

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

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Academic Chair:

For second and third year enquiries:
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Start Date: Semester 1 2025

Major in Electrical and Renewable Energy Engineering and Industrial Control and Automation Engineering Focus

Year 1 – 2025	Semester 1 Units	CP	Semester 2 Units	CP
	MAS164 Fundamentals of Mathematics ¹	3	MAS182 Applied Mathematics	3
	ENG101 Engineering Fundamentals	3	ENG102 Engineering Design for Sustainability	3
	ENG103 Principles of Engineering	3	PEN120 General Physics ²	3
	ENG109 Engineering Computing Systems	3	BUS368 Cultures of Innovation	3
		12	Total	12
Year 2 – 2026	Semester 1 Units	CP	Semester 2 Units	CP
	MAS161 Calculus and Matrix Algebra	3	ENG216 Dynamic Systems and Control	3
	ENG215 Systems Engineering	3	ENG336 Engineering Finance, Management and Law	3
	ENG214 Electrical and Electronic Circuits	3	Engineering Elective	3
	ENG251 PLC Systems (Engineering Elective)	3	ENG252 Embedded Systems (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
	ENG392 SCADA and Instrumentation Systems (Engineering Elective)	3	ENG381 Electrical Power Systems	3
	MAS220 Mathematical Methods and Multivariable Calculus	3	ENG231 Renewable Energy Systems	3
	ENG391 Process Control (Engineering Elective)	3	Engineering Elective	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
	ENG535 Power Electronic Converters and Applications	3	ENG470 Engineering Honours Thesis (Y option)	9
	ENG532 Renewable Energy Resources and Technologies OR ENG631 Distributed Power System and Microgrid Planning and Reliability	3	ENG100 Engineering Professional Practice (Y option)	0
	ENG470 Engineering Honours Thesis (Y option)	3		
	ENG100 Engineering Professional Practice (Y option)	0		
	Total	12	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.

Engineering Elective Units

Engineering electives recommended for first and second year (the total number of credit points of units undertaken at 100 level shall not exceed 30 credit points within this course):

SIK102 - Wandju Boodja (Welcome to Country)

CHE140 - Fundamentals of Chemistry

PEN152 - Principles of Physics

ICT158 - Introduction to Information Systems

MAS183 - Statistical Data Analysis

Engineering electives recommended for second and third year:

ENG221 - Pollution & its Control

ENG252 - Embedded Systems

ENG251 - PLC Systems

ENG300 - Environmental Technology for Sustainability

ENG341 - Water Conservation & Auditing

ENG391 - Process Control

ENG392 - SCADA and Instrumentation Systems

PEN594 – Energy Auditing and Management

Spine - 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 pre-requisites, commencing study in Semester 2 may extend the duration of the course. This information is correct as at 26/11/24.