

# MODULE CURRICULUM AND ASSESSMENT STANDARDS:

## SECTION F: ADVANCED LEVEL

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

Advanced level modules demand a higher level of expertise and help prepare students for entry into the workplace or a related post-secondary program.

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## MODULE DES3010: 2-D DESIGN STUDIO 1

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students apply theories, skills and techniques of organization of the visual image onto the two-dimensional format, to resolve complex design problems. Emphasis is placed on exploring form, composition and aesthetics of communication design solutions.

**Module Parameters:** Sketching, drawing and graphic layout tools and equipment and/or a computer with graphic design software.

**Note:** It is recommended that students have access to instruction from an individual with formal, specialized training in graphic design and production.

**Supporting Module:** DES2010 2-D Design Applications

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>produce advanced level designed solutions for two-dimensional design problems</li></ul>	<i>Assessment of student achievement should be based on:</i> <ul style="list-style-type: none"><li>resolution of a teacher-approved, student-specified advanced level two-dimensional design brief.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Form, Composition and Aesthetics (DESPRJ-3A)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	50
	<ul style="list-style-type: none"><li>apply elements and principles of design to two-dimensional design compositions</li></ul>	<ul style="list-style-type: none"><li>selection and effective use of elements and principles of design in project work.</li></ul> <p><i>Assessment Tool</i> <i>Authorized resources for explanation and examples of elements and principles of design</i> <i>Project Assessment: Form, Composition and Aesthetics (DESPRJ-3A)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>

**MODULE DES3010: 2-D DESIGN STUDIO 1** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• make rational judgments for achieving aesthetic quality in two-dimensional design solutions</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>• justification and judgements made during designing with respect to aesthetics, brought forth within the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Form, Composition, and Aesthetics (Advanced) (DESPRE–3A)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the degree of resolution of the project brief, and the student’s discourse regarding:               <ul style="list-style-type: none"> <li>– the form, composition and aesthetic quality of the product</li> <li>– the judgements made during the designing process,</li> <li>– why these were made</li> <li>– the effect they had in shaping the final result.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Form, Composition, and Aesthetics (Advanced) (DESPRE–3A)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 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>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>10</p> <p>20</p> <p>Integrated throughout</p>

**MODULE DES3010: 2-D DESIGN STUDIO 1** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate increased proficiency with skills and techniques learned at the introductory and intermediate levels</li> <li>• identify and use additional techniques, tools, materials and other resources as required in projects undertaken</li> <li>• demonstrate organization and management of personal learning without external direction, in both individual and cooperative learning situations</li> <li>• demonstrate increased group work skills.</li> </ul>	
Elements and Principles of Design	<ul style="list-style-type: none"> <li>• identify the elements and principles of design used in the solution of each design problem and explain how their use has contributed to the aesthetics and function of the solution</li> <li>• rationalize decisions made during designing and indicate how these decisions affected the aesthetic quality of the solution.</li> </ul>	<p>Students must be able to identify the elements and principles of design and use them effectively in resolving design tasks. It is important that they recognize how they can use the elements and principles to their best advantage.</p> <p>Decision making is central to successful design. Students at this level must make decisions and learn from the results.</p>
Applied Problem Solving	<ul style="list-style-type: none"> <li>• solve one or more two-dimensional design problems; e.g., displays/exhibits, packaging graphics, textiles, advertising, murals, signage, posters, calendars, billboards, maps and charts</li> <li>• identify each problem, write a design brief and structure a plan for resolution</li> <li>• select and use appropriate tools and materials as outlined in the design brief.</li> </ul>	<p>Some students may take on a project of greater magnitude and therefore would not be required to complete more than one project in this module. Some students may also engage in large-scale projects that require more than one module to complete.</p>

**MODULE DES3010: 2-D DESIGN STUDIO 1** (continued)

Concept	Specific Learner Expectations	Notes
<p>Applied Problem Solving (continued)</p>	<p><i>The student should:</i></p>	<p>Advanced level students must be able to write out project briefs for themselves and others. They must be able to organize their work, select appropriate tools, equipment, materials, etc., to make the project successful. It is important that they be given responsibility for their learning and that the teacher is there to support them and provide guidance where necessary.</p>
<p>Presentation, Design Journal and Portfolio</p>	<ul style="list-style-type: none"> <li>• participate in interim and final critiques meeting or exceeding the expectations of intermediate level modules</li> <li>• lead at least one interim or final critique at the advanced level</li> <li>• maintain journal/sketchbook as described in The Design Process</li> <li>• maintain a portfolio of ongoing design activity including all projected related material in two-dimensional design (see 2-D Design Applications), the design journal, and appropriate supplementary material</li> <li>• independently update portfolio, assessing portfolio for extraneous material (see 2-D Design Applications).</li> </ul>	<p>Advanced students should be able to lead a critique session. They should be given opportunity to do so at some point in their advanced level program.</p>

**MODULE DES3020: 2-D DESIGN STUDIO 2****Level:** Advanced**Theme:** Design Skills, Processes and Applications**Prerequisite:** None**Module Description:** Students investigate the impact, importance and influence of two-dimensional design within a cultural context and the social responsibility of the designer, and apply this information when resolving complex communication design problems.**Module Parameters:** Sketching, drawing and graphic layout tools and equipment and/or a computer with graphic design software.**Note:** It is recommended that students have access to instruction from an individual with formal, specialized training in graphic design and production.**Supporting Module:** DES3010 2-D Design Studio 1**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 advanced level designed solutions for two-dimensional communication design problems</li> <li>identify examples of effective and ineffective two-dimensional designs</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>resolution of a teacher-approved, student-specified advanced level two-dimensional design brief.</li> </ul> <p><i>Assessment Tool</i> <i>Project Assessment: Communication and Human Factors (DESPRJ-3B)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	50
	<ul style="list-style-type: none"> <li>constructive analysis and criticism of two-dimensional design work of varying quality gathered from real world context.</li> </ul> <p><i>Assessment Tool</i> <i>Project Assessment: Communication and Human Factors (DESPRJ-3B)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	10

**MODULE DES3020: 2-D DESIGN STUDIO 2** (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 human factors commonly affected by two-dimensional design solutions and accommodate these within designed solutions</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>• written or verbal identification of human factors commonly addressed in two-dimensional design, and the degree to which these are accommodated in the resolved project brief.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Communication and Human Factors (DESPRJ-3B)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the degree of resolution of the project brief, and the student's discourse regarding: <ul style="list-style-type: none"> <li>– the effectiveness of the designed solution in communicating its message</li> <li>– the degree to which the designed solution addresses identified human factors.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Communication and Human Factors (Advanced), (DESPRE-3B)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 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>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>20</p> <p>20</p> <p>Integrated throughout</p>

**MODULE DES3020: 2-D DESIGN STUDIO 2** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• identify and select examples of “designed” communication and make judgements as to their effectiveness</li> <li>• select at least three examples of commercially generated two-dimensional design and describe the impact of the examples on himself or herself; e.g., social/psychological impact, impact on himself or herself as a human being, how he or she feels about the design</li> <li>• describe at least three ways human factors (e.g., physical, mental, ethical, cultural) can affect two-dimensional design; e.g., use of colour, cultural symbolism, response to size, shape, prominence.</li> </ul>	<p>Advanced level students must be able to determine levels of quality. They must apply this knowledge in their own design work.</p> <p>Design is done for a purpose—to meet a client’s need. It is important that students realize that not all designed ideas work. It is also crucial that students recognize the relationship of design to the human condition and the impact design can have on them and others, socially, psychologically and emotionally as well as physically.</p> <p>Designed items (e.g., communication systems, products) have a great impact on people. Students must recognize this, both as designers and as consumers of design. This study relates very closely to notions of consumerism and the place of design in a “consumer” society.</p>
Applied Problem Solving	<ul style="list-style-type: none"> <li>• solve at least two different two-dimensional design problems involving communication; e.g., signs, advertising layouts, maps, packaging graphics, fabric motifs, flow diagrams, assembly drawings, cutting layouts, organizational charts</li> <li>• identify each problem, write a project brief and structure a plan for resolution</li> <li>• select and use appropriate tools and materials as outlined in each project brief.</li> </ul>	<p>Students may engage in new projects or continue projects begun in 2-D Design Studio 1. See this module for additional notes.</p>

