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**3D Animation and Computer-Generated Imagery**

2002

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**Type of certification:** Diploma of College Studies

**Number of credits:** 91 2/3

**Total duration:** 2 700 hours of instruction

General education components:



## **ACKNOWLEDGMENTS**

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## INTRODUCTION TO THE PROGRAM

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The *3D Animation and Computer-Generated Imagery* program is in keeping with the aims and orientations of technical education that guide the Direction générale de la formation professionnelle et technique. It has been designed in accordance with the framework for developing technical programs, which requires participation by people working in the field and in the education community.

This program is based on competencies, formulated in terms of objectives and standards. It was designed using an approach that takes into account training needs, the job analysis and the general goals of technical education, and it serves as the basis for the definition and evaluation of learning activities. In addition, it lends itself to the application of the program-based approach.

The *3D Animation and Computer-Generated Imagery* program includes a general education component common to all programs (16 2/3 credits), a general education component adapted to this program (11 credits), and a program-specific component (16 2/3 credits). The program is designed to meet the needs of the industry and the education community.



## **GLOSSARY**

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### **Program**

An integrated set of learning activities leading to the achievement of educational objectives based on set standards (*College Education Regulations*, section 1).

### **Competency**

In the program-specific component of a technical program: an integrated set of cognitive and psychomotor skills and socioaffective behaviours that enable a student to exercise a role or function, perform a task or carry out an activity at entry level on the job market (*Cadre technique d'élaboration de la partie ministérielle des programmes d'études techniques*, p. 3).

### **Objective**

The competency, skills or knowledge to be acquired or mastered (*College Education Regulations*, section 1).

### **Statement of the competency**

In the program-specific component of a technical program, the statement of the competency is the result of the job analysis, the general goals of technical education and, in certain cases, other determinants. It consists of an action verb and a complement. It must be clear and unequivocal.

In the general education components, the statement of the competency is the result of an analysis of the needs of general education.

### **Elements of the competency**

In the program-specific component of a technical program, the elements of the competency include only what is necessary in order to understand the competency. They specify the major steps in exercising the competency or the main aspects of the competency.

In the general education components, the elements of the objective, formulated in terms of a competency, specify the main aspects of the competency. They include only what is necessary in order to understand and attain the competency.

### **Standard**

The level of performance at which an objective is considered to be achieved (*College Education Regulations*, section 1).

## **Achievement context**

In the program-specific component of a technical program, the achievement context corresponds to the situation in which the competency is exercised at entry level on the job market. The achievement context does not specify the context for learning or evaluation.

## **Performance criteria**

In the program-specific component of a technical program, the performance criteria define requirements by which to judge the attainment of each element of the competency and consequently of the competency itself. The performance criteria are based on the requirements at entry level on the job market. The performance criteria are not the evaluation instrument but, rather, they serve as a reference for the development of the evaluation instrument. Each element of the competency requires at least one performance criterion.

In the general education components, the performance criteria define the requirements for recognition of the attainment of the standard. All the criteria must be respected for the objective to be recognized as having been attained.

## **Learning activities**

In the program-specific component of a technical program, the learning activities are classes (or labs, workshops, seminars, practicums or other educational activities) designed to ensure the attainment of the targeted objectives and standards. Colleges are entirely responsible for defining the learning activities and applying the program-based approach.

In the general education components, the elements of the learning activities that may be determined in whole or in part by the Minister are the field of study, the discipline(s), the weightings, the total hours of instruction, the number of credits and any details deemed essential.

# PART ONE

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## GOALS OF THE PROGRAM

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The *3D Animation and Computer-Generated Imagery* program prepares students for careers in 3D animation and computer-generated imagery (CGI). Graduates of the program will find employment primarily in computer animation studios, television studios and in companies specialized in multimedia production, electronic gaming, postproduction and special effects. They may also work for industrial design firms and software producers, or in a variety of areas such as medicine, geomatics, aeronautics and high fashion.

Technicians in 3D animation and CGI must be able to analyze the characteristics of a given project. They must be able to produce a prototype of the animation, model graphic elements (e.g. characters, objects and environment), apply textures and colours, arrange lighting, animate the graphic elements and fine-tune the final rendering. They may also create digital visual effects and composite images.

The aim of the *3D Animation and Computer-Generated Imagery* program is to reconcile two training requirements, namely versatility and specialization. Versatility is ensured through the acquisition of general culture and basic training in art and film analysis, drawing, sculpture, the use of research and image acquisition tools, the use of image processing and animation software, set design and storyboarding. Specialization, which is needed to enter the job market, is ensured through the acquisition



## **GOALS OF GENERAL EDUCATION**

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In Québec, college is the next stage after the compulsory years of schooling (elementary and secondary school) during which students acquire basic knowledge and skills. It represents a major crossroads in that it places greater emphasis on the cultural content of education and leads directly to the job market or to university. The college system meets current needs with respect to technical and pre-university education. It allows students to further their education without narrowing their options, since they may switch from one type of program to the other. Finally, it provides students with a well-rounded, balanced education.

