

H1287 Bachelor of Engineering Honours (Electrical and Renewable Energy Engineering)

Academic Chairs: For Year 1 and advanced standing enquiries: Dr Amir Yazdani

amirmehdi.yazdani@murdoch.edu.au

Start Semester

Date: 2 2025

For Year 2-4 enquiries: Dr Martina Calais M.Calais@murdoch.edu.au

Major: Electrical and Renewable Energy Engineering, Minor: Industrial Control and Automation Engineering

Year 1 – 2025	Semester 1 Units	CP	Semester 2 Units	CP
			MAS164 Fundamentals of Mathematics ¹	3
			ENG102 Engineering Design for Sustainability	3
			PEN120 General Physics ²	3
			ENG101 Engineering Fundamentals	3
			Total	12
Year 2 - 2026	Semester 1 Units	CP	Semester 2 Units	CP
	MAS182 Applied Mathematics	3	MAS161 Calculus and Matrix Algebra	3
	ENG103 Principles of Engineering	3	ENG209 Fundamentals of AC Circuits	3
	ENG109 Engineering Computing Systems	3	ENG252 Embedded Systems ³ (or Engineering Elective)	3
	ENG208 Fundamentals of DC Circuits	3	MAS162 Discrete Mathematics and Logic ⁴ (or Engineering Elective)	3
	Total	12	Total	12
Year 3 – 2027	Semester 1 Units	CP	Semester 2 Units	CP
	ENG344 Electromechanical Energy Conversion	3	ENG382 Power Electronics	3
	ENG215 Systems Engineering	3	ENG381 Electrical Power Systems	3
	ENG251 PLC Systems ³ (or Engineering Elective)	3	ENG231 Renewable Energy Systems	3
	MAS220 Mathematical Methods and Multivariable Calculus	3	ENG216 Dynamic Systems and Control	3
	Total	12	Total	12
Year 4 - 2028	Semester 1 Units	CP	Semester 2 Units	CP
	ENG537 Power System Modelling and Analysis	3	ENG534 Power Systems Operation, Control and Protection	3
	ENG391 Process Control ³ (or Engineering Elective)	3	ENG336 Finance, Ethics and Law	3
	ENG392 SCADA and Instrumentation Systems ³ (or Engineering Elective)	3	ENG470 Engineering Thesis (H option) ⁵	6
	ENG535 Power Electronic Converters and Applications	3	ENG100 Engineering Professional Practice (H option)	0
	Total	12	Total	12
Year 4 - 2029	Semester 1 Units	CP	Semester 2 Units	CP
	Engineering Elective	3		
	ENG532 Renewable Energy Resources and Technologies			
	OR	3		
	ENG631 Distributed Power System and Microgrid Planning and Reliability			
	ENG470 Engineering Thesis (H option) ⁵	6		
	ENG100 Engineering Professional Practice (H)	0		
	Total	12	Total Credit Points	96

¹ Students who have achieved a final scaled score of 55% or more in ATAR Mathematics Specialist, WACE Mathematics Specialist 3C/3D or TEE Calculus may not enrol in this unit and should consult their Academic Chair.

² Students who have achieved a final scaled score of 60% or more in ATAR Physics or WACE Physics 3A/3B may not enrol in this unit and should consult their Academic Chair.

³ The units ENG251, ENG252, ENG391 and ENG392 form the minor in Industrial Control and Automation Engineering which is recommended for students studying the Electrical and Renewable Energy Engineering major. If students do not wish to complete this minor, other engineering electives can be chosen for all or some of these units (see below).

⁴ Recommended for students studying the Minor in Industrial Control and Automation Engineering.

⁵ Students enrolling in ENG470 (H-Option) need to pay the full unit fee (12 cpts) at the commencement of the teaching period.

Recommended Engineering Elective Units

100 level (a maximum of 30 cpts can be completed at 100 level as part of the course)

SIK102 - Wandju Boodja (Welcome to Country) (S1, S2, SUM, W)

CHE140 - Fundamentals of Chemistry (S1, S2)

PEN152 - Principles of Physics (S1, S2)

ICT158 - Introduction to Information Systems (S2)

MAS162 – Discrete Mathematics and Logic (S1, S2)

MAS183 - Statistical Data Analysis (S1, S2)

200 level and above (students should carefully review the pre-requisites required for the below units):

ENG221 - Pollution and Its Control (S2)

ENG251 - PLC Systems (S1)

ENG252 - Embedded Systems (S2)

ENG300 - Environmental Technology for Sustainability (S2)

ENG341 - Water Conservation and Auditing (S1)

BUS368 – Cultures of Innovation (S2)

ENG391 - Process Control (S1)

ENG392 - SCADA and Instrumentation Systems (S1)

PEN594 – Energy Auditing and Management (S1)

(Any other elective units are subject to approval from the Academic Chair)

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 20/06/25.