**MODULE DES3020: 2-D DESIGN STUDIO 2** (continued)

Concept	Specific Learner Expectations	Notes
Presentation, Design Journal and Portfolio	<i>The student should:</i> <ul style="list-style-type: none"><li>• see Specific Learner Expectations for 2-D Design Studio 1.</li></ul>	See notes from 2-D Design Studio 1.

## MODULE DES3030: 2-D DESIGN STUDIO 3

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students explore the production processes of two-dimensional design and the role of the designer as an organizer of appropriate materials, processes and systems. This understanding is applied in the resolution of complex two-dimensional design problems.

**Module Parameters:** Sketching, drawing and graphic layout tools and equipment and/or a computer with graphic design software.

**Note:** It is recommended that students have access to instruction from an individual with formal, specialized training in graphic design and production.

**Supporting Module:** DES3010 2-D Design Studio 1

### 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 advanced level designed solutions for two-dimensional design problems involving materials and production processes</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>resolution of a teacher-approved, student-specified advanced level two-dimensional design brief.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Materials and Production Processes (DESPRJ-3C)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	40
<ul style="list-style-type: none"><li>select materials based on their properties and justify their use in the context of two-dimensional design; e.g., what works in a given situation to achieve a desired affect</li></ul>	<ul style="list-style-type: none"><li>justification of selection of materials used in resolving design brief, brought forth within the presentation/critique.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Materials and Production Processes (DESPRJ-3C)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	10

**MODULE DES3030: 2-D DESIGN STUDIO 3** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• design and/or select and use a process to reproduce a two-dimensional product in quantity</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>• reproduction of a two-dimensional product in quantity (i.e., at least five copies) using a production process.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Materials and Production Processes (DESPRJ-3C)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the quality of the reproduced product, and the student’s discourse regarding:               <ul style="list-style-type: none"> <li>– the justification for the selection and use of materials for the designed solution</li> <li>– the strengths and weaknesses of the design and/or selected process used to reproduce the product.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Materials and Production Processes (Advanced) (DESPRE-3C)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p> <ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal exploration during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>30</p> <p>20</p> <p>Integrated throughout</p>

**MODULE DES3030: 2-D DESIGN STUDIO 3** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• select, organize and manage a production team</li> <li>• prepare a written submission describing the production process used, indicating key elements of that process and the management task (optionally supported by illustrations, photographs, etc.).</li> </ul>	<p>Some students will be natural organizers and managers while others will need to learn these skills. Taking on different collaborative roles will help students recognize their ability and the areas requiring development.</p>
Applied Problem Solving	<ul style="list-style-type: none"> <li>• solve a design problem involving the production of a designed product in quantity</li> <li>• identify the problem, write a project brief and prepare a plan for resolution</li> <li>• select and use appropriate tools and materials as outlined in the project brief</li> <li>• rationalize the selection of materials used in the design project based on their physical properties.</li> </ul>	<p>Some students may want to produce several simple products; others may want to produce a single, more complex product.</p> <p>Advanced level students must be able to select and use appropriate materials and equipment and rationalize their selection.</p>
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1</li> <li>• maintain a portfolio of ongoing design activity, which might in this module include samples of items reproduced as part of the module activity (e.g., actual items, photographs or video of item in production and final product, written submission detailing production activity) and appropriate supplementary material.</li> </ul>	<p>See notes from other 2-D Design Studio modules.</p>



## MODULE DES3040: 3-D DESIGN STUDIO 1

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students deal with such aspects as shaping, massing, proportion, scale, contrast, colour, texture and finish within the context of complex three-dimensional design projects.

**Module Parameters:** Sketching, drawing and modelling tools and equipment and access to a computer. Specialized facilities or equipment depend on the approach taken to 3-D model development and mass production.

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

**Supporting Module:** DES2020 3-D Design Applications

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"><li>produce advanced level designed solutions for three-dimensional design problems</li></ul>	<i>Assessment of student achievement should be based on:</i> <ul style="list-style-type: none"><li>resolution of a teacher-approved, student-specified advanced level three-dimensional design brief.</li></ul> <i>Assessment Tool</i> <i>Project Assessment: Form, Composition and Aesthetics (DESPRJ-3A)</i> <i>Standard</i> <i>Performance rating of 2 for each criteria</i>	30
	<ul style="list-style-type: none"><li>use elements, principles, and considerations common to three-dimensional compositions</li></ul>	<ul style="list-style-type: none"><li>selection and effective use of elements and principles of design in project work.</li></ul> <i>Assessment Tool</i> <i>Authorized resources for explanation and examples of elements and principle of design</i> <i>Project Assessment: Form, Composition and Aesthetics (DESPRJ-3A)</i> <i>Standard</i> <i>Performance rating of 2 for each criteria</i>

**MODULE DES3040: 3-D DESIGN STUDIO 1** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• use various materials, and the required processes to shape and join such materials, and to create desired forms</li> <li>• demonstrate familiarity with symbolic and cultural connotations of design, and make aesthetic judgments about design solutions generated</li> <li>• select, organize and present design projects</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• selection and effective use of materials and associated processes in project work.</li> </ul> <p><i>Assessment Tool</i>  <i>Authorized resources for examples of materials, and processes used to shape and join them</i>  <i>Project Assessment: Form, Composition and Esthetics (DESPRJ–3A)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	10
	<ul style="list-style-type: none"> <li>• justification of judgements made during designing with respect to aesthetics, symbolism and culture, brought forth within the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports Form, Composition, and Aesthetics (Advanced) (DESPRE–3A)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	20
	<ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the degree of resolution of the design brief, and the student’s discourse regarding: <ul style="list-style-type: none"> <li>– the form, composition and aesthetic quality of the product</li> <li>– the judgements made during the designing process</li> <li>– why these were made</li> <li>– the effect they had in shaping the final result.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports Form, Composition, and Aesthetics (Advanced) (DESPRE–3A)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p>	20

**MODULE DES3040: 3-D DESIGN STUDIO 1** (continued)

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 competencies.</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal exploration during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
<p>Skills Development</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>describe through project work the relationship between the technical/analytical requirements of a project (function) and the more subjective/intuitive judgements that effect project aesthetics (form)</li> <li>explain how this understanding has shaped both the designing process and the design solution.</li> </ul>	<p>Designs must be both functional and aesthetically pleasing. Understanding this interrelationship will help students design solutions that work and are at the same time elegant. It will also help them select processes and materials that are best suited to their designed solution.</p>
<p>Elements and Principles</p>	<ul style="list-style-type: none"> <li>identify the considerations, decisions, elements and principles of the designing process that contributed to the design solution</li> <li>explain these through verbal and/or written presentation.</li> </ul>	<p>See notes from 2-D Design Studio modules.</p>