General education is an integral part of every program and comprises three components: a component common to all programs, a component adapted to the particular program and a complementary component. The aim of general education is to provide students with a common cultural core, to help them learn and develop generic skills, and to foster desirable attitudes. Its purpose is to educate students as individuals, to prepare them for their role as responsible members of society and to enable them to share in the common cultural heritage.

### **Common cultural core**

The common cultural core comprises the following:

- mastery of the language of instruction as a tool for communication and reflection, and mastery of the basic rules of rational thought, discourse and argumentation
- the ability to communicate in another language, primarily French or English
- openness to the world and to cultural diversity
- appreciation of the riches of our cultural heritage through awareness of the accomplishments of human civilization
- the ability to relate to major currents in the history of human thought
- the ability to think independently and critically
- personal and social ethics
- knowledge concerning the development of physical and intellectual well-being
- awareness of the need to develop habits conducive to good health

### **Generic skills**

General education allows students to acquire and develop the following generic skills:

- conceptualization, analysis and synthesis
- coherent reasoning
- critical judgment
- articulate expression
- the ability to apply what they have learned to the analysis of situations

the ability to apply what they have learned to decision making  
work methods  
the ability to reflect on what they have learned

### **Desirable attitudes**

The common cultural core and generic skills help students to acquire and develop the following attitudes:

autonomy  
a critical sense  
awareness of their responsibilities toward themselves and others  
open-mindedness  
creativity  
openness to the world

These aims apply to the three general education components:

General education component common to all programs, which is allotted 16  $\frac{2}{3}$  credits distributed as follows:

language of instruction and literature: 7  $\frac{1}{3}$  credits  
humanities or *philosophie*: 4  $\frac{1}{3}$  credits  
physical education: 3 credits  
second language: 2 credits

General education component adapted to programs, which introduces tasks or learning situations that are relevant to the program-specific component of a program. The breakdown of credits, for a total of 6, is as follows:

language of instruction and literature: 2 credits  
humanities or *philosophie*: 2 credits  
second language: 2 credits

Complementary general education component, which provides students with learning activities chosen to balance their training and complement the program-specific component. Students may choose courses for a total of 4 credits in the following areas:

social sciences  
science and technology  
modern languages  
mathematics literacy and computer science  
art and aesthetics

The knowledge and skills acquired in the general education components should be emphasized and, whenever possible, applied in the program-specific component, and vice versa. Thus, general education and the program-specific component of a program enhance each other as they contribute to the students' overall education.

Each college-level institution must provide general education through learning activities that are consistent with its educational project, in keeping with the aims, subject areas and ministerial guidelines provided.

The objectives and standards in the general education components were developed according to the provisions of



## **EDUCATIONAL INTENTIONS OF GENERAL EDUCATION**

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The educational intentions describe how each field of studies in the common, adapted and complementary components of general education contributes to achieving the goals of general education. For the common and adapted components, the educational intentions include:

- a general statement of the role of each field of studies
- the principles underlying this role
- outcome objectives defining (in terms of knowledge, skills and attitudes) the contribution of each field to the achievement of the goals of general education
- an explanation of the sequence of objectives and standards

The full text of the educational intentions may be found at the end of this document.



## **PROGRAM OBJECTIVES**

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### **GENERAL EDUCATION COMPONENT COMMON TO ALL PROGRAMS**

**(16 2/3 credits)**

- 0004 To analyze and produce various forms of discourse.
- 0005 To apply a critical approach to literary genres.
- 0006 To apply a critical approach to a literary theme.
- 00B2 To apply a logical analytical process to how knowledge is organized and used.
- 000G To apply a critical thought process to world-views.
- 0017 Appliquer les notions de base de la communication en français courant.  
or  
000A Communiquer en français avec une certaine aisance.  
or  
000B Communiquer avec aisance en français.  
or  
000C Traiter d'un sujet culturel et littéraire.
- 0064 To establish the role that being physically active plays amongst the lifestyle behaviours which promote health.
- 0065 To improve one's effectiveness when practising a physical activity.
- 0066 To demonstrate one's responsibility for being physically active in a manner which promotes health.

**GENERAL EDUCATION COMPONENT ADAPTED TO THIS PROGRAM****(6 credits)**

- 000L To communicate in the forms of discourse appropriate to one or more fields of study.
- 000U To apply a critical thought process to ethical issues relevant to the field of study.
- 0018 Appliquer des notions fondamentales de la communication en français, liées à un champ d'études.  
or
- 000Q Communiquer en français dans un champ d'études particulier.  
or
- 000R Communiquer avec aisance en français dans un champ d'études particulier.  
or
- 000S Dissserter en français sur un sujet lié au champ d'études.

**COMPLEMENTARY GENERAL EDUCATION COMPONENT****(4 credits)**

- 000V To estimate the contribution of the social sciences to an understanding of contemporary issues.
- 000W To analyze one of the major problems of our time using one or more social scientific approaches.
- 000X To explain the general nature of science and technology and some of the major contemporary scientific or technological issues.
- 000Y To resolve a simple problem by applying the basic scientific method.
- 000Z To communicate with limited skill in a modern language.
- 0010 To communicate on familiar topics in a modern language.
- 0067 To communicate with relative ease in a modern language.
- 0011 To recognize the role of mathematics or informatics in contemporary society.
- 0012 To use various mathematical or computer concepts, procedures and tools for common tasks.
- 0013 To consider various forms of art produced by aesthetic practices.
- 0014 To produce a work of art.

