

# MODULE CURRICULUM AND ASSESSMENT STANDARDS:

## SECTION D: INTRODUCTORY LEVEL

The following pages define the curriculum and assessment standards for the introductory level of Design Studies.

Introductory level modules help students build daily living skills and form the basis for further learning. Introductory modules are developed for students who have no previous experience in the strand.

Module learner expectations define the competencies a student must demonstrate to achieve success in a module. Assessment standards define the criteria and conditions to be used for assessing the competencies defined in the module learner expectations.

Specific learner expectations provide a detailed framework for instruction to help students build the competencies defined in the module learner expectations. Additional information and suggestions for instruction are provided in the Notes column; teachers may wish to use this space to record their ideas for instruction or student projects.

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## MODULE DES1010: SKETCH, DRAW & MODEL

**Level:** Introductory

**Theme:** Design Skills, Processes and Applications

**Prerequisite:** None

**Module Description:** Students are introduced to observational sketching and drawing, and modelling, and to a selection of materials and tools and their uses. Students also develop skills that can be used and enhanced in further design activity.

**Module Parameters:** Access to basic sketching, drawing and modelling tools and equipment and a computer.

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

### 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"><li>• sketch, manually, and draw and model, natural and manufactured three-dimensional forms</li></ul> | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>• sketches, drawings and models of natural and manufactured three-dimensional forms produced in response to teacher-specified assignments. Images will be recognizable as the subject and demonstrate a sense of proportion and scale.</li></ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: Techniques, Tools, Materials and Applications Checklist (DESPRJ-1A)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p> | 60                 |
| <ul style="list-style-type: none"><li>• use manual sketching/drawing and modelling materials, and tools effectively</li></ul>  | <ul style="list-style-type: none"><li>• the use of three or more sketching, drawing and modelling materials and tools.</li></ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: Techniques, Tools, Materials and Applications Checklist (DESPRJ-1A)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p>   | 30                 |



**MODULE DES1010: SKETCH, DRAW & MODEL (continued)**

| Concept                                    | Specific Learner Expectations   | Notes   |
|--|---|---|
| Skills Development<br>(continued)          | <i>The student should:</i>  | <p>Designers who work in three dimensions often visualize their ideas by manipulating various materials such as wooden or foam blocks of differing shapes. This manipulation provides a three-dimensional model of what the potential solution might look like with respect to size, shape, volume, etc.</p> <p>Different media provide different results and students need to be aware of this. Skills in the use of various media will develop as students engage in other design activities.</p>   |
| Presentation, Design Journal and Portfolio | <ul style="list-style-type: none"> <li>• show and describe sketches, drawings and models to the teacher and to at least one other class member</li> <li>• maintain a design journal/sketchbook. This would typically include notes, ideas and rough or thumbnail sketches</li> <li>• maintain a portfolio of ongoing observational drawing and modelling activities, which in this module would include all sketches, drawings and models produced in the module, the design journal and any other supplementary material considered important</li> <li>• describes how sketching, drawing and modelling assists in solving design problems.</li> </ul> | <p>Students at the introductory level may be reluctant to share and discuss their work with a group of their peers. Sharing can be done informally, one on one with the teacher, and as the opportunity presents itself, with one or more class members.</p> <p>The portfolio will provide a developmental record of the student's breadth and depth of observational drawing and modelling capability. It should be updated upon completion of each design task. Over time, less important examples of work should be replaced with more significant pieces.</p> |



## MODULE DES1020: THE DESIGN PROCESS

**Level:** Introductory

**Theme:** Design Skills, Processes and Applications

**Prerequisite:** None

**Module Description:** Students begin this process-based activity by developing an understanding of the problem through research. They then develop possible solutions, working through them to arrive at a final, appropriate solution.

