

ADVANCED DIPLOMA OF PLANT ENGINEERING

MODULE DETAILS	<p>Module 7: Fluid Power Systems and Components</p> <p>Nominal duration: 4 weeks (32 hours total time commitment)</p> <p>This time commitment includes the preparation reading, attendance at each webinar (1 hour plus 15-30 minutes for discussion), and the time necessary to complete the assignments and further study.</p>
MODULE PURPOSE	<p>To provide a detailed examination of the basic hydraulic and pneumatic system principles and ways and means to design, install and troubleshoot such systems.</p>
PRE-REQUISITE MODULE(S)	<p>Module</p>
ASSESSMENT STRATEGY / CONDITIONS OF ASSESSMENT	<p>To evaluate the achievement of the learning outcomes; written assignments, group projects and practical exercises are set. The Training and Assessment Matrix (TAM) documents the assessment criteria included in these assessments, based on the learning outcomes. The Training and Assessment Strategy (TAS) documents the overall training strategy for this Advanced Diploma course. The conditions of assessment are outlined in the Assessment Guidelines, TAM and TAS. Written assignments, group projects and practical exercises are required to meet assessment criteria outlined in the Assessment Guidelines, TAM and TAS.</p>
SUMMARY OF LEARNING OUTCOMES	<ol style="list-style-type: none"> 1. Examine and discuss the fundamentals of fluid power systems 2. Describe the components and application of hydraulic systems 3. Describe the components and application of pneumatic systems 4. Interpret basic hydraulic and pneumatic circuits
Learning Outcome 1	<p>Examine and discuss the fundamentals of fluid power systems</p>

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Assessment Criteria	1.1	Examine the advantages and applications of fluid power
	1.2	Discuss the various hydraulic fluids and their properties
	1.3	Examine and discuss the laws and phenomena related to fluid power
Learning Outcome 2	Describe the components and application of hydraulic systems	
Assessment Criteria	2.1	Discuss the sources and application of hydraulic power
	2.2	Describe the pumps and actuators used in hydraulic systems
	2.3	Describe the types and construction of hydraulic cylinders
	2.4	Describe the hydraulic valve types and their respective symbols
	2.5	Discuss the auxiliary components used in hydraulic systems
Learning Outcome 3	Describe the components and application of pneumatic systems	
Assessment Criteria	3.1	Discuss the sources and applications of pneumatic power
	3.2	Describe linear and rotary pneumatic actuators
	3.3	Describe the pneumatic valve types and their respective symbols
	3.4	Discuss the auxiliary components used in pneumatic systems

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Learning Outcome 4	Interpret basic hydraulic and pneumatic circuits	
Assessment Criteria	4.1	Examine and discuss hydraulic and pneumatic circuits in terms of (a) symbols, (b) basic rules, (c) basic principles and (d) setting of circuit diagrams
	4.2	Draw and/or interpret basic hydraulic or pneumatic circuits
Delivery mode		
A combination of asynchronous and synchronous e-learning delivery comprising a judicious mix of interactive online web conferencing, simulation (virtual labs) software, remote online labs, online videos, PowerPoint slides, notes, reading and study materials (in PDF, HTML and Word format) accessed through the Moodle Learning Management System (LMS).		