**PROGRAM-SPECIFIC COMPONENT**

**(65 credits)**

- 0250 To analyze the job function.
- 0251 To work with major trends in visual and graphic arts.
- 0252 To analyze a production.
- 0253 To draw a character and its environment.
- 0254 To acquire images.
- 0255 To produce a concept sketch.
- 0256 To process digital images.
- 0257 To shape a model.
- 0258 To stage a scene.
- 0259 To design environments.
- 025A To design characters.
- 025B To develop a storyboard.
- 025C To assemble media elements.
- 025D To produce computer-generated images.
- 025E To model props.
- 025F To model sets.
- 025G To model characters.
- 025H To represent movements in three dimensions.
- 025J To animate characters.
- 025K To create digital visual effects.
- 025L To produce a 3D animation film.
- 025M To prepare to enter the work force.



## PART TWO

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**OBJECTIVES AND STANDARDS –  
GENERAL EDUCATION COMPONENT  
COMMON TO ALL PROGRAMS**

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GENERAL EDUCATION COMPONENT COMMON TO ALL PROGRAMS: CODE: 0004  
 LANGUAGE OF INSTRUCTION AND LITERATURE

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To analyze and produce various forms of discourse.</p> <p><b>Elements of the Competency</b></p> <p>1 To identify the characteristics and functions of the components of discourse.</p> <p>2 To determine the organization of facts and arguments of a given discourse.</p> <p>3 To prepare ideas and strategies for a projected discourse.</p> <p>4 To formulate a discourse.</p> <p>5 To edit the discourse.</p>	<p><b>Performance Criteria</b></p> <p>1.1 Accurate explanation of the denotation of words.</p> <p>1.2 Adequate recognition of the appropriate connotation of words.</p> <p>1.3 Accurate definition of the characteristics and function of each component.</p> <p>2.1 Clear and accurate recognition of the main idea and structure.</p> <p>2.2 Clear presentation of the strategies employed to develop an argument or thesis.</p> <p>3.1 Appropriate identification of topics and ideas.</p> <p>3.2 Adequate gathering of pertinent information.</p> <p>3.3 Clear formulation of a thesis.</p> <p>3.4 Coherent ordering of supporting material.</p> <p>4.1 Appropriate choice of tone and diction.</p> <p>4.2 Correct development of sentences.</p> <p>4.3 Clear and coherent development of paragraphs.</p> <p>4.4 Formulation of a 750-word discourse.</p> <p>5.1 Thorough revision of form and content.</p>
<p>LEARNING ACTIVITIES</p>	
<p><b>Discipline:</b> English</p> <p><b>Weighting:</b> 2-2-4, 1-3-4</p> <p><b>Credits:</b> 2 2/3</p>	

GENERAL EDUCATION COMPONENT COMMON TO ALL PROGRAMS: CODE: 0005  
LANGUAGE OF INSTRUCTION AND LITERATURE

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To apply a critical approach to literary genres.</p>	

GENERAL EDUCATION COMPONENT COMMON TO ALL PROGRAMS: CODE: 0006  
 LANGUAGE OF INSTRUCTION AND LITERATURE

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To apply a critical approach to a literary theme.</p> <p><b>Elements of the Competency</b></p> <p>1 To recognize the treatment of a theme within a literary text.</p> <p>2 To situate a literary text within its cultural context.</p> <p>3 To detect the value system inherent in a literary text.</p> <p>4 To explicate a text from a thematic perspective.</p>	<p><b>Performance Criteria</b></p> <p>1.1 Clear recognition of elements within the text which define and reinforce a theme and its development.</p> <p>1.2 Adequate demonstration of the effects of significant literary and rhetorical devices.</p> <p>2.1 Appropriate recognition of a text as an expression of cultural context.</p> <p>2.2 Adequate demonstration of the effects of significant literary and rhetorical devices.</p> <p>3.1 Appropriate identification of expression (explicit/implicit) of a value system in a text.</p> <p>4.1 Selective use of an appropriate terminology.</p> <p>4.2 Effective presentation of a 1000-word integrated response to a text.</p>
<p>LEARNING ACTIVITIES</p>	
<p><b>Discipline:</b> English</p> <p><b>Weighting:</b> 2-2-3</p> <p><b>Credits:</b> 2 1/3</p>	









FORMATION GÉNÉRALE COMMUNE : LANGUE SECONDE (NIVEAU III) CODE : 000B

OBJECTIF	STANDARD
<p><b>Énoncé de la compétence</b></p> <p>Communiquer avec aisance en français.</p> <p><b>Éléments</b></p> <p>1 Produire un texte oral planifié de cinq minutes</p>	<p><b>Critères de performance</b></p>