**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"><li>identify a design process and apply it throughout the instructional period</li></ul> | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>observation of the work processes throughout the instructional period and review of the design journal.</li></ul> <p><i>Assessment Tool</i><br/><i>Design Studies Process Standards Assessment Framework (DESPAF-1)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p>                             | 60                 |
| <ul style="list-style-type: none"><li>produce a designed solution</li></ul>  | <ul style="list-style-type: none"><li>student's response to a teacher-specified, introductory level design brief in two-dimensional, three-dimensional, and/or combined two-dimensional and three-dimensional design.</li></ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: Design Skills, Processes and Applications (Introductory) (DESPRJ-1B)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p> | 30                 |



**MODULE DES1020: THE DESIGN PROCESS** (continued)

| Concept                           | Specific Learner Expectations   | Notes  |
|-----------------------------------|---|--|
| Skills Development<br>(continued) | <p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>read a design brief and identify the task, constraints and other pertinent information.</li> </ul>   | <p>This should be done in an informal manner. (See the notes on presentation from Sketch, Draw and Model.)</p> <p>Briefs are common in the design field. They provide the designer with basic information for the design task and are often based on something that exists.</p>  |
| Elements and Principles of Design | <ul style="list-style-type: none"> <li>identify the design elements (line, shape, form, pattern, space, texture, colour) and principles (balance, emphasis, proportion, rhythm, unity and variety) as they apply to composition and form.</li> </ul>  | <p>Awareness of the elements and principles of design will increase with each design challenge. Students need only recognize the existence of these elements and principles in this module and be able to identify some of them.</p>   |
| Applied Problem Solving           | <ul style="list-style-type: none"> <li>follow a design process to create solutions for one or more projects taken from two-dimensional design (e.g., poster, brochure, repetitive pattern, personal monogram), and/or three-dimensional design (e.g., cardboard desk organizer, cloth locker organizer, a self-propelled elastic band-powered car) and/or a project combining two- and three-dimensional design (e.g., bicycle light with logo, package for a festive ornament, model of a museum display or store window display package for an abstract idea such as multiculturalism) based on design briefs provided</li> <li>select and use appropriate tools and materials as outlined in the design brief</li> <li>use and maintain tools and materials in a safe and appropriate manner.</li> </ul> | <p>The product/solution to the problem will be determined by the need as stated in the design brief. Students will need help interpreting the first few briefs they receive.</p> <p>Successful designers tend to have a broad range of experience. Having students engage in a variety of design tasks will help to broaden their horizons and enhance their ability to design.</p> <p>Teachers may wish to limit tools and materials to provide specific constraints to the design projects assigned.</p> |

**MODULE DES1020: THE DESIGN PROCESS** (continued)

| Concept   | Specific Learner Expectations   | Notes  |
|---|---|--|
| <p>Presentation, Design Journal and Portfolio</p> | <p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• show and describe projects with the teacher and with at least one other class member</li> <li>• maintain a design journal and a portfolio, which in this module would include all design work such as drawings, research notes and designed solutions, and any other supplementary material considered important</li> <li>• prepare for and actively participate in a final presentation and critique of design work. Effectively communicate intentions and decision making related to the design project.</li> </ul> | <p>Students need to be constructively critical of their own designs and the designs of others. It is not good enough to “like” or “dislike” without giving reasons for their preference. It is important that they recognize this both as designers and as consumers of design. At this level they should be able to critically discuss their work with their teacher.</p> <p>Students can track the steps they took and materials/processes they used in solving their design brief. Their journal can become a future reference source. It is also a good mechanism for assessing process.</p> |

## MODULE DES1030: 2-D DESIGN FUNDAMENTALS

**Level:** Introductory

**Theme:** Design Skills, Processes and Applications

**Prerequisite:** None

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

**Module Parameters:** Access to basic sketching, drawing and layout 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"> <li>identify and practise two-dimensional design techniques; e.g., layout, use of grids, use of typography</li> </ul> | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>proficient use of teacher-specified two-dimensional design techniques through practice exercises.</li> </ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: 2-D Design Fundamentals Checklist (DES1030-1)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p> | 25                 |
| <ul style="list-style-type: none"> <li>identify and use materials and tools common to two-dimensional design; e.g., card, cutting tools, computer graphics packages</li> </ul>           | <ul style="list-style-type: none"> <li>proficient use of teacher-specified tools and materials through practice exercises.</li> </ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: 2-D Design Fundamentals Checklist (DES1030-1)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p>   | 25                 |

