

DESIGN STUDIES

SECTION H: LINKAGES/TRANSITIONS

This section of the Guide has been designed to provide an overview of linkages and transitions of CTS modules with a number of organizations. The charts and information presented in this section will assist CTS students and teachers in understanding the potential application of CTS modules as students move into the workplace.

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LINKAGES/TRANSITIONS

LINKAGES

With Other CTS Strands

There are many linkages between Design Studies and other CTS strands, and between Design Studies and other secondary programs. The diverse nature of the Design Studies strand also extends and reinforces linkages to a variety of post-secondary studies and career areas.

The notion of design can be found in the many CTS strands. Examples include:

- Fashion Studies—pattern design, fashion illustration
- Communication Technology—graphic design, photographic design, layout and design, reproduction technologies, presentation and communication
- Construction Technologies—structural design, architectural design, furniture design, materials and production processes, mass-production, pre-fabrication
- Fabrication Studies—part and component design, Computer Aided Manufacturing (CAM)
- Management and Marketing—display design, advertising design
- Enterprise and Innovation—product conception, product promotion.

Potential linkages of Design Studies with other CTS strands, determined by course emphasis and area of specialization, are identified in this section (see “Design Studies: Connections with Other CTS Strands”).

With Other Secondary Programs

The Relationship of Design Studies (Introductory Level) to Art 10 Program

The relationship between Design Studies strand (Introductory Level) and the Art 10 program has both commonalities and differences. The commonalities relate to notions of creativity, the development/use of some skills and the

identification and application of the elements and principles of design. The differences centre around a range of skills and their application, and the focus and intent of the two programs. Examples of this relationship can be found within the respective philosophy, goals and scope and sequence of the two programs.

Philosophy:

The philosophy of the Art 10 program focuses on the early development of the artist and some of the basic skills required to be successful in this area. The Art 10 curriculum identifies the following within the program philosophy:

- organization of visual material
- interpretation and making sense of visual stimuli
- valuing art
- expression of feelings
- thinking/behaving as an artist
- making and defending qualitative judgements about art works.

Design Studies focuses on two philosophical elements, stating them as:

- “a creative problem-solving process, which begins with identifying a specific human need and results ideally, in a product or situation that improves or enhances some aspect of our lives”
- “students learning to solve visual, structural and organizational problems using the context of their environment, their other classes and their community experiences.”

Based on these statements, both programs ask students to use and create visual images and make and defend decisions. However, the philosophical base of each program is quite different. The focus of the Art 10 program is on personal expression and the response of individuals to art. Design Studies is concerned with identifying and resolving problems through appropriate means.

Goals:

Three goals are identified for the Art 10 program:

- drawing or delineations (all the ways we record visual information and discoveries)
- compositions or structures (all the ways images are put together to create meaning)
- encounters with art (where we meet and how we respond to visual imagery).

Each of these has three or four sub-goals dealing with skill development, creative investigation and the relationship of art to culture. One of the sub-goals under drawing and delineations is to “develop the ability to investigate visual relationships in their recorded images and in the environment.” This goal suggests notions of problem solving.

Design Studies lists 15 goals for the program including:

- creativity and innovation
- developing aesthetic awareness
- conducting research
- identifying and solving problems
- working on two- and three-dimensional projects
- working individually and as team members
- using technology appropriately and safely
- developing effective communication skills
- recognizing and dealing with moral, ethical and legal issues as they pertain to design
- recognizing the potential impact of design on the environment.

Again the focus of the program is on developing creative and appropriate solutions to problems and recognizing and addressing the many factors that may influence design decisions. Technical skills and knowledge students may develop through the design program may be similar to those developed through the Art 10 program but the focus of the learning is distinctly different.

Scope and Sequence:

The Art 10 program as a whole has identified three main areas within the scope and sequence (drawings, compositions, encounters), while Design Studies (Introductory Level) has identified six (sketching/drawing/modelling, the design process, two-dimensional design, three-dimensional design, Computer-assisted Design [CAD], drafting for design). Specific outcomes identified within Art 10 include development of drawing skills, application of elements and principles of design in compositions, development of skills in art criticism and the relationship of art within society. Development of drawing skills and the identification and use of the elements and principles of design are also dealt with in Design Studies as these are two of the building blocks of design activity. While these two themes are the same, the depth of skills and knowledge associated with each can be quite different in the two programs. And as previously indicated their application is based on quite different philosophies and goals.

Summary:

While there is a relationship between Design Studies and Art 10 in some of the basic skills and knowledge that will be developed by students, the distinction between the programs comes in their respective foci; one focusing on personal expression, the other on resolving problems effectively.

Design and Science

Design also links with the elementary and junior high science programs. Elementary Science is addressing Design and Technology, including problem solving (the scientific method being closely related to a process of design). Specific themes include Materials, Movement, Structures and Control.

