

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

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

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Start Semester

Date: 2 2025

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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 <sup>1</sup>	3
			ENG102 Engineering Design for Sustainability	3
			PEN120 General Physics <sup>2</sup>	3
			ENG101 Engineering Fundamentals	3
			<b>Total</b>	<b>12</b>
Year 2 - 2026	Semester 1 Units	CP	Semester 2 Units	CP
	MAS182 Introductory Calculus with Applications	3	MAS161 Calculus and Matrix Algebra	3
	MAS162 Discrete Mathematics and Logic <sup>3</sup> (or Specified Elective)	3	ENG209 Fundamentals of AC Circuits	3
	ENG109 Engineering Computing Systems	3	ENG252 Embedded Systems <sup>4</sup> (or Specified Elective)	3
	ENG208 Fundamentals of DC Circuits	3	ENG103 Principles of Engineering	3
	<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>
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 <sup>3</sup> (or Specified Elective)	3	ENG231 Renewable Energy Systems	3
	MAS220 Mathematical Methods and Multivariable Calculus	3	ENG216 Dynamic Systems and Control	3
	<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>
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 <sup>3</sup> (or Specified Elective)	3	ENG336 Finance, Ethics and Law	3
	ENG392 SCADA and Instrumentation Systems <sup>3</sup> (or Specified Elective)	3	ENG470 Engineering Thesis (H option) <sup>5</sup>	6
	ENG535 Power Electronic Converters and Applications	3	ENG100 Engineering Professional Practice (H option)	0
	<b>Total</b>	<b>12</b>	<b>Total</b>	<b>12</b>
Year 4 - 2029	Semester 1 Units	CP	Semester 2 Units	CP
	Specified Elective	3		
	ENG532 Renewable Energy Resources and Technologies			
	OR	3		
	ENG631 Distributed Power System and Microgrid Planning and Reliability			
	ENG470 Engineering Thesis (H option) <sup>5</sup>	6		
	ENG100 Engineering Professional Practice (H option)	0		
	<b>Total</b>	<b>12</b>	<b>Total Credit Points</b>	<b>96</b>

<sup>1</sup> Check the Enrolment Rules for MAS164 in the [Handbook](#). Students ineligible to enrol, should consult their Academic Chair.

<sup>2</sup> Students who meet the criteria for entry into [PEN152 Principles of Physics](#) may not enrol in PEN120 and should consult their Academic Chair.

<sup>3</sup> Recommended for students studying the Minor in Industrial Control and Automation Engineering.

<sup>4</sup> 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 specified electives can be chosen for all or some of these units (see below).

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

Specified Electives
<p>100 level (a maximum of 30 cpts can be completed at 100 level as part of the course)</p> <p>SIK102 - Wandju Boodja (Welcome to Country) (S1, S2, SUM, W)</p> <p>CHE140 - Fundamentals of Chemistry (S1, S2)</p> <p>PEN152 - Principles of Physics (S1, S2)</p> <p>ICT158 - Introduction to Information Systems (S2)</p> <p>MAS162 – Discrete Mathematics and Logic (S1, S2)</p> <p>MAS183 - Statistical Data Analysis (S1, S2)</p> <p>200 level and above (students should carefully review the pre-requisites required for the below units):</p> <p>ENG221 - Pollution and Its Control (S2)</p> <p>ENG251 - PLC Systems (S1)</p> <p>ENG252 - Embedded Systems (S2)</p> <p>ENG300 - Environmental Technology for Sustainability (S2)</p> <p>ENG341 - Water Conservation and Auditing (S1)</p> <p>BUS368 – Cultures of Innovation (S2)</p> <p>ENG391 - Process Control (S1)</p> <p>ENG392 - SCADA and Instrumentation Systems (S1)</p> <p>PEN594 – Energy Auditing and Management (S1)</p> <p>(Any other elective units are subject to approval from the Academic Chair)</p>
<p>ENG100 Engineering Professional Practice (0 CP)</p> <p>Bachelor of Engineering Honours students should complete 450 hours of approved work experience to complete the requirements of the course.</p>

**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.