**MODULE DES1030: 2-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"> <li>• identify, select and use elements and principles of design in project activities</li> <li>• use two-dimensional design techniques to solve simple design problems; e.g., advertisement layout, greeting cards, sign, poster, package graphics</li> <li>• select, organize and present design projects</li> <li>• demonstrate basic competencies.</li> </ul> | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• identification of elements and principles of design through teacher-specified examination or project work.<br/><i>Assessment Tool</i><br/><i>Authorized resources for explanation and examples of elements and principles of design</i><br/><i>Project Assessment: Design Skills, Processes and Applications (Introductory) (DESPRJ-1B)</i></li> <li>• proficient use of at least two sketching, drawing and/or layout techniques in the context of resolving a teacher-specified introductory level design brief.<br/><i>Assessment Tool</i><br/><i>Project Assessment: 2-D Design Fundamentals Checklist (DES1030-1)</i><br/><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></li> <li>• maintenance and presentation of a module-based design portfolio emphasizing the techniques learned through module work.<br/><i>Assessment Tool</i><br/><i>Presentations/Reports: Design Skills, Processes and Applications (Introductory) (DESPRE-1A)</i><br/><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></li> <li>• observations of individual effort and interpersonal interaction during the learning process.<br/><i>Assessment Tool</i><br/><i>Basic Competencies Reference Guide and any assessment tools noted above</i></li> </ul> | <p>10</p> <p>30</p> <p>10</p> <p>Integrated throughout</p> |

**MODULE DES1030: 2-D DESIGN FUNDAMENTALS (continued)**

| Concept                           | Specific Learner Expectations  | Notes   |
|-----------------------------------|--|---|
| Skills Development                | <p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate techniques common to two-dimensional design such as: <ul style="list-style-type: none"> <li>– brainstorming ideas; e.g., thumbnail sketching, working with a partner to generate ideas</li> <li>– laying out; e.g., shapes and images within a defined space, aligning, measuring, cutting, joining, drawing design components</li> <li>– using typography; e.g., generating and manipulating letters, numbers and symbols</li> <li>– preparing camera ready artwork for specific purposes (e.g., line negatives and positives)</li> </ul> </li> <li>• use terminology associated with the techniques learned; e.g., know what a thumbnail sketch is and how it is used, know the similarities and differences between a serif and san-serif type styles</li> <li>• demonstrate basic skills associated with tasks engaged in; e.g., be able to organize several images within a defined two-dimensional space using the principles of design, and be able to measure accurately and cut/join/manipulate materials safely.</li> </ul> | <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"> <li>• identify the elements and principles of design and use them in the context of the techniques learned and problems addressed</li> <li>• describe how and why elements and principles were used in project work</li> <li>• organize visual elements using selected strategies (e.g., rule of thirds, “S” curve, positive/negative space) in completing technical exercises and projects.</li> </ul>   | <p>The elements and principles of design are listed in The Design Process.</p>  |

**MODULE DES1030: 2-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"> <li>• select two or more two-dimensional design problems and work them through, using a process of design</li> <li>• use basic techniques common to two-dimensional design in working through design problems</li> <li>• select and use appropriate tools and materials as outlined in the design brief.</li> </ul> | <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"> <li>• see Specific Learner Expectations in Sketch, Draw &amp; Model and The Design Process.</li> </ul>  | <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> |