**MODULE DES3040: 3-D DESIGN STUDIO 1** (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>• analyze one or more three-dimensional design projects; e.g., displays, exhibits, dramatic sets, products, packaging, furniture, lighting, CD players</li> <li>• identify each problem through background research and general familiarization, write a project brief and prepare a plan to complete the project, which would include methodology such as objectives of the project, steps required to achieve the objectives, the proposed deliverables (e.g., drawings and model[s]) and a time schedule (e.g., a simple bar chart)</li> <li>• select and use appropriate materials and tools to explore concepts and to achieve the objectives outlined in the project brief.</li> </ul>	<p>In early stages of a project, the designing process might include sketching in two-dimensions and sketch-modelling in three dimensions to explore possibilities of form and composition in the context of the project brief. Later in the project, CAD drawings could be used to define the design and facilitate construction. Three-dimensional physical models (or in some cases, possibly CAD models) might be used to visualize the final design solution in order to deal more fully with detailing and overall aesthetics.</p> <p>Rendered drawings could be used to explore colour options and combinations. However, design problem solving is rarely a linear process and iterations will often continue into the final stages of the project.</p> <p>See notes from 2-D Design Studio modules.</p>
<p>Presentation, Design Journal and Portfolio</p>	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1</li> <li>• maintain a portfolio of ongoing design activity, which in this module would include samples of items produced and/or photographs or video of items produced.</li> </ul>	<p>See notes from 2-D Design Studio modules.</p>

## MODULE DES3050: 3-D DESIGN STUDIO 2

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students are introduced to human factors, principles and considerations; e.g., ergonomics, semantics and semiotics.

**Module Parameters:** Specialized facilities or equipment may be required depending on the approach taken to 3-D model development and mass production. Sketching, drawing and modelling tools and equipment and access to a computer.

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

**Supporting Module:** DES3040 3-D Design Studio 1

### 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>apply human factors, principles and considerations; i.e., physical, auditory, visual when designing, which results in a three-dimensional product for human use</li> <li>explain the relationships among the application of human factors, principles and considerations and the articulation (system, sequence) of a product design</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>resolution of a teacher- and/or student-specified advanced level three-dimensional project brief.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Communication and Human Factors (DESPRJ-3B)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	60
	<ul style="list-style-type: none"> <li>justification of judgements made during designing with respect to human factors and the designed solution, brought forth within the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Communication and Human Factors (DESPRJ-3B)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	20



**MODULE DES3050: 3-D DESIGN STUDIO 2** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• select at least three examples of commercially produced products and consider, analyze and describe the human factors aspects of the designs. Identify the elements that are judged to be appropriately resolved in the designs, and those that could be improved. Make suggestions for how improvements could be affected</li>   <li>• provide at least three examples of how human factors (e.g., physical, mental, emotional, psychological, ethical cultural) can affect three-dimensional design; e.g., size of products in relation to human anatomy, toys or games of different materials or with different levels of complexity depending on the intended age group, the shape or orientation of a building and its relationship to cultural conventions and expectations.</li> </ul>	<p>Design is done for a purpose. It is important that students realize that products are designed to meet a client's needs. Well-designed products will have a greater chance of success than poorly designed products. Students must recognize this, both as designers and as consumers of design.</p> <p>The impact of design on the social, psychological, emotional and physical well-being of people must be recognized by students and taken into account in their design work.</p>
Applied Problem Solving	<ul style="list-style-type: none"> <li>• analyze one or more three-dimensional design projects; e.g., furniture, hand-tools, interfaces for electronic equipment (e.g., for a photocopier, a radio or personal stereo), control design (e.g., for a shower), design for users with special needs (e.g., seniors, wheelchair users, extraordinary work environment), signage, eye glasses, clothes, shoes, toys, board games, sports equipment, architectural elements, such as entrances, public/private spaces</li>   <li>• identify the human factors considerations to be addressed, write a design brief and prepare a plan to complete the project, which would include methodology such as objectives of the project, steps required to achieve the objectives (which might include user testing of ideas with a survey group), the proposed deliverables (e.g., drawings and model[s]) and a time schedule (e.g., a bar chart)</li> </ul>	<p>See notes from 2-D Design Studio modules.</p>

**MODULE DES3050: 3-D DESIGN STUDIO 2** (continued)

Concept	Specific Learner Expectations	Notes
Applied Problem Solving (continued)	<i>The student should:</i> <ul style="list-style-type: none"><li>• select and use appropriate materials and tools to explore concepts and to achieve the objectives outlined in the design brief.</li></ul>	
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"><li>• see Specific Learner Expectations for 2-D Design Studio 1 and 3-D Design Studio 1.</li></ul>	Advanced students should be able to lead a critique session. They should be given opportunity to do so at some point in their advanced level program.

## MODULE DES3060: 3-D DESIGN STUDIO 3

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students expand their knowledge of materials, technologies and production/processes employed to shape and join materials and assemble products. Students will become familiar with principles of manufacturing, and materials, technologies and processes appropriate to manufacturing a product in various production quantities.

**Module Parameters:** Sketching, drawing and modelling tools and equipment and access to a computer. Specialized facilities or equipment depend on the approach taken to 3-D model development and mass production.

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

**Supporting Module:** DES3040 3-D Design Studio 1

### 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>use materials, technologies and production processes relevant to a particular area of three-dimensional design to produce a product</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>resolution of a teacher-approved, student-specified advanced level three-dimensional design brief.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Materials and Production Processes (DESPRJ-3C)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	40
<ul style="list-style-type: none"><li>apply appropriate materials and processes to form, shape, join, fasten, assemble and/or construct with various materials based on their properties on advanced level three-dimensional project</li></ul>	<ul style="list-style-type: none"><li>selection and effective use of materials and associated processes in project work.</li></ul> <p><i>Assessment Tool</i> <i>Authorized resources for examples of materials, and processes used to shape and join them</i> <i>Project Assessment: Materials and Production Processes (DESPRJ-3C)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	20

**MODULE DES3060: 3-D DESIGN STUDIO 3** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• describe the relationship among materials, production processes and intended production quantities, and the manner in which a product is designed</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>• justification of the selection/recommendation of materials and production processes, and the proposed quantities to be reproduced, brought forth within the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Materials and Production Processes (DESPRJ-3C)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the quality of the product, and the student's discourse regarding: <ul style="list-style-type: none"> <li>– the strengths and weaknesses of the designed solution</li> <li>– the justification for the selection and use of materials for the designed solution, recommendation for production process(es) and quantities to be reproduced.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports Materials and Production Processes (Advanced) (DESPRE-3C)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p> <ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal exploration during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>20</p> <p>20</p> <p>Integrated throughout</p>

**MODULE DES3060: 3-D DESIGN STUDIO 3** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• select an appropriate production process for the design proposal. Study and describe the stages in the production system, the roles of the various members of the production team that contribute to the process; e.g., economists, engineers, production managers, marketing specialists</li> <li>• describe the organizational and management aspects that are required to put a product into production.</li> </ul>	
Applied Problem Solving	<ul style="list-style-type: none"> <li>• complete a project that requires the design of a product for quantity production (“quantity” could range from 5 products to &gt;10,000 products depending on the nature of the projects). The materials and processes selected will be dependent on the intended quantities to be (theoretically) produced; e.g., furniture, kitchen appliances, electronic products, jewellery, clothing, architectural elements, such as moldings, fittings and fixtures, toys, sports equipment</li> <li>• identify the materials and production considerations to be addressed, write a design brief and prepare a plan to complete the project, which would include methodology such as objectives of the project, intended production quantities, steps required to achieve the objectives (which might include consultations with manufacturers), the proposed deliverables (e.g., drawings and model[s]) and a time schedule (e.g., a bar chart)</li> <li>• select and use appropriate materials and tools to explore concepts and to achieve the objectives outlined in the project brief</li> </ul>	<p>The processes used to produce products are many and varied. It is important that students understand that product manufacturing is a system of occurrences that are “designed.” By studying various manufacturing processes, students will see how a product is manufactured, the steps within the system and the impact on the materials used in the process. They must also consider the environmental impact of the process.</p> <p>It may be possible for students to test various materials as part of their selection process.</p> <p>It may be possible for students to visit a manufacturing site or to simulate a manufacturing situation.</p>

