

Engineering skills by units

This section summarises the generic skills for the Oil and Gas Engineering program, broken down by teaching centres, with the core units presented in bold. Units originally developed as part of the Masters program in Oil and Gas Engineering are also listed in italics. These are specialist units and are used in conjunction with the relevant undergraduate oil and gas stream and other foundation units across the Faculty to structure the eight different oil and gas themes recommended in the study plans (Section 15). Common first year units, mathematics units and some non-core electives are not included in these tables. Section 12 details the unit structure in the oil and gas program, whereas a detailed description of the units may be found in the Faculty handbook.

Generic Attributes IEAust

- A ability to apply knowledge of basic science and engineering fundamentals;
- B ability to communicate effectively, not only with engineers but also with the community at large;
- C in-depth technical competence in at least one engineering discipline;
- D ability to undertake problem identification, formulation and solution;
- E ability to utilise a systems approach to design and operational performance;
- F ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;
- G understanding of the social, cultural, global and environmental responsibilities of professional engineering, and the need for sustainable development;
- H understanding of the principles of sustainable design and development;
- I understanding of professional and ethical responsibilities and commitment to them; and
- J expectation of the need to undertake lifelong learning, and capacity to do so.

UWA Educational Principles

- 1 Master the subject matter and techniques of their chosen discipline at internationally-recognised levels and standards;
- 2 Acquire the skills required to learn, and to continue through life to learn, from a variety of sources and experiences;
- 3 Adapt acquired knowledge to new situations;
- 4 Write and speak clearly, concisely and logically;
- 5 Think and reason logically and creatively;
- 6 Question accepted wisdom and be open to new ideas and possibilities;
- 7 Develop mature judgement and responsibility in moral, social and practical, as well as academic matters;
- 8 Develop the capacity to take a leadership role in the community.

Oil and Gas units in Oil and Gas Engineering		Generic IEAust Attributes										UWA Educational Principles							
		A	B	C	D	E	F	G	H	I	J	1	2	3	4	5	6	7	8
Oil and Gas Engineering																			
Unit	Code																		
History, econ. and geopol. of oil&gas	650.201							*		*					*	*		*	
Hydrodynamics and multiphase flow	650.301	*		*	*	*						*		*		*			
Oil&Gas Processing	650.304	*	*	*	*			*		*	*	*	*	*	*	*			
Oil&Gas Extraction	650.305	*	*	*	*			*		*	*	*	*	*	*	*			
Naval Architecture	650.320	*	*	*	*	*						*		*	*	*			
Offshore Platforms	650.321	*	*	*	*	*	*				*	*		*	*	*	*		
Oil&Gas Eng.	650.401	*	*	*	*			*		*	*	*	*	*	*	*			
Oil&Gas Eng.	650.402	*	*	*	*			*		*	*	*	*	*	*	*			
Oil&Gas Eng. Proj.	650.406	*	*	*	*	*					*	*	*	*	*	*	*	*	
Oil&Gas Processing	650.411	*		*	*			*				*		*		*			
Oil&Gas Processing	650.412	*		*	*			*				*		*		*			
Platform, Pipeline and Subsea Techn.	650.403	*	*	*	*	*	*					*		*	*	*	*		
Ocean Engineering	650.441	*		*	*	*						*		*		*			

Units available from the postgraduate program in Oil and Gas Engineering

Unit	Code	A	B	C	D	E	F	G	H	I	J	1	2	3	4	5	6	7	8
Reservoir Engin.	650.502	*	*	*	*						*			*	*	*			
Well Engineering	650.505	*				*			*		*		*	*	*	*			
Environmental Eng.	650.508	*	*				*	*				*		*	*	*	*	*	
Drilling Engineering	650.509	*		*		*							*			*			
Oil and Gas Eco.	650.511		*					*	*		*				*		*		
Health and Safety	650.512					*		*	*	*						*	*		
Investment Manag..	650.601					*	*	*		*					*				
Material and Corros.	650.602	*				*			*		*					*			
Reliability and Risk	650.603				*	*		*		*				*		*	*		
Subsea Technology	650.604	*	*	*	*	*	*				*			*	*	*			
Oil and Gas Transm.	650.605	*		*		*					*	*	*						
Measurement & Control	650.621	*			*	*					*			*		*			
Fixed Offshore Platf.	650.632	*	*	*	*	*	*					*		*	*	*	*		

Faculty Core Units in Oil and Gas Engineering

		Generic IEAust Attributes										UWA Educational Principles							
		A	B	C	D	E	F	G	H	I	J	1	2	3	4	5	6	7	8
Faculty core units																			
Unit	Code																		
Intro. to Prof. Eng	600.103		*				*	*	*	*	*			*	*	*	*	*	*
Eng. and Society	600.400		*				*	*	*	*	*			*	*	*	*	*	*
Professional Pract	600.410	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Other Units in Oil and Gas Engineering

		Generic IEAust Attributes										UWA Educational Principles							
		A	B	C	D	E	F	G	H	I	J	1	2	3	4	5	6	7	8
Civil, Mineral & Mining																			
Unit	Code																		
Engineering Structures 101	610.101	*			*							*	*			*			
Introduction to Resource Eng.	660.103	*			*			*				*			*				
Modelling and Comp. Simulation	610.205	*			*										*				
Geomechanics	610.250	*		*	*									*	*				
Solid Mechanics	610.211	*	*		*									*	*				
Structural Mech.	610.212	*	*		*									*	*				
Reliability Eng	660.321	*		*	*	*				*			*	*	*	*	*	*	
Structural Eng	610.321	*		*	*									*					
Structural Eng.	610.322	*		*	*								*		*				
Fluid Mechanics	640.200	*	*	*	*								*	*	*	*	*		
Geomechanics	610.351	*		*	*								*	*	*	*			
Geomechanics	610.352	*		*	*								*	*	*	*			
Project Manag.	610.362		*		*	*	*				*		*	*	*	*	*	*	*
Structural Eng.	610.371	*		*	*								*		*				
Computer Anal. Of Structures	610.372	*		*	*								*		*				
Offshore Foundation Sys.	610.406	*	*	*	*	*							*	*	*	*			
Advanced Struct. Analysis	610.411	*		*	*								*		*				
Project Management	660.403	*	*	*	*	*	*	*					*	*	*	*	*	*	*
Project Management	660.404	*	*	*	*	*	*	*					*	*	*	*	*	*	*
Risk Engineering	660.461	*		*	*	*	*						*	*	*	*			
Geology-UWA																			
Unit	Code																		
Petroleum Geolog	520.352	*		*				*					*		*				
Murdoch University																			
Unit	Code																		
Control and Instrumentation	650.2xx	*			*	*						*		*					
Electrical-Electronic UWA																			
Unit	Code																		
Electromagnetics & Electromechanics	620.224	*			*	*	*						*						
Mechanical & Materials																			
Unit	Code																		
Applied Thermod.	630.200	*	*		*			*			*			*				*	
Materials Engin.	630.203	*			*									*	*	*			
Machine Dynamics	630.205	*	*		*	*	*	*		*			*						
Engineering Design	630.213	*	*	*		*	*	*					*	*					
Control & Mechatronics	630.322	*		*	*	*	*	*					*	*					
Mechanical Design	630.405	*					*	*	*		*		*	*	*				