

MANUFACTURING: KNOWLEDGE OF MANUFACTURING

Knowledge of manufacturing focuses on the underpinning concepts of manufacturing. This covers the systems and processes used in the production of goods. Initially students learn about different manufacturing systems and various categories of manufacturing techniques. Students progress to complex understandings that also include broader concepts such as the use and availability of resources and political, social, economic and environmental factors.

	LEVEL 6	LEVEL 7	LEVEL 8
LO	<i>Demonstrate understanding of basic manufacturing concepts and techniques</i>	<i>Demonstrate understanding of advanced manufacturing concepts and techniques</i>	
TEACHER GUIDANCE	<p>To support students to develop understandings about basic manufacturing concepts and techniques at level 6, teachers could:</p> <ul style="list-style-type: none"> • Provide a range of case studies to demonstrate different types of manufacturing systems. • Support students with their application of techniques used in manufacturing. • Support students to produce flow diagrams to communicate manufacturing processes. • Ensure students understand the need for differing manufacturing systems to meet specific requirements (eg, one off, batch and continuous production). 	<p>To support students to develop understandings about advanced manufacturing concepts and techniques at level 7, teachers could:</p> <ul style="list-style-type: none"> • Support students with their understanding of how quality management techniques impact on manufacturing products. • Present advanced technologies to students such as CNC, PLC or SCADA systems. • Ensure students understand key drivers on manufacturing such as customer, social, environmental and safety imperatives. Level 3 Technology: Draft achievement standards and assessment resources 	<p>LEARNING OBJECTIVE PROGRESSES TO: <i>Develop understanding of, and implement, a 'green' manufacturing process</i> See next page</p>
INDICATORS	<p>Students can:</p> <ul style="list-style-type: none"> • explain how safety issues were addressed in a manufacturing process • identify the impacts of new technologies and/or techniques on the suitability of different types of manufacturing systems and increased possibilities for quality control • discuss how and why quality management techniques have been important in changing manufacturing practices. 	<p>Students can:</p> <ul style="list-style-type: none"> • communicate manufacturing processes by using process flow and system diagrams • explain why particular types of manufacturing systems are used in specified contexts • discuss the application of a range of techniques to meet production requirements • discuss how yield prediction and its determination, and quality control mechanisms, may be affected by social and environmental change. 	
AS	<p>AS91055 Generic Technology 1.12 <i>Demonstrate understanding of basic concepts used in manufacturing</i></p>	<p>AS91365 Generic Technology 2.12 <i>Demonstrate understanding of advanced concepts used in manufacturing</i></p>	
	Level 1 Generic Technology standards & assessment resources	Level 2 Generic Technology standards & assessment resources	Level 3 Technology achievement standards & assessment resources DRAFT