FORMATION GÉNÉRALE COMMUNE : LANGUE SECONDE (NIVEAU IV) CODE : 000C

OBJECTIF	STANDARD
<p><b>Énoncé de la compétence</b></p> <p>Traiter d'un sujet culturel et littéraire.</p> <p><b>Éléments</b></p> <p>1 Analyser un texte culturel ou littéraire.</p> <p>2 Rédiger un texte sur un sujet culturel ou littéraire.</p>	<p><b>Critères de performance</b></p> <p>1.1 Formulation personnelle des éléments principaux du texte.</p> <p>1.2 Inventaire des thèmes principaux.</p> <p>1.3 Relevé d'indices qui permettent de situer le texte dans son contexte socioculturel et historique.</p> <p>1.4 Repérage des valeurs véhiculées.</p> <p>1.5 Repérage juste de la structure du texte.</p> <p>1.6 Articulation claire d'un point de vue personnel.</p> <p>2.1 Respect du sujet.</p> <p>2.2 Respect du code grammatical et orthographique.</p> <p>2.3 Adaptation au lecteur ou à la lectrice.</p> <p>2.4 Utilisation judicieuse des principaux éléments du corpus.</p> <p>2.5 Formulation claire et cohérente d'un texte de 500 mots.</p> <p>2.6 Articulation claire d'un point de vue personnel.</p>
<p><b>ACTIVITÉS D'APPRENTISSAGE</b></p>	
<p><b>Discipline :</b> Français, langue seconde</p> <p><b>Pondération :</b> 3-0-3</p> <p><b>Unités :</b> 2</p>	

GENERAL EDUCATION COMPONENT COMMON TO ALL PROGRAMS:  
PHYSICAL EDUCATION

CODE: 0064

OBJECTIVE

STANDARD

**Statement of the Competency**

To establish the role that being physically active

GENERAL EDUCATION COMPONENT COMMON TO ALL PROGRAMS:  
PHYSICAL EDUCATION

CODE: 0065

OBJECTIVE

STANDARD

**Statement of the Competency**

To improve one's effectiveness when practising a physical activity.

GENERAL EDUCATION COMPONENT COMMON TO ALL PROGRAMS:  
PHYSICAL EDUCATION

CODE: 0066

OBJECTIVE

STANDARD

**Statement of the Competency**

**OBJECTIVES AND STANDARDS –  
GENERAL EDUCATION COMPONENT  
ADAPTED TO THIS PROGRAM**

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GENERAL EDUCATION COMPONENT ADAPTED TO THIS PROGRAM: CODE: 000L  
 LANGUAGE OF INSTRUCTION AND LITERATURE

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To communicate in the forms of discourse appropriate to one or more fields of study.</p> <p><b>Elements of the Competency</b></p> <p>1 To identify the forms of discourse appropriate to given fields of study.</p> <p>2 To recognize the discursive frameworks appropriate to given fields of study.</p>	<p><b>Performance Criteria</b></p> <p>1.1 Accurate recognition of specialized vocabulary and conventions.</p> <p>1.2 Accurate recognition of the characteristics of the form of discourse.</p> <p>2.1 Clear and accurate recognition of the main ideas and structure.</p> <p>2.2 Appropriate distinction between fact and argument.</p>

GENERAL EDUCATION COMPONENT ADAPTED TO THIS PROGRAM: HUMANITIES  
 CODE: 000U

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To apply a critical thought process to ethical issues relevant to the field of study.</p> <p><b>Elements of the Competency</b></p> <p>1 To situate significant ethical issues, in appropriate world-views and fields of knowledge.</p>	<p><b>Performance Criteria</b></p> <p>1.1 Accurate recognition of the basic elements of ethical issues.</p> <p>1.2 Appropriate use of . 1.23 Adequate identification of t5.5(phe C                      1withworld-vie5.5(pws and fields of )n</p>

OBJECTIF	STANDARD
<p><b>Énoncé de la compétence</b></p> <p>Appliquer des notions fondamentales de la communication en français, liées à un champ d'études.</p> <p><b>Éléments</b></p> <p>1 Dégager le sens d'un message oral simple lié à</p>	<p><b>Critères de performance</b></p>

OBJECTIF	STANDARD
<p><b>Énoncé de la compétence</b></p> <p>Communiquer en français dans un champ d'études particulier.</p> <p><b>Éléments</b></p> <p>1 Distinguer les types de textes propres au champ d'études.</p> <p>2 Interpréter des textes représentatifs du champ d'études.</p> <p>3 Utiliser des techniques de production de textes appropriées au champ d'études.</p>	<p><b>Critères de performance</b></p> <p>1.1 Distinction précise des caractéristiques formelles de chacun des principaux types de textes et des conventions utilisées.</p> <p>2.1 Distinction claire des principaux éléments du texte.</p> <p>2.2 Interprétation claire du vocabulaire spécialisé.</p> <p>2.3 Repérage précis des idées et des sujets traités.</p> <p>2.4 Utilisation pertinente des techniques de lecture et d'écoute.</p> <p>3.1 Emploi pertinent du vocabulaire spécialisé et des conventions.</p> <p>3.2 Respect du niveau de langue et du code grammatical.</p> <p>3.3 Formulation claire et cohérente du propos.</p> <p>3.4 Utilisation pertinente des techniques d'expression.</p>
<p><b>ACTIVITÉS D'APPRENTISSAGE</b></p>	
<p><b>Discipline :</b> Français, langue seconde</p> <p><b>Nombre d'heures-contact :</b> 45</p> <p><b>Nombre d'unités :</b> 2</p>	





