and Wastewater Engineering	10
Tri 2	6205ENG	Hons Elective to Maj	Hydrologic and Hydraulic Modelling	10
Tri 2	6208ENG	Hons Elective to Maj	Hazardous Waste Management	10
Tri 2	6522ENG	Hons Elective to Maj	Computational Statics and Dynamics	10
Tri 2	7203ENG	Hons Elective to Maj	Resource Planning and Management	10
Tri 2	7204ENG	Hons Elective to Maj	Risk Analysis and Management	10
Tri 2	1903ENV	Hons Elective to Maj	Architecture and Landscape Architecture History 1 (not offered from 2022)	10
Tri 2	3910ENV	Hons Elective to Maj	Innovation in Design (not offered from 2022)	10
Tri 2	6109ENV	Hons Elective to Maj	Experimental Design and Statistics	10

Trimester	Course code	Requirement	Course title	CP
Tri 3	2007ENG	Hons Elective to Maj	International Engineering Practice	10
Tri 3	3005ENG	Hons Elective to Maj	Global Perspectives for Sustainable Infrastructure	10

Electrical and Electronic Engineering

Year 1

You must complete the following **foundation** courses:

Trimester	Course code	Requirement	Course title	CP
Tri 2	1305ENG	Hons Core to Major	Engineering Programming (withdrawn from 2022)	10
			OR	
Tri 2	1008ENG	Hons Core to Major	Programming and Computing for Engineers	10
Tri 2,3	1301ENG	Hons Core to Major	Electric Circuits	10

Year 2

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2205NSC	Hons Core to Major	Calculus II	10
Tri 1	2311ENG	Hons Core to Major	Analog Electronics I	10
Tri 1	2315ENG	Hons Core to Major	Digital Electronics	10
Tri 2	2303ENG	Hons Core to Major	Embedded Systems	10
Tri 2	2305ENG	Hons Core to Major	Signals and Systems	10
Tri 2	2314ENG	Hons Core to Major	Engineering Electromagnetics	10
Tri 2	2318ENG	Hons Core to Major	Electromechanics	10

Year 3

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	3304ENG	Hons Core to Major	Control Systems	10
Tri 1	3312ENG	Hons Core to Major	Electrical Design Project	10
Tri 1	3322ENG	Hons Core to Major	Electromagnetic Waves and Propagation	10
Tri 2	3325ENG	Hons Core to Major	Numerical Engineering Methods	10

Year 4

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	6321ENG	Hons Core to Major	Discrete Time Signal Processing	10
Tri 1	6315ENG	Hons Core to Major	Communication Systems	10
Tri 2	6002ENG	Hon Diss Core to Mjr	IAP (see Note 1)	40

Note 1: It is a requirement that students complete a minimum of 60 days of approved experience in an Engineering practice environment (or satisfactory alternative) during their degree studies.

Listed Electrical & Electronic Eng electives

You must complete 20 credit points from the following elective courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2517ENG	Hons Elective to Maj	Kinematics and Dynamics	10
Tri 2	6309ENG	Hons Elective to Maj	Mechatronic Systems Design and Engineering	10
Tri 1	6313ENG	Hons Elective to Maj	Electric Power Systems and Control	10
Tri 1	6316ENG	Hons Elective to Maj	Power Electronics and Machine Drives	10
Tri 1	1805NRS	Hons Elective to Maj	Human Anatomy and Physiology 1	10
Tri 1	6318ENG	Hons Elective to Maj	Signals and Imaging for Biomedical Applications (not offered from 2021)	10
Tri 2	3319ENG	Hons Elective to Maj	Power Transmission and Distribution	10
Tri 2	3320ENG	Hons Elective to Maj	Electrical Machines and Renewable Generators	10
Tri 2	3327ENG	Hons Elective to Maj	Sensors and Conditioning Circuits	10
			OR	
Tri 2	3328ENG	Hons Elective to Maj	Sensors and Actuators	10
Tri 2	6524ENG	Hons Elective to Maj	System Dynamics and Advanced Control	10
Tri 2	1808NRS	Hons Elective to Maj	Human Anatomy and Physiology 2	10
Tri 2	1008AHS	Hons Elective to Maj	Introductory Biomechanics	10

Mechanical Engineering

Year 1

You must complete the following **foundation** courses:

Trimester	Course code	Requirement	Course title	CP
Tri 2	1305ENG	Hons Core to Major	Engineering Programming (withdrawn from 2022)	10
			OR	
Tri 2	1008ENG	Hons Core to Major	Programming and Computing for Engineers	10
Tri 2	1501ENG	Hons Core to Major	Engineering Mechanics	10

Year 2

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2205NSC	Hons Core to Major	Calculus II	10
Tri 1	2517ENG	Hons Core to Major	Kinematics and Dynamics	10
Tri 1	2101ENG	Hons Core to Major	Mechanics of Materials I	10
Tri 1	2502ENG	Hons Core to Major	Mechanical Engineering Design	10
Tri 2	2501ENG	Hons Core to Major	Manufacturing Technology	10
Tri 2	2201ENG	Hons Core to Major	Engineering Thermodynamics	10
Tri 2	3511ENG	Hons Core to Major	Design of Machine Elements	10
Tri 2	2105ENG	Hons Core to Major	Mechanics of Materials 2	10

Year 3

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2002ENG	Hons Core to Major	Fluid Mechanics and Hydraulics	10
Tri 1	3304ENG	Hons Core to Major	Control Systems	10
Tri 1	3508ENG	Hons Core to Major	Materials and Manufacturing	10
Tri 2	2318ENG	Hons Core to Major	Electromechanics	10

Year 4

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	6527ENG	Hons Core to Major	Heat and Mass Transfer (not offered from 2021)	10
			OR	
Tri 1	4007ENG	Hons Core to Major	Heat and Mass Transfer Engineering	10
Tri 2	6002ENG	Hon Diss Core to Mjr	IAP (see Note 1)	40

Note 1: It is a requirement that students complete a minimum of 60 days of approved experience in an Engineering practice environment (or satisfactory alternative) during their degree studies.

Listed Mechanical Engineering electives

You must complete 20 credit points from the following elective courses:

Biomedical

Trimester	Course code	Requirement	Course title	CP
Tri 1	2007AHS	Hons Elective to Maj	Musculoskeletal Biomechanics	10
			OR	
Tri 1	2010AHS	Hons Elective to Maj	Musculoskeletal Anatomy	10
Tri 1	6526ENG	Hons Elective to Maj	Advanced Materials for Biomedical Applications (not offered from 2021)	10
Tri 2	1808NRS	Hons Elective to Maj	Human Anatomy and Physiology 2	10
Tri 2	1008AHS	Hons Elective to Maj	Introductory Biomechanics	10

Design and Modelling

Trimester	Course code	Requirement	Course title	CP
Tri 1	6505ENG	Hons Elective to Maj	Manufacturing with Composites (not offered in 2022)	10
			OR	
Tri 1	6525ENG	Hons Elective to Maj	Digital Manufacturing	10
Tri 1	6508ENG	Hons Elective to Maj	Fluids and CFD	10
Tri 2	2604QCA	Hons Elective to Maj	3D Digital Modelling for Manufacturing (not offered from 2023)	10
			OR	
Tri 2	2608ENG	Hons Elective to Maj	3D Digital Modelling for Manufacture	10
Tri 2	6522ENG	Hons Elective to Maj	Computational Statics and Dynamics	10

Mechatronics

Trimester	Course code	Requirement	Course title	CP
Tri 2	6309ENG	Hons Elective to Maj	Mechatronic Systems Design and Engineering	10
Tri 1	2801ICT	Hons Elective to Maj	Computing Algorithms	10
			OR	
Tri 1	2311ENG	Hons Elective to Maj	Analog Electronics I	10
Tri 2	3327ENG	Hons Elective to Maj	Sensors and Conditioning Circuits	10
			OR	
Tri 2	3328ENG	Hons Elective to Maj	Sensors and Actuators	10
Tri 2	6524ENG	Hons Elective to Maj	System Dynamics and Advanced Control	10

Software Engineering

Year 1

You must complete the following **foundation** courses:

Trimester	Course code	Requirement	Course title	CP
Tri 2	1305ENG	Hons Core to Major	Engineering Programming (withdrawn from 2022)	10
			OR	
Tri 2	1008ENG	Hons Core to Major	Programming and Computing for Engineers	10
Tri 2,3	1301ENG	Hons Core to Major	Electric Circuits	10