## 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"><li>identify and practise three-dimensional design techniques; e.g., cutting, joining, manipulating</li></ul>          | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>proficient use of teacher-specified three-dimensional design techniques through practice exercises.</li></ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: 3-D Design Fundamentals Checklist (DES1040-1)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p> | 25                 |
| <ul style="list-style-type: none"><li>identify and use materials and tools common to three-dimensional design; e.g., cardboard, plastic, wood, styrofoam, wire, modelling clay</li></ul> | <ul style="list-style-type: none"><li>proficient use of teacher-specified tools and materials through practice exercises.</li></ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: 3-D Design Fundamentals Checklist (DES1040-1)</i></p> <p><i>Standard</i><br/><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"> <li>• identify, select and use elements and principles of design in project activities</li> <li>• use three-dimensional design techniques to solve simple design problems; e.g., simple bridging structures, container, pencil holder</li> <li>• select, organize and present design projects</li> <li>• demonstrate basic competencies.</li> </ul> | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• identification of elements and principles of design through teacher-specified examination or project work.</li> </ul> <p><i>Assessment Tool</i><br/> <i>Authorized resources for explanation and examples of elements and principles of design</i><br/> <i>Project Assessment: Design Skills, Processes and Applications (Introductory) (DESPRJ-1B)</i></p> <p><i>Standard</i><br/> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> <li>• proficient use of at least two sketching, drawing and/or layout techniques in the context of resolving a teacher-specified introductory level design brief.</li> </ul> <p><i>Assessment Tool</i><br/> <i>Project Assessment: 3-D Design Fundamentals Checklist (DES1040-1)</i></p> <p><i>Standard</i><br/> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio emphasizing the techniques learned through module work.</li> </ul> <p><i>Assessment Tool</i><br/> <i>Presentations/Reports: Design Skills, Processes and Applications (Introductory) (DESPRE-1A)</i></p> <p><i>Standard</i><br/> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal interaction during the learning process.</li> </ul> <p><i>Assessment Tool</i><br/> <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"> <li>• demonstrate techniques common to three-dimensional design such as:               <ul style="list-style-type: none"> <li>– brainstorming ideas; e.g., thumbnail sketching or modelling, working with a partner to generate ideas</li> <li>– manipulating forms and space; e.g., shaping and creating forms within a defined space</li> <li>– practising basic modelling techniques; e.g., measuring, cutting, joining, bending</li> <li>– relating materials and techniques; e.g., given a material, select useful tools for cutting, joining, bending</li> </ul> </li> <li>• use terminology associated with the techniques learned</li> <li>• identify specified materials and tools and describe some of their characteristics and uses in the design context</li> <li>• use specified materials in a safe and appropriate manner</li> <li>• identify tools appropriate to design and use them in a safe and appropriate manner</li> <li>• demonstrate basic skills associated with tasks engaged in; e.g., be able to measure accurately and cut/join/manipulate materials safely.</li> </ul> | <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"> <li>• identify the elements and principles of design and use them in the context of the techniques learned and problems addressed</li> <li>• explain how and why elements and principles were used in project work.</li> </ul>   | <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"> <li>• select two or more three-dimensional design problems and work them through, using a process of design</li> <li>• use basic techniques common to three-dimensional design in working through design problems</li> <li>• select and use appropriate tools and materials as outlined in the design brief.</li> </ul> | <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"> <li>• see Specific Learner Expectations in Sketch, Draw &amp; Model and The Design Process.</li> </ul>  | <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> |

**MODULE DES1050: CAD FUNDAMENTALS (COMPUTER-AIDED DESIGN)****Level:** Introductory**Theme:** Drafting for Design and Technical Drawing Skills**Prerequisite:** None**Module Description:** Students develop basic knowledge and skills in computer-aided design (CAD).**Module Parameters:** Access to a computer with a CAD software package, a printer and/or plotter, and basic sketching and drawing tools and equipment.**Note:** It is recommended that students have access to instruction from an individual with formal, specialized training in a design discipline, drafting and in CAD.**Supporting Module:** DES1060 Drafting/Design Fundamentals**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"> <li>demonstrate basic knowledge and skills required to operate CAD software</li> </ul>   | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>skills examination on CAD software.</li> </ul> <p><i>Assessment Tool</i><br/><i>Teacher-designed examination (approximately 20 questions/tasks) specific to designated CAD application</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p> | 30                 |
| <ul style="list-style-type: none"> <li>use CAD to produce and print/plot a multiview drawing and/or pictorial drawing and/or surface development</li> </ul> | <ul style="list-style-type: none"> <li>production of a multiview and/or pictorial drawing and/or surface development.</li> </ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: CAD Fundamentals, (DES1050-1)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p>   | 60                 |