**OBJECTIVES AND STANDARDS –  
COMPLEMENTARY GENERAL EDUCATION  
COMPONENT**

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COMPLEMENTARY GENERAL EDUCATION COMPONENT: SOCIAL SCIENCES  
 CODE: 000V

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To estimate the contribution of the social sciences to an understanding of contemporary issues.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1 Recognize the focus of one or more of the social sciences and their main approaches.</li> <li>2 Identify some of the issues currently under study in the social sciences.</li> <li>3 Demonstrate the contribution of one or more of the social sciences to an understanding of contemporary issues.</li> </ol>	<p><b>Achievement Context</b></p> <p>Students will work alone.                      They will write an essay of approximately 750 words on the contribution of the social sciences to an understanding of contemporary issues.                      Documents and data from the field of social sciences may be used.</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Formulation of the focus specific to one or more of the social sciences.</li> <li>1.2 Description of the main approaches used in the social sciences.</li> <li>2.1 Association of issues with the pertinent areas of research in the social sciences.</li> <li>3.1 Presentation of contemporary issues by emphasizing the interpretation of the social sciences.</li> <li>3.2 Illustration of the interaction between certain social changes and the contribution of the social sciences.</li> </ol>

LEARNING ACTIVITIES

**Number of student-contact hours:** 45  
**Number of credits:** 2

COMPLEMENTARY GENERAL EDUCATION COMPONENT: SOCIAL SCIENCES

CODE: 000W

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p>	<p><b>Achievement Context</b></p>
<p>To analyze one of the major problems of our time using one or more social scientific approaches.</p>	<p>Students will work alone.                      They will write an essay of approximately 750 words on a topic related to human existence.                      Reference materials from the field of social sciences only apply.</p>



COMPLEMENTARY GENERAL EDUCATION COMPONENT:  
SCIENCE AND TECHNOLOGY

CODE: 000Y

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To resolve a simple problem by applying the basic scientific method.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1 Describe the main steps of the standard scientific method.</li> <li>2 Formulate a hypothesis designed to solve a simple scientific and technological problem.</li> <li>3 Verify a hypothesis by applying the fundamental principles of the basic experimental method.</li> </ol>	<p><b>Achievement Context</b></p> <p>Students will work alone or in groups. They will be given a scientific and technological problem that is not complex and that can be resolved by applying the standard scientific method. Common scientific instruments and reference materials (written or other) may be used.</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Organized list and brief description of the characteristics of the steps of the standard scientific method.</li> <li>2.1 Clear, precise description of the problem.</li> <li>2.2 Observance of the principles for formulating a hypothesis (observable and measurable nature of data, credibility, etc.).</li> <li>3.1 Pertinence, reliability and validity of the experimental method used.</li> <li>3.2 Observance of established experimental method.</li> <li>3.3 Appropriate choice and use of instruments.</li> <li>3.4 Clear, satisfactory presentation of results.</li> <li>3.5 Validity of the connections established between the hypothesis, the verification and the conclusion.</li> </ol>