Year 2

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2205NSC	Hons Core to Major	Calculus II	10
Tri 1	2315ENG	Hons Core to Major	Digital Electronics	10
Tri 1	3701ICT	Hons Core to Major	Mobile Application Development	10
Tri 2	2809ICT	Hons Core to Major	Computer Networking Essentials	10
Tri 2	2303ENG	Hons Core to Major	Embedded Systems	10
			OR	
Tri 2	3323ENG	Hons Core to Major	Microcontroller Techniques (withdrawn from 2022)	10

Year 3

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	3410ICT	Hons Core to Major	The Ethical Technologist (not offered from 2026)	10
			OR	
Tri 1	2007ICT	Hons Core to Major	Cyber Security Standards and Operations (offered from 2026)	10
Tri 1	3809ICT	Hons Core to Major	Ethical Hacking	10
Tri 1	3812ICT	Hons Core to Major	Agile Business Analysis	10
Tri 2	2805ICT	Hons Core to Major	System and Software Design (not offered from 2025)	10
			OR	
Tri 2	2006ICT	Hons Core to Major	Object Oriented Software Development (offered from 2025)	10
Tri 2	1805ICT	Hons Core to Major	Human Computer Interaction (not offered from 2024)	10
			OR	
Tri 1,2,3	2043IBA	Hons Core to Major	Innovation, Creativity and Entrepreneurship	10
			OR	
Tri 1,3	1022ENG	Hons Core to Major	Engineering Design Practice (offered from 2024)	10

Year 4

You must complete the following courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	6002ENG	Hon Diss Core to Mjr	IAP (see Note 1)	40
Tri 2	2323ENG	Hons Core to Major	Data and Computer Communications	10
			OR	
Tri 2	7502ICT	Hons Core to Major	Fundamentals of Blockchain and Distributed Ledger Technology	10
Tri 2	3810ICT	Hons Core to Major	Information Systems Architecture	10
Tri 2	3813ICT	Hons Core to Major	Software Frameworks	10

Note 1: It is a requirement that students complete a minimum of 60 days of approved experience in an Engineering practice environment (or satisfactory alternative) during their degree studies.

Listed Software Engineering electives

You must complete 20 credit points from the following elective courses:

Trimester	Course code	Requirement	Course title	CP
Tri 1	2701ICT	Hons Elective to Maj	Interactive App Development (not offered from 2025)	10
Tri 1	2702ICT	Hons Elective to Maj	Intelligent Media Systems (not offered from 2025)	10
			OR	
Tri 2	2006ICT	Hons Elective to Maj	Object Oriented Software Development (offered from 2025)	10
Tri 1	3807ICT	Hons Elective to Maj	IT/Business Alignment (not offered from 2022)	10
Tri 1	3808ICT	Hons Elective to Maj	Routing and Internetworking	10
Tri 1	2806ICT	Hons Elective to Maj	IT Services Management	10
Tri 2	3702ICT	Hons Elective to Maj	Games Development	10
Tri 1	3705ICT	Hons Elective to Maj	Virtual and Augmented Reality (not offered from 2026)	10
Tri 2	3706ICT	Hons Elective to Maj	Sensor Networks (not offered from 2023)	10
			OR	
Tri 2	3707ICT	Hons Elective to Maj	Home Automation and Robotics (offered from 2021)	10
Tri 2	3723ICT	Hons Elective to Maj	Interaction Design	10
Tri 2	3811ICT	Hons Elective to Maj	Advanced Network Architectures	10
Tri 2	3815ICT	Hons Elective to Maj	Software Engineering (not offered from 2026)	10
			OR	
Tri 1	3003ICT	Hons Elective to Maj	Programming for Robotics (offered from 2026)	10
Tri 2,3	1803ICT	Hons Elective to Maj	Application Systems	10
Tri 2	2511ICT	Hons Elective to Maj	Business Analysis	10
Tri 1	3301ICT	Hons Elective to Maj	Enterprise Architecture Concepts	10
Tri 1	7502ICT	Hons Elective to Maj	Fundamentals of Blockchain and Distributed Ledger Technology	10
Tri 1,3	7611ICT	Hons Elective to Maj	Computer Systems and Cyber Security	10