H1287 Bachelor of Engineering Honours (Industrial Control and Automation Engineering)

Academic Chair: For 1st year & Advanced Standing enquiries: Amir Yazdani
For 2nd, 3rd and 4th year enquiries: Travis Woodward

Start Date: Semester 1 2025

Major in Industrial Control and Automation Engineering, **Minor** in Electrical and Renewable Energy Engineering

	Semester 1 Units	CP	Semester 2 Units	CP
Year 1 – 2025	**MAS164** Fundamentals of Mathematics[1]	3	**MAS182** Introductory Calculus with Applications	3
	ENG101 Engineering Fundamentals	3	**PEN120** General Physics[2]	3
	ENG103 Principles of Engineering	3	**ENG102** Engineering Design for Sustainability	3
	ENG109 Engineering Computing Systems	3	**MAS162** Discrete Mathematics and Logic[3] (or Specified Elective)	3
	Total	12	**Total**	12
	Semester 1 Units	**CP**	**Semester 2 Units**	**CP**
Year 2 – 2026	**MAS161** Calculus and Matrix Algebra	3	**ENG216** Dynamic Systems and Control	3
	ENG208 Fundamentals of DC Circuits	3	**ENG209** Fundamentals of AC Circuits	3
	ENG215 Systems Engineering	3	**ENG252** Embedded Systems	3
	ENG251 PLC Systems	3	**ENG336** Engineering Finance, Management and Law	3
	Total	12	**Total**	12
	Semester 1 Units	**CP**	**Semester 2 Units**	**CP**
Year 3 – 2027	**MAS220** Mathematical Methods and Multivariable Calculus	3	**ENG231** Renewable Energy Systems[4] (or Specified Elective)	3
	ENG391 Process Control	3	**ENG381** Electrical Power Systems[4] (or Specified Elective)	3
	ENG392 SCADA and Instrumentation Systems	3	**ENG382** Power Electronics[4] (or Specified Elective)	3
	ENG344 Electromechanical Energy Conversion[4] (or Specified Elective)	3	**ICT515** Foundations of Data Science	3
	Total	12	**Total**	12
	Semester 1 Units	**CP**	**Semester 2 Units**	**CP**
Year 4 – 2028	**ENG470** Engineering Honours Thesis (Y option)[5]	3	**ENG470** Engineering Honours Thesis (Y option)	9
	ENG100 Engineering Professional Practice (Y)	0	**ENG100** Engineering Professional Practice (Y)	0
	ENG551 Microcontrollers and Data Communication	3	**Specified Elective**	3
	ENG552 Industrial Control Systems	3		
	ENG553 Industrial Process Control	3		
	Total	12	**Total**	12

TOTAL CREDIT POINTS 96

[1] Check the Enrolment Rules for MAS164 in the Handbook. If you are ineligible to enrol, you should consult the Academic Chair.
[2] Check the Enrolment Rules for PEN120 in the Handbook. If you are ineligible to enrol, you should consult the Academic Chair.
[3] Recommended specified elective.
[4] The units ENG231, ENG344, ENG381 and ENG382 form the Minor in Electrical and Renewable Energy Engineering, which is recommended for your Major. If you do not wish to complete this Minor, select four (4) Specified Electives instead.
[5] Note that enrolling in ENG470 requires that the full unit fee (12 CP) be paid at the beginning of the teaching period.

Specified Electives	
CHE140 Fundamentals of Chemistry (S1, S2) **PEN152** Principles of Physics (S1, S2) **MAS162** Discrete Mathematics and Logic (S1, S2) **ENG341** Water Conservation & Auditing (S1) **ENG344** Electromechanical Energy Conversion (S1) **SIK102** Wandju Boodja (Welcome to Country) (S1, S2)	**ENG221** Pollution & Its Control (S2) **ENG231** Renewable Energy Systems (S2) **ENG300** Environmental Technology for Sustainability(S2) **ENG381** Electrical Power Systems (S2) **ENG382** Power Electronics (S2) **BUS368** Cultures of Innovation (S2)
Notes: 1. A maximum of 30 CP of 100-level units may be completed as part of the course. 2. Review the elective units corequisites and prerequisites carefully before making any selection. 3. Any other elective units are subject to approval from the Academic Chair.	
ENG100 Engineering Professional Practice (0 CP) Bachelor of Engineering Honours students should complete **450 hours** of approved work experience to complete the requirements of the course.	

Please note: This course plan is a sample only and must be read in conjunction with the full course structure, unit prerequisites and enrolment options as outlined in the Handbook. Students should note that due to unit prerequisites, commencing study in Semester 2 may extend the duration of the course. This information is correct as at 14/11/25.