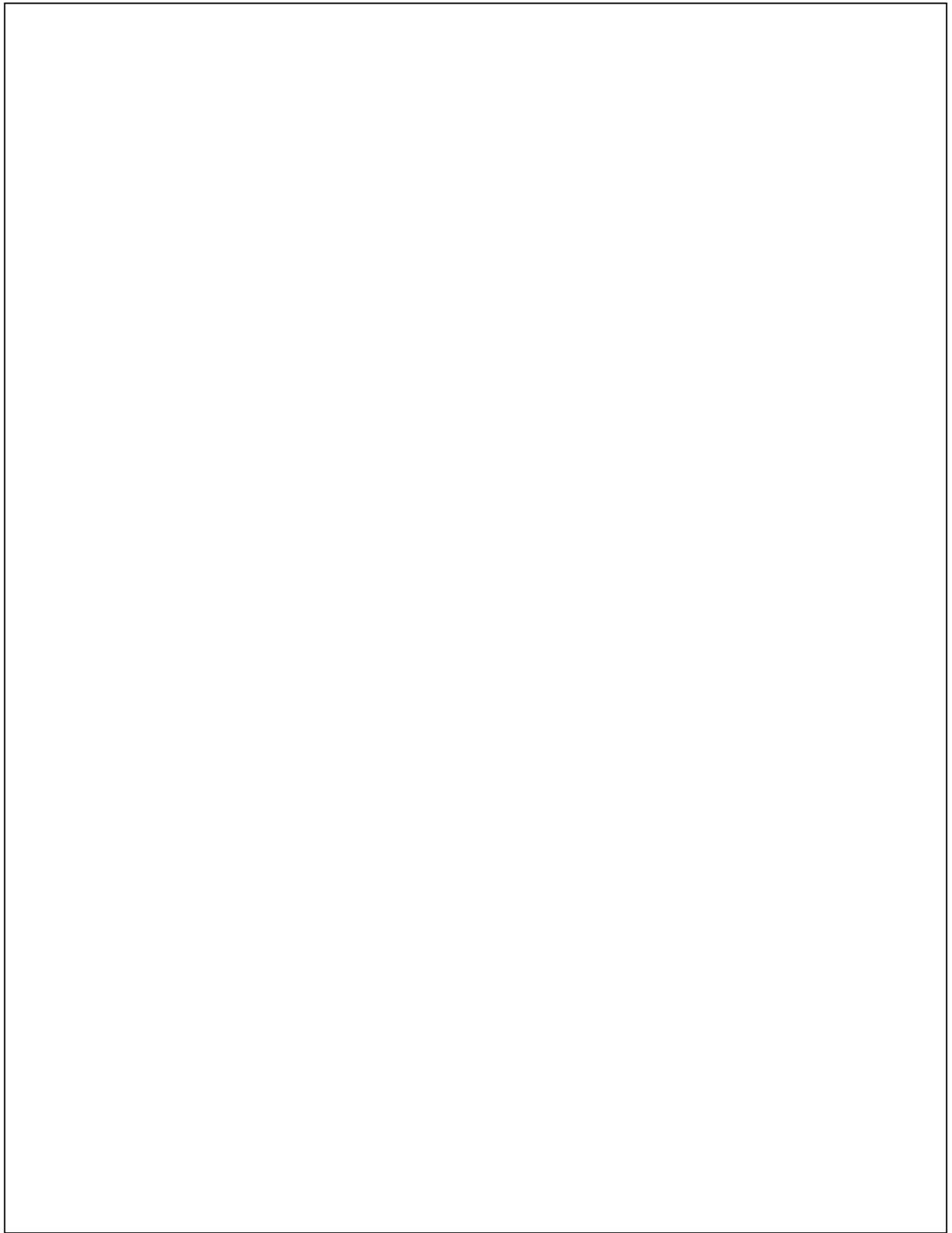
LEARNING ACTIVITIES

**Number of student-contact hours:** 45  
**Number of credits:** 2

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To communicate with limited skill* in a modern language.</p> <p>(*This refers to the limited use of language structures, grammar and vocabulary. This limitation varies depending on the complexity of the modern language.)</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1 Understand the meaning of a verbal message.</li> <li>2 Understand the meaning of a written message.</li> <li>3 Express a simple message verbally.</li> </ol>	<p><b>Achievement Context</b></p> <p>For modern languages that use the Latin alphabet, students will:                      have a conversation that includes at least 8 lines of dialogue                      write a text consisting of at least 8 sentences</p> <p>For modern languages that use a writing system other than the Latin alphabet, students will:                      have a conversation that includes at least 6 lines of dialogue                      write a text consisting of at least 6 sentences</p> <p>Students will be exposed to learning situations on familiar themes. Reference materials may be used.</p> <p><b>Performance Criteria</b></p> <p>The acquisition of a modern language requires an awareness of the culture of the people who use the language.</p> <ol style="list-style-type: none"> <li>1.1 Accurate identification of words and idiomatic expressions.</li> <li>1.2 Clear recognition of the general meaning of simple messages.</li> <li>1.3 Logical connection between the various elements of the message.</li> <li>2.1 Accurate identification of words and idiomatic expressions.</li> <li>2.2 Clear recognition of the general meaning of simple messages.</li> <li>2.3 Logical connection between the various elements of the message.</li> <li>3.1 Appropriate use of language structures in main and coordinate clauses.</li> <li>3.2 Appropriate application of grammar rules.</li> <li>3.3 Use of verbs in the present indicative.</li> <li>3.4 Appropriate use of basic vocabulary and idiomatic</li> </ol>

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p>	<p><b>Achievement Context</b></p>
<p>To communicate on familiar topics in a modern language.</p>	<p>Students will have a conversation that includes at least 15 lines of dialogue.                      They will write a text consisting of at least 20 sentences for Latin-alphabet languages.                      They will write a text consisting of at least 10 sentences for languages not using the Latin alphabet.                      Students will be exposed to:</p>







COMPLEMENTARY GENERAL EDUCATION COMPONENT:  
ART AND AESTHETICS

CODE: 0013

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b></p> <p>To consider various forms of art produced by aesthetic practices.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1 Develop an appreciation for the dynamics of the imagination in art.</li> <li>2 Describe art movements.</li> <li>3 Give a commentary on a work of art.</li> </ol>	<p><b>Achievement Context</b></p> <p>Students will work alone. They will use a specified work of art and write a commentary of approximately 750 words.</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Precise explanation of a creative process connected to the construction of an imaginary universe.</li> <li>2.1 Descriptive list of the main characteristics of three art movements from different eras, including a modern movement.</li> <li>3.1 Coherent organization of observations, including identification of four fundamental elements of form and structure related to the language used as well as a justified description of the meaning of the work of art.</li> </ol>

LEARNING ACTIVITIES

**Number of student-contact hours:** 45  
**Number of credits:** 2

COMPLEMENTARY GENERAL EDUCATION COMPONENT:  
ART AND AESTHETICS

CODE: 0014

OBJECTIVE

STANDARD

**Statement of the Competency**

To produce a work of art.