**MODULE DES3060: 3-D DESIGN STUDIO 3** (continued)

Concept	Specific Learner Expectations	Notes
Applied Problem Solving (continued)	<i>The student should:</i> <ul style="list-style-type: none"><li>• rationalize the selection of materials used in the design based on their physical properties, the intended quantities to be produced, the relationship to the project requirements and the production processes specified. Describe alternative materials and processes that might be appropriate for the production of the design in smaller and/or larger quantities.</li></ul>	
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"><li>• see Specific Learner Expectations for 2-D Design Studio 1 and 2-D Design 3.</li></ul>	

## MODULE DES3070: LIVING ENVIRONMENT STUDIO 1

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students learn to develop appropriate architectural, environmental or interior design solutions for specific human needs. Students also learn to use design methodology and teamwork in the development of such solutions.

**Module Parameters:** Sketching, drawing and modelling tools and equipment and access to 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 architectural, interior and/or environmental 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"><li>produce creative designed solutions based in architectural, environmental and/or interior design, that address human and/or environmental needs</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>resolution of a teacher-approved, student-specified advanced level Living Environment design brief.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Living Environment Studio 1 (DES3070-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	50
<ul style="list-style-type: none"><li>use elements, principles and processes of design to deal with identified human and/or environmental needs within design solutions</li></ul>	<ul style="list-style-type: none"><li>selection and effective use of elements and principles of design in project work.</li></ul> <p><i>Assessment Tool</i> <i>Authorized resources for explanation and examples of elements and principles of design</i> <i>Project Assessment: Living Environment Studio 1 (DES3070-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	10

**MODULE DES3070: LIVING ENVIRONMENT STUDIO 1** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• describe how human and environmental requirements affect design</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>• presentation of ideas on the relationship of human and environmental needs and design through writing and/or through discourse during the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Living Environment Studio (Advanced) (DESPRE-3D)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the degree of resolution of the project brief, and the student's discourse regarding:               <ul style="list-style-type: none"> <li>– how human and environmental needs have been addressed through the designed solution</li> <li>– the judgements made during the designing process,</li> <li>– why these were made</li> <li>– the effect they had in shaping the final result.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Living Environment Studio (Advanced) (DESPRE-3D)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 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>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>20</p> <p>20</p> <p>Integrated throughout</p>

**MODULE DES3070: LIVING ENVIRONMENT STUDIO 1** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe how the environment has a direct impact in design; e.g., extreme climates, delicate environments, toxic environments</li> <li>• present at least three examples of the impact of a living environment on human beings; e.g., the impact of different parts of the school on what people are able to do, different behavioural responses to the atmosphere of a fast food restaurant and a formal dining restaurant, the effect of different types of furniture on a person's activity level</li> <li>• provide at least three examples of how human factors (e.g., physical, mental, ethical, culture) can affect architectural, environmental or interior design (e.g., size of doorways, temperature controls, colour selections</li> <li>• describe the responsibility design has toward the human and natural environment.</li> </ul>	<p>Many designs meet specific environmental needs. For example, the needs of people (e.g., food, shelter, clothing, association) are fairly constant but how they are met in a house, shopping mall, park, desert, space or under the ocean are quite different. Students must recognize these differences and design for them.</p>
Elements and Principles	<ul style="list-style-type: none"> <li>• identify and use the elements and principles of design, and processes associated with design, as they apply to projects in interior, architectural and/or environmental design.</li> </ul>	

**MODULE DES3070: LIVING ENVIRONMENT STUDIO 1 (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>• present the results of an evaluation and user survey of human environmental needs with respect to specific projects in interior, architectural and/or environmental design</li> <li>• analyze at least two different design problems; e.g., an entrance to a building such as a museum, interpretive centre, or drop-in centre for seniors, a playground within a public park</li> <li>• identify each problem, write a project brief and structure a plan for resolution</li> <li>• select and use appropriate tools and materials as outlined in the project brief.</li> </ul>	<p>The interrelated aspect of the Living Environment modules and their close relationship to other design areas should be stressed. Students should be aware that at this advanced level idea development and presentation, collaborative work and directed individual study are crucial to the design process. These are also good modules for related field trips, and the development of contacts with professionals, manufacturers and suppliers.</p> <p>Form, materials and production processes may be considered at this stage though not necessarily resolved.</p> <p>See notes from 2-D Design Studio and 3-D Design Studio modules.</p>
<p>Presentation, Design Journal and Portfolio</p>	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1</li> </ul>	<p>See notes from 2-D Design Studio and 3-D Design Studio modules.</p>

## MODULE DES3080: LIVING ENVIRONMENT STUDIO 2

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students learn to consider form and space when developing specific architectural, environmental or interior design solutions specific to human and/or environmental needs. They assess solutions on the basis of functional and aesthetic considerations and appropriateness within the human environment. Materials and production processes may be considered at this stage though not necessarily resolved. When designing at the micro level, students consider the ergonomic aspects of design.

**Module Parameters:** Specialized facilities or equipment depend on the approach taken to the module. Sketching, drawing and modelling tools and equipment and access to a computer.

**Note:** It is recommended that students have access to instruction from an individual with formal, specialized training in architectural, interior and/or environmental design.

**Supporting Module:** DES3070 Living Environment Studio 1

### 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 advanced level designed solutions for problems in one or more living environment themes: architectural design, environmental design, interior design</li><li>apply elements and principles of design; e.g., space, form and ergonomics within architectural, environmental, and/or interior design</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>resolution of a teacher- and/or student-specified advanced level Living Environment project brief.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Living Environment Studio 2 (DES3080-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"><li>selection and effective use of elements and principles of design in project work.</li></ul> <p><i>Assessment Tool</i> <i>Authorized resources for explanation and examples of elements and principle of design</i> <i>Project Assessment: Living Environment Studio 2 (DES3080-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	<p>50</p> <p>10</p>

**MODULE DES3080: LIVING ENVIRONMENT STUDIO 2** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• make rational judgments with respect to aesthetic quality in architectural, environmental or interior design</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>• justification of judgements made during designing with respect to aesthetic quality of the designed solution, brought forth within the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Living Environment Studio 2 (DES3080–1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the degree of resolution of the design brief, and the student’s discourse regarding: <ul style="list-style-type: none"> <li>– how human and environmental needs have been addressed through the designed solution</li> <li>– the judgements made during the designing process,</li> <li>– why these were made</li> <li>– the effect they had in shaping the final result.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Living Environment Studio (Advanced) (DESPRE–3D)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 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>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>20</p> <p>20</p> <p>Integrated throughout</p>

