

Composites Curriculum – Unit information

Taught block title	Manufacturing Operation B	
Unit title	Agile, Lean, Six Sigma and similar methods	
Level (Credit points)	M(2)	
Unit director	Initial draft by John Summerscales	
Unit description		
<p>This unit forms part of the Masters level Composites Curriculum. It introduces learners to the administration and quality systems that potentially make an adequate organisation into a best-in-sector operation. The course should be delivered with a focus on exemplar case studies from within the composites industry. The module complements Manufacturing Operations A/Process Monitoring.</p>		
Core subjects to be covered		
<ol style="list-style-type: none"> 1. World-Class organisational culture 2. Quality management and the gurus 3. Customer needs and requirements 4. Houses of Quality (QFD), 5. SPC, PFMECA, Kaizen, Poka-Yoke 6. Computer Aided Production Management 7. Six Sigma/DMAIC 8. Process capability, variability and yield 	<ol style="list-style-type: none"> 9. Empowering employees as decision makers 10. Appropriate supplier/partner relationships 11. Supply chain management and risk 12. Effective IT, data integrity, ERP 13. Change management (or failures) 14. Lean/agile transformations 15. Integrate ISO9000/14000/27000 & OHSAS18000 	
Statement of unit aims		
<p>The aims of this unit are to:</p> <ol style="list-style-type: none"> 1. Provide learners with a broad overview of systems which enable sustainable commercial business. 2. Identify techniques, and case studies, that can be implemented in industry. 3. Provide a framework for critical analysis of composite manufacturing operations. 4. Identify support systems for improvement of manufacturing operations. 		
Statement of learning outcomes		
<p>Learners will be able to:</p> <ol style="list-style-type: none"> 1. Clearly describe quality management systems in the context of composites manufacture. 2. Understand the routes to optimisation of composites manufacturing processes 3. Undertake critical analysis of failing commercial systems. 		
Methods of teaching	7 lectures, 2 tutorials, 1 group exercise	
Assessment details if required	Written assignment (85%), 20 minute assessed presentation (15%)	
Timetable information	2 days of teaching in a block	