CODE: 0250	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To analyze the job function.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1. Describe the occupation and its employment conditions.</li>   <li>2. Examine the tasks and activities of the occupation.</li>   <li>3. Examine the skills and behaviours required to practise the occupation.</li> </ol>	<p><b>Achievement Context</b></p> <p>Working alone During research projects, corporate visits, conferences, trade shows, exhibits, etc. Using recent data on the practice of the occupation and on businesses in the sector</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Relevant information gathered</li> <li>1.2 Thorough examination of the general characteristics of the occupation and its employment conditions</li> <li>1.3 Identification of opportunities to start a business or work independently</li> <li>1.4 Identification of different types of work done in 3D animation and CGI</li> <li>1.5 Identification of businesses in 3D animation and CGI</li> <li>1.6 Identification of possible career paths</li> <li>1.7 Accurate description of the role and responsibilities of those working in film production and new media</li>   <li>2.1 Adequate examination of activities, the conditions under which they are performed, and the criteria for each task</li> <li>2.2 Accurate determination of the relative importance of each task</li> <li>2.3 Connection established between the steps in the production process and occupation-related tasks</li>   <li>3.1 Relevant connections established between skills and behaviours and the various occupation-related tasks</li> <li>3.2 Identification of the attitudes conducive to teamwork</li> <li>3.3 Identification of the rules and regulations governing the occupation</li> </ol>

CODE: 0250

4. Examine trends in 3D animation and CGI.

4.1 Accurate profile of the industry

4.2 Accurate determination of the factors affecting industry trends

CODE: 0251	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To work with major trends in visual and graphic arts.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1. Establish connections between a work of art and the context in which it was created.</li> <li>2. Analyze the pictorial or spatial language of a work of art.</li> <li>3. Determine the techniques used to produce a work of art.</li> </ol>	<p><b>Achievement Context</b></p> <p>Working alone In order to research and develop a visual concept for a creative project Using 2D works of art (e.g. paintings, prints, watercolours, or any other 2D medium or mode of expression), 3D works of art (e.g. sculptures, installations), applied art forms (e.g. advertising, design, fashion), sites and facilities (e.g. architectural and landscape projects) Using catalogues, audio-visual productions, museum and site visits, and print or electronic reference materials</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Identification of various trends in visual and graphic arts</li> <li>1.2 Identification of the sociocultural values that existed when the work was created</li> <li>1.3 Accurate assessment of the diversity of art outside its historical context</li> <li>2.1 Accurate determination of the plastic qualities of a work of art</li> <li>2.2 Accurate identification of the symbolism or message of a work of art</li> <li>2.3 Relevant connections established between the message or symbolism of a work of art and the artist's intentions</li> <li>2.4 Appropriate use of iconographic analysis methods</li> <li>2.5 Clear distinction of the main subjective factors affecting the way a work of art is perceived</li> <li>3.1 Identification of the media used to produce a work of art</li> <li>3.2 Identification of the technical processes used to produce a work of art</li> <li>3.3 Relevant connections established between the technical processes used and the pictorial or spatial organization of a work of art</li> </ol>

CODE: 0251

4. Develop a visual concept for a creative project.

- 4.1 Thorough search for conceptual elements
- 4.2 Originality of concept
- 4.3 Consistency of artistic process
- 4.4 Clear presentation of the concept

CODE: 0252	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To analyze a production.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1. Situate the production in its context.</li>   <li>2. Analyze the narrative structure and aesthetic qualities of the production.</li> </ol>	<p><b>Achievement Context</b></p> <p>Working alone In order to research and develop a 3D graphics project Based on different categories of works: films, 2D and 3D animation films (analog and digital), advertising films, video games, new media Using scripts, audio-visual equipment, and print or electronic reference materials</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Identification of the category, genre and school associated with the work</li> <li>1.2 Accurate description of the geographical, historical and sociocultural context surrounding the production</li> <li>1.3 Appropriate determination of the impact of the work on the film and new media industry</li>   <li>2.1 Identification of the aesthetic qualities of the production</li> <li>2.2 Accurate identification of the narrative elements</li> <li>2.3 Relevant connections established between a production's narrative elements and the mode of visual expression</li> <li>2.4 Relevant connections established between a production's narrative elements and sound processing</li> <li>2.5 Relevant connections established between the</li> </ol>

