2024 Engineering Subject Guide

Study Abroad and Exchange

Study Abroad and Exchange students may choose subjects from more than one faculty at UTS.

This guide highlights our most popular Engineering subjects. You can also search for other subjects and majors using the UTS Handbook and UTS Engineering website: https://www.uts.edu.au/future-students/engineering

Subjects offered in other faculties may carry different credit point values. Be mindful of this when choosing your subjects.

Final enrolment into subjects is conditional upon class availabilities and completion of the online enrolment process.

When can I study?

Study Abroad and Exchange is available:

Period	Category
February – June	**A**: Autumn Session

Period	Category
July – November	**S**: Spring Session

For availability of subjects, check the timetable at https://www.uts.edu.au/current-students/timetable/uts-timetable-planner

What can I study?

Pre-approved subject list

This is a great place to start! All subjects in this list are:

- Pre-approved and automatically added in your study plan
- No need to add them in your application
- You can self-enrol once you activate your student account
- No additional subject assessments will be required

Faculty assessed subjects

All subjects from this list require prior knowledge. You will need to:

- List the subjects in your application
- Demonstrate that you have the prior skills and knowledge necessary to undertake the subject (academic transcript and subject outline)
- Check prerequisites in the UTS Handbook www.handbook.uts.edu.au

Note: Each subject will be individually assessed by the faculty for approval, which can take up to 6 weeks.

Pre-approved subjects

Undergraduate

- 48230 Introduction to Engineering Projects
- 48310 Introduction to Civil and Environmental Engineering
- 48320 Surveying
- 41082 Introduction to Data Engineering
- 41092 Network Fundamentals
- 41161 Biomedical Industry Frameworks
- 41099 Introduction to Mechatronics Engineering
- 48610 Introduction to Mechanical Engineering
- 48023 Programming Fundamentals
- 48080 Introduction to Innovation
- 48430 Fundamentals of C Programming

Postgraduate

- 42060 Biomedical Industry Frameworks
- 49001 Judgment and Decision Making
- 49003 Economic Evaluation
- 49004 Systems Engineering for Managers
- 49069 Leadership and Responsibility
- 49098 Applied Financial Management
- 49119 Problematic Soils and Ground Improvement Techniques
- 49131 Bridge Design
- 49133 Steel and Composite Design
- 49258 Pavement Analysis and Design
- 49227 Wireless Sensor Networks

Faculty assessed subjects

Key: (Information included: Subject Number, Subject Name, Level and Session offered)

- **L1** (Level 1) usually undertaken in first year (similar to 100 level, introductory level)
- **L2** (Level 2) usually undertaken in second year (similar to 200 level, prior knowledge is required)
- **L3** (Level 3) usually undertaken in third year (similar to 300 level, advanced level)
- **L4** (Level 4) Usually undertaken in fourth year (similar to 400 level, advanced level)

Undergraduate subjects

- Students with no prior Engineering background should start with the pre-approved subject list
- Undergraduate students are not permitted to study postgraduate subjects.
- * Indicates that this subject has prerequisite(s)

Core subjects

48240	Design and Innovation Fundamentals*	L2	A or S
48250	Engineering Economics and Finance*	L2	A or S
48260	Engineering Project Management*	L3	A or S
48210	Interrogating Technology: Sustainability, Environment and Social Change*	L3	A or S
48270	Entrepreneurship and Commercialisation*	L4	A or S
41200	Engineering Project Appraisal	L2	S
41201	Designing Sustainable Engineering Projects	L3	S