Junior high science has within it three major areas of emphasis: Nature of Science, Science and Technology; Science, Technology and Society. The program modality is based on the use of the inquiry method, which strongly parallels design

methodology. Scientific inquiry skills are identified in the Nature of Science. They are reinforced by Technological Problem-Solving Skills (a process of design) identified within Science and Technology and presented as:

- understanding the problem
 - identify the purpose
 - identify specific requirements (specifications)
- developing a plan
 - identifying alternatives
 - planning and designing
- carrying out the plan
 - testing the design
 - troubleshooting
- evaluating
 - evaluating the design
 - evaluating the planning process.

Furthermore, the Science and Technology component identifies seven additional goals including having students:

- appreciate “good design, taking into consideration function, safety, aesthetics and environmental effects”
- be willing to “take the initiative in dealing with practical problems”
- be aware of “alternatives in the approach to technological problems”
- appreciate the “need for technological devices and processes to serve human needs.”

Many of the societal aspects of “design” are supported by the Science, Technology and Society component with respect to attitude, e.g., “appreciation of the need for informed decision making at both personal and societal levels” and through the decision-making skills identified. Identifying issues and alternatives, researching, reflecting and deciding, taking action and evaluating are again components of the process of design.

The Grade 7 science program includes units on Structure and Design, and Force and Motion, both of which relate directly to the Three-dimensional and Living Environments modules in Design Studies. Similarly, Grade 8 science includes Energy and Machines, Consumer Product Testing

and Interactions and Environments, and Grade 9 includes Fluids and Pressure, Heat Energy: Transfer and Conservation, and Electromagnetic Systems. These again support the Three-dimensional Design and Living Environments foci in Design Studies.

Potential linkages of Design Studies with other core and complementary subject areas across the curriculum are identified in this section (see “Design Studies: Connections Across the Curriculum”).

To Other Government Initiatives

In 1991, the federal Department of Communications initiative on design in Canada drew together representatives from the design community to look at the state of design in Canada and to discuss its future. Representations were made by leading designers at that time. The Design Studies program has received input from contributors to this process and has therefore in part been shaped by the initiative.

TRANSITIONS

To the Community/Workplace

There is limited direct entry into the workplace from Design Studies, as the development of marketable skills in design requires post-secondary training. As one business-based member of the communication network commented, the Design Studies “course is very ambitious—covers ALL design, i.e., architectural, graphic, industrial, interior, set, etc. Any one of these is enough for a four-year program.” Two Design Studies modules, The Design Profession and Portfolio Presentation, deal specifically with helping students prepare for and successfully enter post-secondary design schools.

Information from the National Occupational Classification (NOC) regarding occupations in design-related areas that can be accessed upon completion of high school is provided in this section (see “Design Studies: Related Occupations”).

To Related Post-secondary Programs

There is articulation between Design Studies and programs offered at the post-secondary level. Students wishing to pursue a design career will in most instances seek additional training in one of the following careers:

- Architect
- Draftsman
- Engineer
- Exhibition/Display Designer
- Fashion Designer
- Furniture Designer
- Graphic Designer
- Illustrator
- Industrial (Product) Designer
- Interior Designer
- Landscape Designer
- Set Designer
- Other emerging career areas.

An outline of post-secondary institutions in Alberta currently offering programs in design studies-related areas is provided in this section (see “Design Studies: Summary of Related Post-secondary Programs”).

CREDENTIALLING

There are no credentialling opportunities for Design Studies modules.

LINKAGES – Design Studies: Connections with Other CTS Strands

Design Studies Modules	Other CTS Strands																				
	Agriculture	Career Transitions	Communication Technology	Community Health	Construction Technologies	Cosmetology Studies	Electro-Technologies	Energy and Mines	Enterprise and Innovation	Fabrication Studies	Fashion Studies	Financial Management	Foods	Forestry	Information Processing	Legal Studies	Logistics	Management and Marketing	Mechanics	Tourism Studies	Wildlife
Theme: Design Skills, Processes and Applications																					
DES1010: Sketch, Draw & Model																					
DES1020: The Design Process																					
DES1030: 2-D Design Fundamentals																					
DES1040: 3-D Design Fundamentals																					
DES2010: 2-D Design Applications																					
DES2020: 3-D Design Applications																					
DES3010: 2-D Design Studio 1																					
DES3020: 2-D Design Studio 2																					
DES3030: 2-D Design Studio 3																					
DES3040: 3-D Design Studio 1																					
DES3050: 3-D Design Studio 2																					
DES3060: 3-D Design Studio 3																					
DES3070: Living Environment Studio 1																					
DES3080: Living Environment Studio 2																					
DES3090: Living Environment Studio 3																					
Theme: Drafting for Design & Technical Drawing Skills																					
DES1050: CAD Fundamentals																					
DES1060: Drafting/Design Fund																					
DES2030: CAD Applications																					
DES2040: Drafting/Design Applications																					
DES2050: Technical Drawing Applications																					
DES3100: CAD Modelling Studio																					
DES3110: Drafting/Design Studio 1																					
DES3120: Drafting/Design Studio 2																					
DES3130: Drafting/Design Studio 3																					
DES3140: Technical Drawing Studio 1																					
DES3150: Technical Drawing Studio 2																					
DES3160: Technical Drawing Studio 3																					
Theme: Business/Issues/History																					
DES2060: The Evolution of Design																					
DES3170: Visualizing the Future																					
DES3180: The Design Profession																					
DES3190: Portfolio Presentation																					