**MODULE DES3080: LIVING ENVIRONMENT STUDIO 2** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe how form and space are used in the context of architectural, environmental and interior design</li> <li>• research and compare the living and working spaces of two communities that differ in some way; e.g., climatically, socioeconomically, culturally</li> <li>• identify one example drawn from architectural, environmental or interior design (e.g., a frame construction house from Canada and a house from Japan) and compare them</li> <li>• describe the responsibility design has toward the human and natural environment.</li> </ul>	<p>Design cuts across our living environments structuring the macro living spaces (e.g., buildings, parks) and the micro living spaces (e.g., rooms, offices). We look for different things from design in each case. In macro space projects, the overall form, aesthetics, structural integrity and function are key components. In micro space projects, we must also consider ergonomic factors.</p>
Elements and Principles of Design	<ul style="list-style-type: none"> <li>• identify the elements and principles of design used in the solution of each design problem and explain how their use has contributed to the aesthetics and function of the solution.</li> </ul>	
Applied Problem Solving	<ul style="list-style-type: none"> <li>• identify and resolve a design problem in the area(s) of architectural, environmental and/or interior design; e.g., a personal living space, a living space for an extreme environment, a commercial space, a park, a restaurant, a prefabricated living space with components that can be assembled on-location, a survival shelter</li> <li>• identify each problem, write a project brief and structure a plan for resolution</li> <li>• select and use appropriate tools and materials as outlined in the project brief</li> <li>• rationalize decisions made during designing and indicate how these decisions affected the aesthetic quality of the solution.</li> </ul>	<p>See notes from 2-D Design Studio and 3-D Design Studio modules.</p>
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1.</li> </ul>	<p>See notes from 2-D Design Studio and 3-D Design Studio modules.</p>



## MODULE DES3090: LIVING ENVIRONMENT STUDIO 3

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students develop design solutions specific to architectural, environmental or interior design and learn about using and/or specifying appropriate materials and production processes.

**Module Parameters:** Sketching, drawing and modelling tools and equipment and access to 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 architectural, interior and/or environmental design.

**Supporting Module:** DES3070 Living Environment Studio 1

### 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>use appropriate materials and production processes to resolve set design problems</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>selection and effective use of materials and associated processes in the resolution of a teacher-approved, student-specified advanced level Living Environment design brief.</li></ul> <p><i>Assessment Tool</i> <i>Authorized resources for examples of materials, and processes used to shape and join them</i> <i>Project Assessment: Living Environment Studio 3 (DES3090–1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	40

**MODULE DES3090: LIVING ENVIRONMENT STUDIO 3** (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 materials and products used in architectural, environmental, and/or interior design, and give reasons for their use based on their properties</li> <li>• identify and/or specify production processes, and/or methods of manufacturing products common to architectural, environmental, and/or interior design</li> <li>• select, organize and present design projects</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• demonstration of understanding of the relationship of materials and products and their use through writing and/or through discourse during the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Authorized resources for examples of materials</i>  <i>Presentations/Reports: Living Environment Studio 3 (DES3090–2)</i></p> <ul style="list-style-type: none"> <li>• justification of the selection/specification of materials and production processes for product manufacturing through writing and/or through discourse during the presentation/critique.</li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Living Environment Studio 3 (DES3090–2)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the degree of resolution of the design brief, and the student’s discourse regarding: <ul style="list-style-type: none"> <li>– his or her understanding of the relationship between materials and products and their use</li> <li>– his or her justification for the selection/specification of materials and production processes for product manufacturing.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Living Environment Studio 3 (DES3090–2)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p>	<p>20</p> <p>20</p> <p>20</p>

**MODULE DES3090: LIVING ENVIRONMENT STUDIO 3 (continued)**

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 competencies.</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal exploration during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
<p>Skills Development</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>identify materials, production processes and techniques commonly used in construction, fabrication and the finishing of living and working spaces</li> <li>describe the nature of different materials (e.g., woods, metals) and how their use has evolved in design (e.g., structural design, furniture design)</li> <li>describe how traditional materials (e.g., woods) have been replaced by other materials (e.g., plastics) in the living environment</li> <li>identify and rationalize the materials and production processes used a design solution.</li> </ul>	<p>Designers use a variety of materials to create structures, fixtures, furnishing, etc. As new materials become available, they are evaluated for their properties, then used where and when appropriate. Often the same material is used for a variety of purposes with new uses evolving as design evolves. Students should recognize and examine how various materials are used and have been used in design. This knowledge will give them a basis for selecting appropriate materials for their own projects.</p>

**MODULE DES3090: LIVING ENVIRONMENT STUDIO 3** (continued)

Concept	Specific Learner Expectations	Notes
Applied Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• demonstrate materials and production processes specific to a project</li> <li>• identify at least two different material and production scenarios specific to the same design project</li> <li>• identify materials and production processes that contribute to the structure and to the durability of a design</li> <li>• show resolution of construction concerns implicit in the requirements of form, space and ergonomics</li> <li>• identify each problem, write a project brief and structure a plan for resolution</li> <li>• select and use appropriate tools and materials as outlined in the project brief.</li> </ul>	
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1 and 3-D Design Studio 3.</li> </ul>	See notes from 2-D Design Studio and 3-D Design Studio modules.

**MODULE DES3100: CAD MODELLING STUDIO (COMPUTER-AIDED DESIGN)****Level:** Advanced**Theme:** Drafting for Design and Technical Drawing Skills**Prerequisite:** None**Module Description:** Students solve design problems, using advanced computer-aided design (CAD) methods, advanced commands, three-dimensional modelling techniques, rendering, shading and animation techniques.**Module Parameters:** Access to a computer with a CAD software package capable of generating 3-D images, a compatible animation package and 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 CAD.**Supporting Module:** DES2030 CAD Applications**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>use advanced CAD commands and techniques to design working prototypes of solutions to advanced level design problems</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>production of still and/or animated images based on advanced level design brief and using teacher-specified software.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: CAD Modelling Studio (DES3100-1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	80



**MODULE DES3100: CAD MODELLING STUDIO (COMPUTER-AIDED DESIGN (continued))**

Concept	Specific Learner Expectations	Notes
Skills Development (continued)	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• create a three-dimensional model image and/or working drawings on a computer in response to a problem specified in a project brief, and print work generated.</li> </ul>	Students should be made aware that time is an important factor in using CAD and that they should become faster and more efficient with each project.
Applied Problem Solving	<ul style="list-style-type: none"> <li>• apply the personal computer and specified CAD software to resolve problems as outlined in project briefs.</li> </ul>	Students should have had previous experience in CAD and feel confident in using the chosen software independently in this module. They should share CAD techniques, tips and hints to their advantage in the process of solving problems. By allowing sharing to take place, teachers and students will learn and improve their CAD techniques.
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1</li> <li>• maintain and update a portfolio as described in 2-D Design Studio 1. Additions from this module would include all project related material (e.g., sketches, notes, a computer disk containing images produced through CAD and three-dimensional modelling software, hard copies of these images), the design journal, and appropriate supplementary material.</li> </ul>	As with the other CAD modules, students might produce portfolio of their work on a computer disk and support this with selected still images (printed or plotted) and/or a video tape of selected images.



## MODULE DES3110: DRAFTING/DESIGN STUDIO 1

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students concentrate on various drawing and drafting types to illustrate design concepts and solutions, including freehand drawings, illustrative views, isometric drawings, perspective drawings, axiometric drawings, surface developments (flat pattern). This is a skill-building module with the emphasis on line drawing.

**Note:** Completed drawings from this module may be used as preparatory material for subsequent drafting/design studio or technical drawing studio modules.

**Module Parameters:** 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. Specialized equipment or facilities 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, drafting and CAD.

