

Composites Curriculum – Unit information

Taught block title	Manufacturing Operations A	
Unit title	Process modelling	
Level (Credit points)		
Unit director	Alex Skordos	
Unit description		
This unit deals with the simulation of composites manufacturing covering the main processing steps and the use of simulation for process design.		
Core subjects to be covered		
<ol style="list-style-type: none"> 1. Drape modelling 2. Forming simulation 3. Filling simulation 4. Consolidation simulation 5. Cure simulation 6. Modelling of residual stress development 7. Model validation 8. Process optimisation 9. Variability and stochastic simulation 		
Statement of unit aims		
The aims of this unit are to:		
<ol style="list-style-type: none"> 1. Provide Learners with knowledge of the main methodologies for simulating composites manufacturing 2. Present simulation in the context of practical process design 3. Provide an understanding of the capabilities of simulation tools 		
Statement of learning outcomes		
Learners will be able to:		
<ol style="list-style-type: none"> 1. Understand the approaches used to translate relevant physical phenomena to models 2. Practise the use of simulation tools covering aspects of composites manufacturing simulation 3. Understand the role of modelling in the development and design of processing methods 		
Methods of teaching	9 lectures, 9 computer based tutorials	
Assessment details if required	Written assessment (100%)	
Timetable information	3 days teaching in a block	