

MODULE DES1040: 3-D DESIGN FUNDAMENTALS

Level: Introductory

Theme: Design Skills, Processes and Applications

Prerequisite: None

Module Description: Students develop skills and techniques appropriate to three-dimensional design, by engaging in a variety of activities in various contexts. Techniques may include drawing, modelling, use of tools and equipment appropriate to three-dimensional design, cutting, joining, measuring and use of notations.

Module Parameters: Access to basic sketching, drawing and modelling tools and equipment and a computer. Specialized facilities or equipment depend on the approach taken to the module.

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

Supporting Module: DES1010 Sketch, Draw & Model

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">identify and practise three-dimensional design techniques; e.g., cutting, joining, manipulating	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none">proficient use of teacher-specified three-dimensional design techniques through practice exercises. <p><i>Assessment Tool</i> <i>Project Assessment: 3-D Design Fundamentals Checklist (DES1040-1)</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each criteria</i></p>	25
<ul style="list-style-type: none">identify and use materials and tools common to three-dimensional design; e.g., cardboard, plastic, wood, styrofoam, wire, modelling clay	<ul style="list-style-type: none">proficient use of teacher-specified tools and materials through practice exercises. <p><i>Assessment Tool</i> <i>Project Assessment: 3-D Design Fundamentals Checklist (DES1040-1)</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each criteria</i></p>	25

MODULE DES1040: 3-D DESIGN FUNDAMENTALS (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • identify, select and use elements and principles of design in project activities • use three-dimensional design techniques to solve simple design problems; e.g., simple bridging structures, container, pencil holder • select, organize and present design projects • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • identification of elements and principles of design through teacher-specified examination or project work. <p><i>Assessment Tool</i> <i>Authorized resources for explanation and examples of elements and principles of design</i> <i>Project Assessment: Design Skills, Processes and Applications (Introductory) (DESPRJ-1B)</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> • proficient use of at least two sketching, drawing and/or layout techniques in the context of resolving a teacher-specified introductory level design brief. <p><i>Assessment Tool</i> <i>Project Assessment: 3-D Design Fundamentals Checklist (DES1040-1)</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> • maintenance and presentation of a module-based design portfolio emphasizing the techniques learned through module work. <p><i>Assessment Tool</i> <i>Presentations/Reports: Design Skills, Processes and Applications (Introductory) (DESPRE-1A)</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>10</p> <p>30</p> <p>10</p> <p>Integrated throughout</p>

MODULE DES1040: 3-D DESIGN FUNDAMENTALS (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • demonstrate techniques common to three-dimensional design such as: <ul style="list-style-type: none"> – brainstorming ideas; e.g., thumbnail sketching or modelling, working with a partner to generate ideas – manipulating forms and space; e.g., shaping and creating forms within a defined space – practising basic modelling techniques; e.g., measuring, cutting, joining, bending – relating materials and techniques; e.g., given a material, select useful tools for cutting, joining, bending • use terminology associated with the techniques learned • identify specified materials and tools and describe some of their characteristics and uses in the design context • use specified materials in a safe and appropriate manner • identify tools appropriate to design and use them in a safe and appropriate manner • demonstrate basic skills associated with tasks engaged in; e.g., be able to measure accurately and cut/join/manipulate materials safely. 	<p>The techniques and terminology learned in this module will form part of the foundation for continuing on in Design Studies. Additional techniques and terminology will be learned in other modules as the need arises. Teachers may wish to teach additional material in this module where appropriate to their program.</p>
Elements and Principles of Design	<ul style="list-style-type: none"> • identify the elements and principles of design and use them in the context of the techniques learned and problems addressed • explain how and why elements and principles were used in project work. 	<p>The elements and principles of design are listed in The Design Process.</p>

MODULE DES1040: 3-D DESIGN FUNDAMENTALS (continued)

Concept	Specific Learner Expectations	Notes
<p>Applied Problem Solving</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • select two or more three-dimensional design problems and work them through, using a process of design • use basic techniques common to three-dimensional design in working through design problems • select and use appropriate tools and materials as outlined in the design brief. 	<p>Teachers may wish to prescribe design briefs for their students in this module in order to ensure specific techniques are learned.</p> <p>Students are expected to work within the constraints identified in each design brief. Constraints related to materials, deadlines, function, aesthetics, ergonomics, etc., will require students to assign priority to optimize their result. Students will need guidance to learn the decision-making skills necessary to do this.</p>
<p>Presentation, Design Journal and Portfolio</p>	<ul style="list-style-type: none"> • see Specific Learner Expectations in Sketch, Draw & Model and The Design Process. 	<p>For some students, this will be the third module taken in Design Studies. Students who are comfortable with presenting their work to others should be encouraged to do so. Through discussing their work with others, the basics of critiquing (making and receiving suggestions) can be established.</p> <p>To encourage students to present and discuss their work, teachers may have two or three students make a joint presentation thereby reducing the pressure on one individual.</p>