Biomedical Engineering

41160	Introduction to Biomedical Engineering	L1	S

Civil and Environmental Engineering

48221	Engineering Computations	L1	A or S
48321	Engineering Mechanics*	L1	A or S
48340	Construction*	L2	A or S
48352	Construction Materials*	L2	A or S
48331	Mechanics of Solids*	L2	A or S
48330	Soil Behaviour*	L2	A or S
48349	Structural Analysis*	L2	A or S
48821	Principles of Environmental Engineering*	L2	S
48641	Fluid Mechanics*	L3	A or S
48350	Environmental and Sanitation Engineering*	L3	A or S
48362	Hydraulics and Hydrology*	L3	A or S
48370	Road and Transport Engineering*	L3	A or S
48360	Geotechnical Engineering*	L3	A or S
48353	Concrete Design*	L3	A or S
48860	Pollution Control and Waste Management*	L3	A
48366	Steel and Timber Design*	L4	A or S
48389	Computer Modelling and Design*	L4	A or S
48881	Water and Environmental Design*	L4	S
48371	Advanced Engineering Computing*	L4	S

Electrical Engineering

48510	Introduction to Electrical and Electronic Engineering	L1	A or S
48530	Circuit Analysis and Design*	L2	A or S
48531	Electromechanical Automation*	L2	A or S
48540	Signals and Systems*	L2	A or S
48571	Electrical Machines*	L3	A
48560	Control Studio A*	L3	S
43124	Renewable Energy Technology	L3	S
48580	Control Studio B*	L4	A
48561	Renewable Energy Systems Studio A*	L4	A
48582	Power Systems Studio A*	L4	A
48583	Power Systems Studio B*	L4	S
48550	Renewable Energy Systems Studio B*	L4	S
41125	Sustainable Energy Studio*	L4	S
43123	Energy Storage Technologies*	L2	A
42057	Introduction to Space Communications and Sensing*	L4	S

Data and Software Engineering

48024	Programming 2*	L2	A or S
48441	Introductory Digital Systems*	L2	A or S
31269	Business Requirements Modelling*	L1	A or S
48450	Real-time Operating Systems*	L2	A
31251	Data Structures and Algorithms*	L2	A
31257	Information System Development Methodologies*	L2	A
48033	Internet of Things*	L2	S
48730	Cybersecurity*	L3	A or S
48433	Software Architecture*	L3	S
48436	Digital Forensics*	L3	S
42177	Image Processing and Pattern Recognition*	L2	S

Mechanical and Mechatronic Engineering

48531	Electromechanical Automation*	L2	A or S
48641	Fluid Mechanics*	L2	A or S
48622	Embedded Mechatronics Systems	L2	A
41304	Production System Design	L1	A

Postgraduate subjects

Undergraduate/bachelors-level students are generally not permitted to undertake postgraduate subjects; however, an exception to study the following postgraduate subjects may be made if equivalent/relevant engineering studies (approximately 2.5 years of a 4-year degree) have been completed.

Engineering Management

49006	Risk Management in Engineering	A or S
49016	Technology and Innovation Management	A

Biomedical Engineering

49275	Neural Networks and Fuzzy Logic	A
49261	Biomedical Instrumentation	S

Civil and Environmental Engineering

42991	Advanced Water and Wastewater Treatment	A
49123	Waste and Pollution Management	A
49115	Façade Engineering	A or S
49136	Application of Timber in Engineering Structures	A
49150	Prestressed Concrete Design	A
49151	Concrete Technology and Practice	A
49106	Road Engineering Practice*	A
49047	Finite Element Analysis	S
49117	Floodplain Risk Management	S
49118	Applied Geotechnics	S
49127	Decentralised Environmental Systems*	S
49134	Structural Dynamics and Earthquake Engineering	S
49254	Advanced Soil Mechanics and Foundation Design	S
49255	Catchment Modelling	S

Data and Software Engineering

32555	Fundamentals of Software Development*	A or S
49202	Communication Protocols*	A
42890	4G/5G Mobile Technologies*	S

Electrical, Mechanical and Mechatronic Engineering

49928	Design Optimisation for Manufacturing	S
49325	Computer-aided Mechanical Design	A
42907	Design for Durability*	S
49274	Space Robotics*	S
49329	Control of Mechatronic Systems*	S