**MODULE DES1050: CAD FUNDAMENTALS (COMPUTER-AIDED DESIGN (continued)**

| Concept                                    | Specific Learner Expectations   | Notes  |
|--|---|--|
| Skills Development<br>(continued)          | <i>The student should:</i>  | <p>Teachers will determine the computer and software students will use.</p> <p>An important indication of a student's skill development in this module will be how quickly they can access and use the CAD software to produce assigned drawings. This element of "speed" can be one indicator of capability when the student is assessed.</p> |
| Applied Problem Solving                    | <ul style="list-style-type: none"> <li>• select and use CAD tools, methods and functions to produce multiview drawing(s) (minimum three views) from simple three-dimensional objects (e.g., angled wooden blocks, foot stool, chair) or from pictorial drawing(s) (e.g., isometric, oblique, perspective) of these objects and/or pictorial drawings and/or surface developments</li> <li>• demonstrate the use of layers on at least one drawing.</li> </ul> | Applied problem solving in this module centres on the student's ability to select appropriate tools, methods and functions for achieving specific tasks.   |
| Presentation, Design Journal and Portfolio | <ul style="list-style-type: none"> <li>• print/plot drawings and include them in a design portfolio.</li> </ul>   | As this is a skill development module, students may not formally present their work as they would in other modules (e.g., 3-D Design Fundamentals). Students should still be able to describe what they are doing if asked.  |



## MODULE DES1060: DRAFTING/DESIGN FUNDAMENTALS

**Level:** Introductory

**Theme:** Drafting for Design and Technical Drawing Skills

**Prerequisite:** None

**Module Description:** Students develop basic knowledge, skills and techniques to draft appropriate drawings for visualizing and illustrating simple design problems.

**Module Parameters:** Access to basic sketching and drawing tools and equipment, drafting tables, equipment and materials and/or a computer with a computer-aided design (CAD) software package, a printer and/or plotter.

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

**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"><li>produce pictorial representations and multiview drawings from sketches and/or three-dimensional objects</li></ul> | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>production of one of each of the following based on teacher-specified three-dimensional references and/or sketches:<ul style="list-style-type: none"><li>freehand pictorial drawing aided by a pictorial drawing grid</li><li>pictorial drawing aided by mechanical drafting equipment or CAD</li><li>dimensioned multiview drawing aided by mechanical drafting equipment or CAD.</li></ul></li></ul> <p><i>Assessment Tool</i><br/><i>Project Assessment: Drafting/Design Fundamentals (DES1060-1)</i></p> <p><i>Standard</i><br/><i>Performance rating of 1 for each criteria</i></p> | 90                 |

