

MODULE DES2020: 3-D DESIGN APPLICATIONS

Level: Intermediate

Theme: Design Skills, Processes and Applications

Prerequisite: None

Module Description: Students apply the design process and other knowledge, skills and processes learned at the introductory level to three-dimensional design projects. Projects in this module typically deal with problems and issues related to product design. Students take greater responsibility for managing their learning and learn to work cooperatively with others.

Module Parameters: Basic sketching, drawing and modelling tools and equipment and/or a computer. Specialized facilities or equipment depend on the approach taken to 3-D model development.

Note: It is recommended that students have access to instruction from an individual with formal, specialized training in product or industrial design.

Supporting Module: DES1020 The Design Process

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none">plan and produce solutions to intermediate level three-dimensional design briefs	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none">resolution of a teacher- and/or student-specified intermediate level three-dimensional project brief(s). <p><i>Assessment Tool</i> <i>Project Assessment: Design Skills, Processes and Applications (Intermediate) (DESPRJ-2A)</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each criteria</i></p>	60
<ul style="list-style-type: none">use, effectively, the elements and principles of design	<ul style="list-style-type: none">selection and effective use of elements and principles of design in project work. <p><i>Assessment Tool</i> <i>Project Assessment: Design Skills, Processes and Applications (Intermediate) (DESPRJ-2A)</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each criteria</i></p>	20

MODULE DES2020: 3-D DESIGN APPLICATIONS (continued)

Concept	Specific Learner Expectations	Notes
Skills Development (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> identify mathematical and/or scientific principles as they apply to design projects assigned; e.g., structural principles applied to strength and stability, principles of mass and buoyancy applied to flotation; principles of energy and control as applied to movement and power. 	
Elements and Principles of Design	<ul style="list-style-type: none"> use elements and principles of design in design projects. 	It is important for students to experiment with form; the form of objects and the space they occupy.
Applied Problem Solving	<ul style="list-style-type: none"> follow through a design process to solve three-dimensional design problems(s); e.g., a toy made of wood or fabric for a preschool child, a sustained motion machine, a “boat” made of wood, paper, glue and shellac or a seat for a patio or garden select and use appropriate tools and materials as outlined in the design brief. 	<p>Students should examine various types of structures and the principles they are based on. They will learn why some structures are successful while others fail. This knowledge can then be applied to their design tasks.</p> <p>Scale models may be produced in this module. For example, a student may produce a scale model of a chair, a catapult or a bridge. The model could be tested for strength and durability, then if appropriate, a final prototype could be produced.</p>
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> see Specific Learner Expectations from 2-D Design Applications. 	See notes from 2-D Design Applications.