**Supporting Module:** DES2040 Drafting/Design Applications

### 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>use freehand and mechanical and/or computer aided drafting techniques to produce solutions for complex projects in areas such as architecture, fashion, product, furniture and/or other design applications</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>production of “line” pictorial drawings within the context of a teacher- and/or student-specified advanced level assignment.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Drafting/Design Studio 1 (DES3110–1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	50

**MODULE DES3110: DRAFTING/DESIGN STUDIO 1** (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>• apply various drawing construction principles to produce pictorial drawings; e.g., isometric, perspective and axiometric</li> <li>• apply design detailing, and make rational judgements with respect to proportion, scale, composition, codes and standards</li> <li>• select, organize and present design projects</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>• selection and application of freehand, mechanical and computer aided techniques in the production of illustrative pictorial drawings of designed solutions.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Drafting/Design Studio 1 (DES3110-1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	10
	<ul style="list-style-type: none"> <li>• accuracy and precision of drawings and of detailing and notations for drawings.</li> </ul> <p><i>Assessment Tool</i>  <i>Authorized resources for examples</i>  <i>Project Assessment: Drafting/Design Studio 1 (DES3110-1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	20
	<ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the selection, use and technical execution of drawing styles chosen, and the student's discourse regarding: <ul style="list-style-type: none"> <li>– the adequacy of the drawings for illustrating the designed solution</li> <li>– the judgements made during the assignment</li> <li>– why these were made</li> <li>– the effect they had in shaping the final result.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Drafting for Design and Technical Drawing Skills (Advanced) (DESPRE-3E)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p>	20

**MODULE DES3110: DRAFTING/DESIGN STUDIO 1** (continued)

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 competencies.</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal exploration during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
<p>Skills Development</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>demonstrate competency in at least two different drawing types such as isometric and perspective to illustrate complex design concepts and solutions. Drawings are to be completed as line drawings only; i.e., no surface textures, shading, etc.</li> <li>demonstrate competency in freehand drawing construction techniques; e.g., accuracy in proportion and scale using freehand perspective grids, underlay isometric grids, etc.</li> <li>demonstrate competency in instrument and/or CAD techniques for construction of accurate, illustrative views of design solutions</li> <li>select and use appropriate drawing instruments, materials, computer applications.</li> </ul>	<p>This may be drawing existing objects (e.g., calculator, house, running shoe) or design work from previously completed or current design studio modules (e.g., a furniture design, bird house, backpack, kitchen interior).</p>
<p>Applied Problem Solving</p>	<ul style="list-style-type: none"> <li>resolve problems of design detailing during drawing projects, with attention to such aspects as proportion, scale, composition, codes and standards (as applicable).</li> </ul>	

**MODULE DES3110: DRAFTING/DESIGN STUDIO 1 (continued)**

Concept	Specific Learner Expectations	Notes
Presentation, Design Journal and Portfolio	<p><i>The student should:</i></p> <ul style="list-style-type: none"><li>• see Specific Learner Expectations for 2-D Design Studio 1</li><li>• maintain and update a portfolio as described in 2-D Design Studio 1. Additions from this module would include all project-related material (e.g., sketches, notes, drawings completed by hand or with computer assistance), the design journal, and appropriate supplementary material.</li></ul>	Assemble a set of high quality, illustrative line drawings from each assignment or project, for inclusion in a portfolio or for further development in other modules.

## MODULE DES3120: DRAFTING/DESIGN STUDIO 2

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students develop complex explanatory drawings from base (line) drawings, that may include exploded views, cut-aways, revolutions, sectional, and shadow and reflection construction. This is a skill-building module with the emphasis on explanatory line drawings.

**Module Parameters:** 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. Specialized equipment or facilities 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, drafting and CAD.

**Supporting Module:** DES3110 Drafting/Design Studio 1

### 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>• use explanatory drawing techniques; e.g., exploded views, cut-away views, shadow and reflection construction, to convey and communicate complex design solutions</li><li>• use appropriate drawing techniques to illustrate principles of assembly, such as mechanical function, usage</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>• production of pictorial drawings within the context of a teacher- and/or student-specified advanced level assignment.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Drafting/Design Studio 2 (DES3120-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"><li>• selection and application of freehand, mechanical and/or computer-aided techniques in the production of illustrative pictorial drawings of designed solutions.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Drafting/Design Studio 2 (DES3120-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	<p>50</p> <p>10</p>



**MODULE DES3120: DRAFTING/DESIGN STUDIO 2 (continued)**

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• using existing drawings such as isometric or perspective views (from other modules or preselected by teacher), create a set of explanatory drawings (e.g., exploded, cut-aways, sections), which effectively communicate aspects of the design solution such as its assembly, function, use. Examples include exploded view of a hair dryer, cut-away of a running shoe, functions of spaces in a house, traffic circulation in public spaces</li> <li>• demonstrate competency in freehand explanatory techniques; e.g., accuracy in proportion and scale using freehand perspective grids, underlay isometric grids</li> <li>• demonstrate competency in instrument and/or CAD techniques for producing accurate explanatory views of design solutions</li> <li>• select and use appropriate drawing instruments, materials, computer applications, as required.</li> </ul>	
Applied Problem Solving	<ul style="list-style-type: none"> <li>• describe the best way to illustrate the assembly, function and/or use of a design solution through examination of the design, sketchbook exploration, peer and teacher discussion, and through examination of existing successful examples.</li> </ul>	
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1 and Drafting/Design Studio 1.</li> </ul>	<p>Assemble a set of high quality explanatory drawings from each assignment or project, for inclusion in a portfolio or for further development in other modules such as Drafting/Design Studio 3.</p>



## MODULE DES3130: DRAFTING/DESIGN STUDIO 3

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students apply rendering techniques to line drawings (base or developed), concentrating on light, colour and various media; e.g., coloured pencils, marker pens, water colours, computer rendered. Presentation techniques are used to compose high quality illustrations to communicate design solution, such as rendered drawings, context backgrounds, collage and montage techniques, titles, text.

**Module Parameters:** 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. Specialized equipment or facilities 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, drafting and CAD.

**Supporting Module:** DES3110 Drafting/Design Studio 1

### 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>use various rendering techniques and media to create high quality visual representations of design solutions</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>production of high quality rendered drawings within the context of a teacher- and/or student-specified advanced level assignment.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Drafting/Design Studio 3 (DES3130-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	60
<ul style="list-style-type: none"><li>create well-composed presentations of design solutions, using a combination of materials and methods, such as rendered drawings, photographs, text, theme boards, CAD, video</li></ul>	<ul style="list-style-type: none"><li>presentation of products for public display and discourse during presentation/critique.</li></ul> <p><i>Assessment Tool</i> <i>Presentations/Reports: Drafting for Design and Technical Drawing Skills (Advanced) (DESPRE-3E)</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each criteria</i></p>	20



**MODULE DES3130: DRAFTING/DESIGN STUDIO 3 (continued)**

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• using existing drawings such as isometric or perspective views, exploded views or cut-aways from other modules, (e.g., Drafting/Design Studio modules) or preselected by the teacher, create a set of rendered drawings using appropriate tools and materials (e.g., water colour, marker pens, CAD), which effectively communicates aspects of the design solution such as its general appearance, textures, materials, the design in context, the design under different lighting conditions. Examples include colour possibilities for a telephone design, rendered cut-away of a running shoe to show internal materials, entrance of a townhouse project, cut-away of a restaurant to show utilities</li> <li>• demonstrate competency in at least two rendering techniques; e.g., pencil and computer rendering</li> <li>• research, select and use materials, computer applications, as appropriate</li> <li>• compose high quality illustrations using rendered drawings, context backgrounds, photographs, collage and montage techniques, titles, text, etc., for visual presentation of design solutions. Examples include: <ul style="list-style-type: none"> <li>– a well-composed board comprising a rendering of a lawn mower, partial exploded view to show internal workings, a photograph illustrating the product context, informative text and a title</li> <li>– an architectural illustration board comprising rendered elevations, sections and plans, text and titles</li> <li>– a sequence of rendered CAD images.</li> </ul> </li> </ul>	