**MODULE DES1060: DRAFTING/DESIGN FUNDAMENTALS** (continued)

| Module Learner Expectations  | Assessment Criteria and Conditions  | Suggested Emphasis   |
|--|---|--|
| <p><i>The student will:</i></p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>• produce pictorial representations and surface developments for items in context; e.g., garments, sheet metal fabrication, packaging</li> <li>• select, organize and present design projects</li> <li>• demonstrate basic competencies.</li> </ul> | <p><i>Assessment of student achievement should be based on:</i></p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>• production of the following based on teacher-specified three-dimensional references and/or sketches:               <ul style="list-style-type: none"> <li>– two freehand pictorial drawings of items (e.g., garments, sheet metal, packaging) in context</li> <li>– one surface development for construction aided by mechanical drafting equipment or CAD.</li> </ul> </li> </ul> <p><i>Assessment Tool</i><br/> <i>Project Assessment: Drafting/Design Fundamentals. (DES1060–1)</i></p> <p><i>Standard</i><br/> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and the student’s discourse, emphasizing his or her understanding of basic drafting techniques and their application to drawings produced.</li> </ul> <p><i>Assessment Tool</i><br/> <i>Presentations/Reports: Drafting for Design and Technical Drawing Skills (Introductory) (DESPRE–1B)</i></p> <p><i>Standard</i><br/> <i>Performance rating of 1 for each criteria</i></p> <ul style="list-style-type: none"> <li>• observation of individual effort and interpersonal interaction during the learning process.</li> </ul> <p><i>Assessment Tool</i><br/> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p> | <p style="text-align: center;">90</p> <p style="text-align: center;">10</p> <p style="text-align: center;">Integrated throughout</p> |

**MODULE DES1060: DRAFTING/DESIGN FUNDAMENTALS (continued)**

| Concept            | Specific Learner Expectations  | Notes  |
|--------------------|--|--|
| Skills Development | <p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify common pictorial drawing types; e.g., isometric, oblique, one- and two-point perspective</li> <li>• identify multiview drawings, their common views (e.g., front, top, side) and discriminate between first angle projections and third angle projections</li> <li>• produce at least one of the following within the context of assigned projects:               <ul style="list-style-type: none"> <li>– isometric drawing</li> <li>– oblique drawing (either Cavalier or Cabinet)</li> <li>– perspective drawing (either one-point or two-point)</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>– at least one drawing in three-dimensions appropriate for illustrating assembled surface developments (e.g., packaging, clothing, heating/ventilation ducting)</li> </ul> </li> <li>• produce at least one of the following within the context of assigned projects:               <ul style="list-style-type: none"> <li>– one multiview drawing (e.g., front view, side view, top view)</li> <li>– one surface development (flat pattern) (e.g., for a package, heating/ventilation duct, garment)</li> </ul> </li> <li>• use general drafting conventions (e.g., title blocks) where appropriate.</li> </ul> | <p>In this module, students should engage in a variety of activities that will teach basic drafting skills and techniques. These could be extensions of designs developed in previously completed modules such as 2-D Design Fundamentals or 3-D Design Fundamentals. Teachers will need to determine the number of drawings of each type necessary for students to develop skills and understanding in this area.</p> <p>Students may demonstrate more than one drawing style within the same assignment. For example, a student may produce a multiview drawing (e.g., front, top, side views) of a toy he or she designed and pictorial drawing (e.g., isometric) of the toy on the same drawing sheet.</p> <p>“Drafting” may be applied in a number of contexts beyond the drafting table or terminal. One of these is flat pattern design within the fashion industry. This module exemplifies the linkage and transferability between traditional disciplines.</p> <p>Students may use traditional drafting technology, CAD or other technology specified by the teacher during this module.</p> |

**MODULE DES1060: DRAFTING/DESIGN FUNDAMENTALS** (continued)

| Concept                                    | Specific Learner Expectations   | Notes  |
|--|---|--|
| Applied Problem Solving                    | <p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• use drafting techniques learned in this module to illustrate particular aspects of designed solutions to simple design problems; e.g., a hinge system on a box lid, a seam where two surfaces are joined, a pin to hold a wheel on an axle</li> <li>• where appropriate, use drafting techniques to illustrate how parts of a design go together.</li> </ul> | <p>Students should recognize drafting skills and techniques as tools they can use in many areas of design. Teachers may wish to brainstorm possible uses of these techniques with their students.</p> <p>Applied problem solving here relates to the student's ability to select appropriate techniques from those learned in this module to produce required illustrations.</p> |
| Presentation, Design Journal and Portfolio | <ul style="list-style-type: none"> <li>• see the Specific Learner Expectations for Sketch, Draw &amp; Model and CAD Fundamentals.</li> </ul>  | <p>See notes for 2-D Design Fundamentals.</p>  |