Provides many direct links with competencies in this strand. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical situations.



Provides some links with competencies developed in this strand, usually through the application of related technologies and/or processes.



LINKAGES – Design Studies: Connections Across the Curriculum

Design Studies Modules	Across the Curriculum																	
	Junior High							Senior High										
	Language Arts	Social Studies	Mathematics	Science	Health & PLS	Physical Education	Fine Arts	English	Social Studies	Mathematics	Science (General)	Biology	Chemistry	Physics	CALM	Physical Education	Fine Arts	Social Sciences
Theme: Design Skills, Processes and Applications																		
DES1010: Sketch, Draw & Model																		
DES1020: The Design Process				■			■				■			■				■
DES1030: 2-D Design Fundamentals							■											■
DES1040: 3-D Design Fundamentals				■			■											■
DES2010: 2-D Design Applications							■											■
DES2020: 3-D Design Applications				■														■
DES3010: 2-D Design Studio 1																		■
DES3020: 2-D Design Studio 2																		■
DES3030: 2-D Design Studio 3																		■
DES3040: 3-D Design Studio 1																		■
DES3050: 3-D Design Studio 2																		■
DES3060: 3-D Design Studio 3																		■
DES3070: Living Environment Studio 1												■						■
DES3080: Living Environment Studio 2																		■
DES3090: Living Environment Studio 3																		■
Theme: Drafting for Design & Technical Drawing Skills																		
DES1050: CAD Fundamentals																		
DES1060: Drafting/Design Fund.																		
DES2030: CAD Applications																		
DES2040: Drafting/Design Applications																		
DES2050: Technical Drawing Applications																		
DES3100: CAD Modelling Studio																		
DES3110: Drafting/Design Studio 1																		
DES3120: Drafting/Design Studio 2																		
DES3130: Drafting/Design Studio 3																		
DES3140: Technical Drawing Studio 1																		
DES3150: Technical Drawing Studio 2																		
DES3160: Technical Drawing Studio 3																		
Theme: Business/Issues/History																		
DES2060: The Evolution of Design																		■
DES3170: Visualizing the Future																		■
DES3180: The Design Profession																		■
DES3190: Portfolio Presentation																		■

Provides many direct links with competencies content. Students will reinforce, extend and apply a substantial number of knowledge and/or skill components in practical contexts.



Provides some links with course content, usually through the application of related technologies and/or processes



Correlation of Design Studies to Practical Arts: Graphic Arts 22–32★

	GRAPHIC ARTS 22-32																												
	GRAPHIC ARTS 22A	Introduction	Image Creation	GRAPHIC ARTS 22B	History	Safety	Maintenance	Preparation and Operation	Press Operation	Inks and their Properties	GRAPHIC ARTS 22C	Safety	Photography - Black and White (Basic)	Photography - Black and White (Adv)	Colour Photography	GRAPHIC ARTS 32A	Process Camera	GRAPHIC ARTS 32B	History	Safety	Papers	Bindery Operations	Packaging	Related Operations	Maintenance	Careers	GRAPHIC ARTS 32C	Practical Extensions	
DES1010: Sketch, Draw & Model					✓															✓									
DES1020: The Design Process					✓															✓									
DES1030: 2-D Design Fundamentals					✓								✓		✓					✓									
DES1040: 3-D Design Fundamentals					✓															✓									
DES1050: CAD Fundamentals					✓															✓									
DES1060: Drafting/Design Fundamentals					✓															✓									
DES2010: 2-D Design Applications		✓			✓								✓	✓	✓					✓									
DES2020: 3-D Design Applications					✓															✓									
DES2030: CAD Applications					✓															✓									
DES2040: Drafting/Design Applications					✓															✓									
DES2050: Technical Drawing Applications					✓															✓									
DES2060: The Evolution of Design	✓			✓	✓														✓	✓	✓			✓		✓			
DES3010: 2-D Design Studio 1					✓															✓									
DES3020: 2-D Design Studio 2					✓															✓									
DES3030: 2-D Design Studio 3					✓								✓	✓	✓		✓			✓	✓		✓				✓		
DES3040: 3-D Design Studio 1					✓															✓									
DES3050: 3-D Design Studio 2					✓															✓									
DES3060: 3-D Design Studio 3					✓															✓									
DES3070: Living Environment Studio 1					✓															✓									
DES3080: Living Environment Studio 2					✓															✓									
DES3090: Living Environment Studio 3					✓															✓									
DES3100: CAD Modelling Studio					✓															✓									
DES3110: Drafting/Design Studio 1					✓															✓									
DES3120: Drafting/Design Studio 2					✓															✓									
DES3130: Drafting/Design Studio 3					✓															✓									
DES3140: Technical Drawing Studio 1					✓															✓									
DES3150: Technical Drawing Studio 2					✓															✓									
DES3160: Technical Drawing Studio 3					✓															✓									
DES3170: Visualizing the Future					✓															✓							✓		
DES3180: The Design Profession					✓															✓							✓		
DES3190: Portfolio Presentation					✓															✓									