**MODULE DES3130: DRAFTING/DESIGN STUDIO 3 (continued)**

Concept	Specific Learner Expectations	Notes
Applied Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• evaluate and apply the best way of rendering a drawing of a design solution through examination of the design, sketchbook exploration, peer and teacher discussion and through examination of existing successful examples</li> <li>• evaluate and apply the optimum way of presenting the design solution in a two-dimensional visual format, which may include CAD modelling (but does not include three-dimensional physical models).</li> </ul>	
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1 and Drafting/Design Studio 1.</li> </ul>	<p>Maintain a sketchbook of rendering techniques, examples of various media, etc.</p> <p>Assemble a set of high quality illustrations in a presentation format from each assignment or project, for inclusion in a portfolio.</p>

**MODULE DES3140: TECHNICAL DRAWING STUDIO 1**

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students produce sections, elevations and auxiliary drawings, and build upon their learnings from the intermediate level. Students may use previously produced sketches and multiview drawings as a basis for further work.

**Module Parameters:** 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. Specialized equipment or facilities 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, drafting and CAD.

**Supporting Module:** DES2050 Technical Drawing Applications

**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 detailed section, elevation and auxiliary views for fabrication, manufacturing and/or construction</li> <li>identify and use codes, specifications and conventions as they apply in the drawings produced</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>production of a set of detailed technical drawings based on an advanced level assignment and including one of each of the following:               <ul style="list-style-type: none"> <li>section</li> <li>elevation</li> <li>auxiliary.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Technical Drawing Studio 1 (DES3140-1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>identification and application of codes and specifications, standards and conventions as they pertain to the project and as determined by the teacher and/or other qualified individual.</li> </ul> <p><i>Assessment Tool</i>  <i>Local, regional, provincial, national and international reference manuals for codes and standards</i>  <i>Project Assessment: Technical Drawing Studio 1 (DES3140-1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	<p>70</p> <p>10</p>



**MODULE DES3140: TECHNICAL DRAWING STUDIO 1** (continued)

Concept	Specific Learner Expectations	Notes
Applied Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• from sketches and/or multiview drawing prepared in previous modules or provided by the teacher, identify and select appropriate additional views and produce them</li> <li>• accurately calculate dimensions as required</li> <li>• use codes, specifications and conventions as required</li> <li>• select and use appropriate tools and materials.</li> </ul>	<p>Students may work in several different contexts in this module including electrical, plumbing, process piping and manufacturing. Students may use traditional drafting equipment, CAD or other technology specified by the teacher to complete the module.</p> <p>Electrical or plumbing systems, process piping systems, molds for cast products, machined gear systems and manufacturing jigs can form the basis for this module.</p> <p>Teachers may choose to teach sections, elevations and auxiliary views through projects specific to this module and/or through longer term projects that will carry on into other modules.</p>
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1 and Drafting/Design Studio 1.</li> </ul>	<p>See notes from other Studio modules.</p>



**MODULE DES3150: TECHNICAL DRAWING STUDIO 2****Level:** Advanced**Theme:** Drafting for Design and Technical Drawing Skills**Prerequisite:** None**Module Description:** Students identify and specify details of various product components with a focus on representations of developments; e.g., sheet metal flashing, clothing patterns, and on intersections; e.g., the intersection of two heating ducts.**Module Parameters:** 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. Specialized equipment or facilities 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, drafting and CAD.**Supporting Module:** DES3140 Technical Drawing Studio 1**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 surface developments and intersections for fabricating, constructing and/or manufacturing</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>production of a set of detailed technical drawings based on an advanced level assignment and including one of each of the following:               <ul style="list-style-type: none"> <li>– surface development</li> <li>– intersection.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Technical Drawing Studio 2 (DES3150–1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>	60
	<ul style="list-style-type: none"> <li>produce drawings for different applications, such as heating ducting, tent manufacturing, outerwear manufacturing, and different materials; e.g., sheet metal, plastic, canvas, wool</li> </ul>	<ul style="list-style-type: none"> <li>production of drawings to meet specific requirements.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Technical Drawing Studio 2 (DES3150–1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p>

**MODULE DES3150: TECHNICAL DRAWING STUDIO 2** (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 and use codes, specifications and conventions as they apply in the drawings produced</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 and application of codes and specifications, standards and conventions as they pertain to the project and as determined by the teacher and/or other qualified individual.</li> </ul> <p><i>Assessment Tool</i>  <i>Local, regional, provincial, national and international reference manuals for codes and standards</i>  <i>Project Assessment: Technical Drawing Studio 2 (DES3150-1)</i></p> <p><i>Standard</i>  <i>Performance rating of 2 for each criteria</i></p> <ul style="list-style-type: none"> <li>• maintenance and presentation of a module-based design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and/or peers will be placed on the selection, use and technical execution of drawing types, and the student’s discourse regarding: <ul style="list-style-type: none"> <li>– the adequacy of the drawings for illustrating the designed solution</li> <li>– how the specific requirements of materials and applications have been met in the drawings</li> <li>– judgments made during the assignment and why these were made</li> <li>– the effect they had in shaping the final result.</li> </ul> </li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports: Drafting for Design and Technical Drawing Skills (Advanced) (DESPRE-3E)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p> <ul style="list-style-type: none"> <li>• observations of individual effort and interpersonal exploration during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>10</p> <p>20</p> <p>Integrated throughout</p>

**MODULE DES3150: TECHNICAL DRAWING STUDIO 2** (continued)

Concept	Specific Learner Expectations	Notes
Skills Development	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• produce at least two examples of each of the following within the drawings produced:               <ul style="list-style-type: none"> <li>– intersections</li> <li>– surface developments</li> </ul> </li> <li>• from sketches and/or multiview drawings prepared in previous modules or provided by the teacher, produce additional drawings appropriate to the design's requirements</li> <li>• accurately calculate dimensions as required</li> <li>• use codes, specifications and conventions as required</li> <li>• select and use appropriate tools and materials.</li> </ul>	See notes from other Technical Drawing modules.
Applied Problem Solving	<ul style="list-style-type: none"> <li>• produce drawings that take into account different materials and applications.</li> </ul>	
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1 and Drafting/Design Studio 1.</li> </ul>	See notes from other Studio modules.



## MODULE DES3160: TECHNICAL DRAWING STUDIO 3

**Level:** Advanced

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

**Prerequisite:** None

**Module Description:** Students diagram and illustrate the design specifications for a product, structure and/or process as a basis for fabrication, manufacturing and/or construction. They complete a set of working drawings for a self-generated or teacher-specified designed item.

