

Faculty of Engineering & Mathematical Sciences

Recommended Second Majors and/or Electives

Engineering Science Major

If you are studying one of the pathways in the Engineering Science major, and have space in your study plan, then you may like to consider the following combinations of elective units and/or second majors.

Recommendations

The following second majors are recommended to all Engineering Science major students, regardless of the specialisation you are hoping to follow.

Recommended 2nd majors:

From Bachelor of Science: Data Science, Computer Science,

From Bachelor of Commerce: Finance, Management, Accounting, Economics

From Bachelor of Arts: Any second language major

Specialisation specific advice for the Chemical Engineering, Electrical & Electronic Engineering, and Mining Engineering pathways is given below.

Chemical Engineering Specialisation

The Chemical Engineering Industry Advisory Panel has recommended a number of elective units.

Recommended Elective Units:

[FINA1221](#) Introduction to Finance

[LAWS1104](#) Introduction to Law

[PSYC2209](#) Industrial and Organisational Psychology (*prerequisites: [PSYC1101](#) Psychology: Mind and Brain or [PSYC1102](#) Psychology: Behaviour in Context*)

[INMT2232](#) Project Management

[SCOM2208](#) Science Writing

Finance:

[STAT1520](#) Economic and Business Statistics, [ECON1102](#) Macro-economics: Money and Finance, [ACCT1101](#) Financial Accounting, [ACCT2112](#) Management Accounting, [FINA2205](#) Quantitative Methods for Finance

Marketing/Management:

[MKTG1203](#) Introduction to Marketing, [MGMT1135](#) Organisational Behaviour or [MGMT1136](#) Management and Organisations

Programming:

[CITS1401](#) Computational Thinking with Python or [CITS1402](#) Relational Database Management Systems

Asian Economy:

[ASIA2002](#) Australia and Asia (pre-requisite: a Level 1 ASIA, JAPN, CHIN, KORE Or INDO unit), ECON2106 or ABUS2290

Work Integrated Learning:

[SVLG1002](#) McCusker Centre for Citizenship Internship or [SCIE2205](#) Science Work Placement

Indigenous knowledge:

[INDG1150](#) Aboriginal Encounters: Strangers in our Backyard, [INDG2300](#) Indigenous Knowledge: Mind, Body and Spirit

Gender studies:

[GEND1901](#) Beyond 'Gender Wars'

Other:

[PHIL1002](#) Introduction to Critical Thinking, [IMED2200](#) Mental Wellbeing for Today's World

Electrical Engineering Specialisation

Academic staff from the Department of Electrical and Electronic Engineering in collaboration with members of their Industry Advisory Panel have recommended a number of second majors and elective units.

Recommended 2nd majors:

Computer Science, Physics, Maths & Stats; Finance or other Commerce majors.

Recommended combinations of engineering specialisations:

Combine your EEE pathway with the Software Engineering and/or Mechanical Engineering pathway units to broaden your employment options.

Recommended Elective Units:

Computer Science:

[CITS1401](#) Computational Thinking with Python

[CITS1001](#) Software Engineering with Java

[CITS2002](#) Systems Programming

[CITS2200](#) Data Structures and Algorithms

Business:

[STAT1400](#) Statistics for Science;

[FINA1221](#) Introduction to Finance

[MGMT1135](#) Organisational Behaviour

[INMT2232](#) Project Management

[LAWS1104](#) Introduction to Law

[LAWS1111](#) Law, Conflict and Change

[PSYC1102](#) Psychology: Behaviour in Context

[EMPL1206](#) Social Psychology of Work

Other:

[SCOM1101](#) Communicating Science

[PHIL1002](#) Introduction to Critical Thinking

"I put some thought into this and decided that the areas that would be useful to young engineers are, in my view:

- 1. Project management skills*
- 2. Interpretation of relevant Australian Legislation, Directives and Standards (eg ACMA)*
- 3. Communication skills and report writing/generation*
- 4. Finance/costing*
- 5. More in-depth firmware/software skills*
- 6. Other outside interests - i.e. they should be encouraged to join and become active members of the university clubs, societies, sporting events etc.*

On an aside, I'm a big believer in getting experience at grass roots level - i.e. spending time working with electricians, factory operators, maintenance and construction workers etc. If you know the system inside out, then you have a better chance at being more effective at implementing engineering solutions. "

[Comments from a member of the Electrical Engineering Industry Advisory Panel]

Mining Engineering Specialisation

Recommended 2nd majors:

Data Science; Geology; Finance, Management, Accounting, Economics; 2nd Language

Recommended electives:

[CITS1001](#) Software Engineering with Java

[CITS1401](#) Computational Thinking with Python

[CITS1402](#) Relational Database Management Systems

[CITS2002](#) Systems Programming

[CITS2200](#) Data Structures and Algorithms

[CITS3001](#) Algorithms, Agents and Artificial Intelligence

[CITS3002](#) Computer Networks

[CITS3401](#) Data Warehousing

In addition, we think you will enjoy watching the following short video which explores career opportunities in Mining Engineering <https://www.youtube.com/watch?v=d8zLijCHGg0>

Note:

A recommended Study Plan/Guide for combining the above electives with the Mining Engineering pathway is with staff in the [EMS Student Office](#).