★September 1997: All practical arts courses replaced by Career and Technology Studies.

TRANSITIONS—*Design Studies: Related Occupations*

Information for this chart was obtained from the National Occupational Classification (NOC) descriptions:

Educational Requirements:

D: High School Education

B: College or Vocational Education

C: Apprenticeship

A: University

Occupation Profile	NOC#	D	C	B	A
Aerospace Engineer	2146				✓
Architect	2151				✓
Architectural Technologists and Technicians	2251			✓	
Ceramic Engineer	2142				✓
Chemical Engineer	2134				✓
Chemical Engineering Technologist	2211			✓	
Civil Engineer	2131				✓
Civil Engineering Technologists and Technicians	2231			✓	
Drafting Technologists and Technicians	2253			✓	
Engineering Design and Drafting Technologists	2253			✓	
Exhibit Designer	5252	✓		✓	
Industrial Designer	2252			✓	✓
Industrial and Manufacturing Engineers	2141				✓
Industrial Engineering Technologist	2233			✓	
Interior Designer	5242			✓	✓
Jeweler	7344	✓		✓	
Landscape Architect	2152				✓
Landscape Architectural Technologist	2225			✓	
Mechanical Engineer	2132				✓
Mechanical Engineering Technologist	2232			✓	
Metallurgical (Materials) Engineer	2142				✓
Other Professional Engineers	2148				✓
Robotics Technologist	2241			✓	
Theatre Designer	5243			✓	✓
Upholsterer	7341	✓		✓	
Urban and Land Use Planners	2153				✓

TRANSITIONS – Design Studies: Summary of Related Post-secondary Programs*

	PUBLIC COLLEGES										APPRENTICESHIP TRADE	PRIVATE COLLEGES				TECH. INST.	Banff	UNIVERSITIES			VOCATIONAL COLLEGES							
	Alberta College of Art & Design	Fairview College	Grande Prairie Regional College	Grant MacEwan Community College	Keyano College	Lakeland College	Lethbridge Community College	Medicine Hat College	Mount Royal College	Olds College		Red Deer College	Augustana University College	Canadian Union College	Concordia College	King's University College, The	North American Baptist College	Northern Alberta Institute of Technology	Southern Alberta Institute of Technology	Banff Centre	University of Alberta	University of Calgary	University of Lethbridge	AVC - Calgary	AVC - Edmonton	AVC - Lac La Biche	AVC - Lesser Slave Lake	
Horticulture/Landscape Design/Gardening										CD	4y						D								C			
Architectural/Computer-aided Drafting (CAD)						D												V										
Architectural Technology																	D	D										
Architectural/Environmental Design																					M							
Geographical/Regional/Community/Urban Planning & Design																	D				M	BM						
Interior Design/Technology						D		D									D			C								
Art / Art History / Visual Arts	D(4y)		CD 2t	D	CD 2t			D2t		D2t	B	V						V	BM	BM	BM							
Commercial Signwriting																	C											
Photography / Photographic Arts	D(4y)																VD	V	V		BM							
Theatre Production & Design Arts				D				D		D							C	D										
Audio and/or Visual Communications	D(4y)			D				D(3y) 3t								V		VD		BM								
Printing & Graphic Arts																	VC	VD							VC			

CODES: B Bachelor's Degree D Diploma (2 years) w weeks
M Master's Degree V Varies m months
Ph.D. Doctoral Degree 1t One-year transfer y years
C Certificate (1 year or less) 2t Two-year transfer

*Information adapted from "It's About Time: To Start Thinking About Your Future," Advanced Education and Career Development, 1995.