**Module Parameters:** 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 CAD.

**Supporting Module:** DES3140 Technical Drawing Studio 1

### 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 a complete set of working drawings for a student-generated or teacher-specified designed item</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>production of a complete set of detailed working drawings based on an advanced level assignment.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Technical Drawing Studio 3 (DES3160-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	70
<ul style="list-style-type: none"><li>identify and use codes, specifications and conventions as they apply in the drawings produced</li></ul>	<ul style="list-style-type: none"><li>identification and application of codes and specifications, standards and conventions as they pertain to the project and as determined by the teacher and/or other qualified individual.</li></ul> <p><i>Assessment Tool</i> <i>Local, regional, provincial, national and international reference manuals for codes and standards</i> <i>Project Assessment: Technical Drawing Studio 3 (DES3160-1)</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each criteria</i></p>	10



**MODULE DES3160: TECHNICAL DRAWING STUDIO 3** (continued)

Concept	Specific Learner Expectations	Notes
Applied Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• given a design for which working drawings are to be produced, select appropriate drawing types (e.g., sections, elevations, detail drawings, assembly drawings) to satisfy the detail needs for fabrication, manufacturing and/or construction of a designed item</li> <li>• rationalize the selection of materials used in the design project based on their properties.</li> </ul>	See notes from other Technical Drawing and Drafting/Design Studio modules.
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1 and Drafting/Design Studio 1.</li> </ul>	See notes from other Studio modules.



## MODULE DES3170: VISUALIZING THE FUTURE

**Level:** Advanced

**Theme:** Business/Issues/History

**Prerequisite:** None

**Module Description:** Students explore new possibilities in design, including the role of the designer and the challenges that are faced by the designers.

**Module Parameters:** Basic sketching, drawing and modelling tools and equipment and access to a computer for research and design discipline. Specialized equipment or facilities 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:** DES2060 The Evolution of Design

### 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 potential design challenge; e.g., a habitat for a space colony, and design a solution for it</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>production of drawings and/or models and/or prototypes of a designed solution.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: Visualizing the Future (DES3170–1)</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each criteria</i></p>	60
<ul style="list-style-type: none"><li>provide research supporting the design solution</li></ul>	<ul style="list-style-type: none"><li>presentation of research in writing and/or through discourse during the presentation/critique.</li></ul> <p><i>Assessment Tool</i> <i>Presentations/Reports: Visualizing the Future (DES3170–2)</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each criteria</i></p>	20



**MODULE DES3170: VISUALIZING THE FUTURE** (continued)

Concept	Specific Learner Expectations	Notes
Applied Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• write a project brief detailing the problem to be solved and structure a plan for resolution</li> <li>• create a designed solution</li> <li>• research future design and apply it to the design problem</li> <li>• rationalize design decisions made based on research findings.</li> </ul>	<p>This module will help students consider future design possibilities. The problems identified might have to do with space or undersea exploration, medicine or genetics, high fashion or survival gear. The possibilities are endless. The important feature of this module is to provide students with the impetus to positively challenge the future and to break away from their current paradigms.</p>
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1</li> <li>• present interim findings for teacher/peer review and input</li> <li>• maintain and update a portfolio as described in 2-D Design Studio 1. Additions from this module would include all project related material (e.g., a bibliography of research sources, presentation paper, design solution, videotape of presentation), the design journal, and appropriate supplementary material.</li> </ul>	<p>See notes from other Studio modules.</p>



## MODULE DES3180: THE DESIGN PROFESSION

**Level:** Advanced

**Theme:** Business/Issues/History

**Prerequisite:** None

**Module Description:** Students develop an understanding of the business aspect of the design profession, including educational qualifications, opportunities in design and some of the issues and challenges designers face. Ethical, legal and social issues may also be explored.

**Module Parameters:** No specialized facilities or equipment.

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

### 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>conduct research in one area of the business/profession of design</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>demonstration of a general knowledge of the business and profession of design through project work.</li></ul> <p><i>Assessment Tool</i> <i>Project Assessment: The Design Profession (DES3180-1)</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each criteria</i></p>	40
<ul style="list-style-type: none"><li>identify and consider various issues faced by designers</li></ul>	<ul style="list-style-type: none"><li>formal presentation to teachers and peers.</li></ul> <p><i>Assessment Tool</i> <i>Presentation/Reports: The Design Profession (DES3180-2)</i></p> <p><i>Standard</i> <i>Performance rating of 3 for each criteria</i></p>	40



**MODULE DES3180: THE DESIGN PROFESSION** (continued)

Concept	Specific Learner Expectations	Notes
Applied Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• outline a plan for a small design company; e.g., identify the area of design specialty, prospective clients, production logistics, financing, promotion, etc.</li> </ul>	<p>This module provides an excellent opportunity for students to establish contacts in the design field of their choice. These contacts may be local, regional, provincial, national or international. Once a contact has been made, the student may be able to use this contact as a primary research source for the module. The issues faced by practitioners, their day-to-day activities and their background and training will provide the student with valuable insight into the business and profession of design.</p> <p>This module could be addressed by a design team. The team could conduct individual and/or joint research and then make a joint presentation of the findings.</p>
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1</li> <li>• present interim findings for teacher/peer review and input.</li> </ul>	See notes from other Studio modules.



## MODULE DES3190: PORTFOLIO PRESENTATION

**Level:** Advanced

**Theme:** Business/Issues/History

**Prerequisite:** None

**Module Description:** Students prepare a presentation portfolio for a specific purpose, such as entry into the workplace or a post-secondary institution.

**Module Parameters:** Tools and equipment for mounting, recording and/or displaying design work. 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.

### 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>prepare a presentation portfolio for the purpose of gaining entry into the workplace and/or a post-secondary educational institution</li> <li>present the portfolio in an interview setting</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>quality of the portfolio.</li> </ul> <p><i>Assessment Tool</i>  <i>Project Assessment: Portfolio Presentation (DES3190-1)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p>	70
	<ul style="list-style-type: none"> <li>preparation and presentation of a design portfolio and a design journal. Emphasis during the presentation/critique of the module-based portfolio with the teacher and peers will be placed on the scope and presentation quality of the portfolio, and the student's ability to present his or her portfolio in a professional manner.</li> </ul> <p><i>Assessment Tool</i>  <i>Presentations/Reports Portfolio Presentation (DES3190-2)</i></p> <p><i>Standard</i>  <i>Performance rating of 3 for each criteria</i></p>	30

**MODULE DES3190: PORTFOLIO PRESENTATION** (continued)

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 competencies.</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>observations of individual effort and interpersonal exploration during the learning process.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

Concept	Specific Learner Expectations	Notes
<p>Skills Development</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>describe the purpose of the portfolio being designed.</li> </ul>	<p>It is extremely important for students to be able to present a well-crafted portfolio. The portfolio should exhibit the breadth and depth of the student's capabilities, and indicate his or her academic, personal management and teamwork skills. The portfolio may take several forms and be made up of several parts (e.g., flats of two-dimensional design and photography, photographs or slides of three-dimensional work, video tape, computer disk, or any combination of the above). The student's collection of work retained during his or her studies in design will form the basis for this final presentation portfolio.</p>

**MODULE DES3190: PORTFOLIO PRESENTATION (continued)**

Concept	Specific Learner Expectations	Notes
Applied Problem Solving	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• select the most appropriate work for inclusion in the portfolio</li> <li>• prepare the selected work for inclusion in the portfolio. This might include remounting and/or reworking some pieces, photographing or videotaping design work</li> <li>• write a supporting page introducing the student and providing a listing and short description of the portfolio contents and/or provide a description of the work and rationale for the work through the video medium.</li> </ul>	
Presentation, Design Journal and Portfolio	<ul style="list-style-type: none"> <li>• see Specific Learner Expectations for 2-D Design Studio 1</li> <li>• present completed portfolio to teacher and peers.</li> </ul>	See notes from other Studio modules.

