

Module Title:	Form and Specification
Language of Instruction:	English
Credits:	5
NFQ Level:	7
Module Delivered In	2 programme(s)
Teaching & Learning Strategies:	A combination of lecture and demonstration introduce learners to more advanced feature-based, parametric solid-modelling. The focus of this module is on demonstrating the fundamental skills and concepts central to the successful use and integration of three-dimensional solid modelling with other course work. The module is designed around process or task-based training with particular emphasis on the process and procedures necessary to complete a distinct solid modelling task. Solid modelling skills are introduced by a series of interactive demonstrations and work examples. These work examples are followed by pedagogical-sequenced exercises designed to allow learners to practice the various skills that have been discussed and used in the work examples. Course-defined projects will be set as submission requirements for this module. Students will prepare a suite of files to include a solid model assembly (parts and assembly files), a general assembly drawing, and detailed parts drawings fully-dimensioned and annotated as required for fabrication. Examples and exercises will be used to demonstrate additional solid-modelling skills. Tutorial exercises will allow students to practice these skills.
Module Aim:	The aim of this module is to further develop 3D modelling skills and 2D technical drawing skills to facilitate and support Design Studio 3 (Industrial Design) work. To consider safety standards so that Learners can design and develop products that conform to relevant EN Standards, in particular BS EN 60335-1:2012+A2:2019. To encourage learners to recall specific elements from the Modelling Design Features module and apply these elements, namely actionable design guidelines and process-specific design features, with and within the safety parameters outlines in the appropriate EN Standard.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Learners will direct their concepts and design proposals to ensure that design for manufacture, assembly and quality have been fully and holistically considered.
LO2	Exploration and creation of complex three dimensional form, complete with internal details. Incorporation of key actionable design guidelines to reduce/eliminate common injection moulded defects. Demonstrate an understanding of toolmaking, production, assembly and post-service requirements.
LO3	Interpretation and implementation of safety standards pertaining to product category or categories.
LO4	Prepare fully annotated suite of drawings and documentation, including Bill of Materials, GA drawings with exploded view and set of Parts with advanced views such as auxiliary views, crop views and alternate position views, as required to fully specify the parts and standard components and assembly details necessary for production.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content

Design Standards

Learners will be introduced to BS EN 60335-1:2012+A2:2019, General requirements and safety standards for household and similar electrical appliances and work their way through a case study to design a mains powered appliance that conforms to this standard.

Product Specification

Learners will use 3D modelling techniques to explore complex form generation that accurately reflect case studies and/or their own sketch proposals. Learners will be encouraged to take a more holistic view of 3D modelling to ensure that the outward form, the internal detailing and adherence to product safety standards are always considered. The 3D modelling will also be closely aligned to the Form and Story project in Design Studio 3 and the final output shall include a fully annotated suite of drawings and documentation, including Bill of Materials, GA drawings with exploded view and set of Parts with advanced views such as auxiliary views, crop views and alternate position views, as required to fully specify the parts and standard components and assembly details necessary for production.

Triennial Talks

Learners will attend a triennial talk/conference in Y2, Y3 and Y4. Each year the subject matter will be rotated to include presentations on: Design for Quality (Six Sigma/Lean Engineering), Design for Manufacture (Plastics- Injection Moulding/Toolmaking) and (Metal -CNC Sheet Metal/Fabrication/Machining/Casting).

Assessment Breakdown	%
Continuous Assessment	100.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Case Studies	Submission of three case studies implementing lofting, surface modelling and hybrid and other advanced 3D CAD modelling techniques to replicate details and features on case study products selected from the Red Dot Awards archive.	2,3	25.00	n/a
Project	Submission of CAD files, parts and assembly file of form generation and internal details for the Repositioning Project, a studio-based project undertaken in Design Studio 3 (Industrial Design)	1,2,4	75.00	n/a

No Project

No Practical

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	4.00
Total Hours		4.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_DHPDI_B	Bachelor of Arts (Honours) in Product Design Innovation	6	Mandatory
CW_DHIDE_D	Bachelor of Arts in Design	6	Mandatory