

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

**Academic Chair:** For 1<sup>st</sup> year & Advanced Standing enquiries: [Amir Yazdani](#)  
For 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year enquiries: [Travis Woodward](#)

**Start Date:** Semester 2 2025

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

Year 1 – 2025	Semester 1 Units	CP	Semester 2 Units	CP
			<b>MAS164</b> Fundamentals of Mathematics <sup>1</sup>	3
			<b>PEN120</b> General Physics <sup>2</sup>	3
			<b>ENG101</b> Engineering Fundamentals	3
			<b>ENG102</b> Engineering Design for Sustainability	3
			<b>Total</b>	12
Year 2 – 2026	Semester 1 Units	CP	Semester 2 Units	CP
	<b>MAS182</b> Introductory Calculus with Applications	3	<b>MAS161</b> Calculus and Matrix Algebra	3
	<b>ENG103</b> Principles of Engineering	3	<b>ENG209</b> Fundamentals of AC Circuits	3
	<b>ENG109</b> Engineering Computing Systems	3	<b>ENG252</b> Embedded Systems	3
	<b>ENG208</b> Fundamentals of DC Circuits	3	<b>MAS162</b> Discrete Mathematics and Logic <sup>3</sup> (or Specified Elective)	3
	<b>Total</b>	12	<b>Total</b>	12
Year 3 – 2027	Semester 1 Units	CP	Semester 2 Units	CP
	<b>MAS220</b> Mathematical Methods and Multivariable Calculus	3	<b>ENG216</b> Dynamic Systems and Control	3
	<b>ENG215</b> Systems Engineering	3	<b>ENG231</b> Renewable Energy Systems <sup>4</sup> (or Specified Elective)	3
	<b>ENG251</b> PLC Systems	3	<b>ENG381</b> Electrical Power Systems <sup>4</sup> (or Specified Elective)	3
	<b>ENG344</b> Electromechanical Energy Conversion <sup>4</sup> (or Specified Elective)	3	<b>ENG382</b> Power Electronics <sup>4</sup> (or Specified Elective)	3
	<b>Total</b>	12	<b>Total</b>	12
Year 4 – 2028	Semester 1 Units	CP	Semester 2 Units	CP
	<b>ENG391</b> Process Control	3	<b>ENG470</b> Engineering Honours Thesis (H option) <sup>5</sup>	6
	<b>ENG392</b> SCADA and Instrumentation Systems	3	<b>ENG100</b> Engineering Professional Practice (H)	0
	<b>ENG551</b> Microcontrollers and Data Communication	3	<b>ENG336</b> Engineering Finance, Management and Law	3
	<b>Specified Elective</b>	3	<b>ICT515</b> Foundations of Data Science	3
	<b>Total</b>	12	<b>Total</b>	12
Year 5 – 2029	Semester 1 Units	CP	Semester 2 Units	CP
	<b>ENG470</b> Engineering Honours Thesis (H option)	6		
	<b>ENG100</b> Engineering Professional Practice (H)	0		
	<b>ENG552</b> Industrial Control Systems	3		
	<b>ENG553</b> Industrial Process Control	3		
	<b>Total</b>	12	<b>Total</b>	

**TOTAL CREDIT POINTS 96**

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

<sup>2</sup> Check the Enrolment Rules for PEN120 in the [Handbook](#). If you are ineligible to enrol, you should consult the Academic Chair.

<sup>3</sup> Recommended specified elective.

<sup>4</sup> 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.

<sup>5</sup> Note that enrolling in ENG470 requires that the full unit fee (12 CP) be paid at the beginning of the teaching period.

Specified Electives	
<b>CHE140</b> Fundamentals of Chemistry (S1, S2) <b>PEN152</b> Principles of Physics (S1, S2) <b>MAS162</b> Discrete Mathematics and Logic (S1, S2) <b>MAS183</b> Statistical Data Analysis (S1, S2) <b>ENG341</b> Water Conservation & Auditing (S1) <b>ENG344</b> Electromechanical Energy Conversion (S1) <b>PEN594</b> Energy Auditing and Management (S1) <b>SIK102</b> Wandju Boodja (Welcome to Country) (S1, S2)	<b>ENG221</b> Pollution & Its Control (S2) <b>ENG231</b> Renewable Energy Systems (S2) <b>ENG300</b> Environmental Technology for Sustainability(S2) <b>ENG381</b> Electrical Power Systems (S2) <b>ENG382</b> Power Electronics (S2) <b>ICT158</b> Introduction to Information Systems (S2) <b>BUS368</b> Cultures of Innovation (S2)
Notes: <ol style="list-style-type: none"> <li>1. A maximum of 30 CP of 100-level units may be completed as part of the course.</li> <li>2. Review the elective units corequisites and prerequisites carefully before making any selection.</li> <li>3. Any other elective units are subject to approval from the Academic Chair.</li> </ol>	
Spine - ENG100 Engineering Professional Practice (0 CP) Bachelor of Engineering Honours students should complete <b>450 hours</b> 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 01/07/25.