CODE: 0252

4. Plan how to develop a scenario for a project.

4.1 Accurate description of the steps involved in developing a scenario

4.2 Appropriate analysis of the structure of the scenario

4.3 Identification of logical connections between the action, the setting and the circumstances of the story

CODE: 0253

CODE: 0253

4. Draw the environment for a character.

- 4.1 Quality of the composition
- 4.2 Character correctly integrated into the environment
- 4.3 Compliance with rules of perspective
- 4.4 Accurate representation
- 4.5 Precise linework
- 4.6 Quality of the details
- 4.7 Harmonious rendering of volumes and colours
- 4.8 Proper use of the medium

5. Simplify the character representation.

- 5.1 Accurate representation of the subject's basic shape and characteristics
- 5.2 Clean, precise linework
- 5.3 Compliance with prescribed references
- 5.4 Proper use of the medium

CODE: 0254	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To acquire images.</p> <p><b>Elements of the Competency</b> 1. Search for images.</p>	<p><b>Achievement Context</b> Working alone Under the supervision of the director or administrator For a 3D graphics project In order to research and develop a subject Based on an idea or sketches, guidelines, distribution standards, copyright laws and legislation governing the industry Using a computer and peripherals, image acquisition tools (e.g. camera, video camera, scanner) and print or electronic reference materials</p> <p><b>Performance Criteria</b> 1.1 Appropriate search method 1.2 Thorough search 1.3 Compliance with instructions</p>

CODE: 0254

4. Scan images.

- 4.1 Appropriate resolution for the type of distribution medium
- 4.2 Appropriate scanning method
- 4.3 Appropriate image file format
- 4.4 Consideration of copyright laws limiting the use of images
- 4.5 Proper use of scanning equipment and software

5. Inventory images.

- 5.1 Appropriate image file format
- 5.2 Proper filing of image files
- 5.3 Rigorous application of filing method for image sequences

CODE: 0255	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To produce a concept sketch.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1. Analyze the context.</li> <li>2. Search for visual elements.</li> <li>3. Produce preliminary sketches.</li> <li>4. Have one's sketches approved.</li> </ol>	<p><b>Achievement Context</b></p> <p>Working alone Under the supervision of the producer For a 3D graphics project Based on a historical and geographical context, presentation standards, guidelines, copyright laws, professional ethics and ergonomic rules Using a computer and peripherals, image acquisition tools (e.g. camera, video camera, scanner) and print or electronic reference materials</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Accurate interpretation of contextual elements</li> <li>1.2 Appropriate association of a style to the contextual elements</li> <li>2.1 Thorough search</li> <li>2.2 Appropriate choice of images for the subject</li> <li>2.3 Accurate sources</li> <li>2.4 Methodical filing of images</li> <li>2.5 Compliance with copyright laws</li> <li>3.1 Presentation of a varied sample of relevant, original sketches</li> <li>3.2 Clear sketches</li> <li>3.3 Appropriate use of the preliminary research results</li> <li>3.4 Proper application of ergonomic rules</li> <li>4.1 Identification of all comments or instructions from persons in charge of production</li> <li>4.2 Adoption of a respectful, professional attitude</li> </ol>

CODE: 0255

5. Produce an illustration.

- 5.1 Appropriate choice and use of the presentation support and medium
- 5.2 Harmonious rendering of volumes and colours
- 5.3 Accurate representation
- 5.4 Precise linework
- 5.5 Quality of the details
- 5.6 Clean illustration
- 5.7 Compliance with presentation standards

6. Present the illustration.

- 6.1 Clear, accurate explanations
- 6.2 Attentiveness to comments from persons in charge of production
- 6.3 Notes taken on the modifications suggested
- 6.4 Thorough modification of the illustration based on the improvements suggested
- 6.5 Compliance with rules of professional ethics

CODE: 0256	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To process digital images.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1. Prepare images for processing.</li> <li>2. Process images.</li> <li>3. Adapt images according to the montage.</li> <li>4. Store one's work.</li> </ol>	<p><b>Achievement Context</b></p> <p>Working alone Under the supervision of the artistic director For a 3D graphics project Based on static and animated digital images, distribution standards, instructions and ergonomic rules Using a computer and peripherals and image processing software</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Appropriate image processing method for the project's distribution format and aesthetic qualities</li> <li>1.2 Methodical filing of digital source image</li> <li>2.1 Appropriate choice of image processing filters and algorithms</li> <li>2.2 Proper setup of automation</li> <li>2.3 Optimal use of image processing software</li> <li>2.4 Thorough verification of the quality of the finished image</li> <li>2.5 Rigorous correction of processing errors</li> <li>2.6 Proper application of ergonomic rules</li> <li>3.1 Accurate use of scale in accordance with the distribution medium</li> <li>3.2 Accurate colour calibration</li> <li>3.3 Methodical backup of images in a format suitable for the montage</li> <li>4.1 Proper filing, in accordance with established method</li> <li>4.2 Proper application of backup method established for the storage medium</li> </ol>









CODE: 0258

4. Build a virtual model of the set.

- 4.1 Appropriate choice of reference sources in accordance with the set design
- 4.2 Coherent image montage
- 4.3 Aesthetic quality of processed images
- 4.4 Quality of the finished image
- 4.5 Proper use of image processing software and computer equipment
- 4.6 Proper use of image acquisition and research tools
- 4.7 Compliance with copyright laws



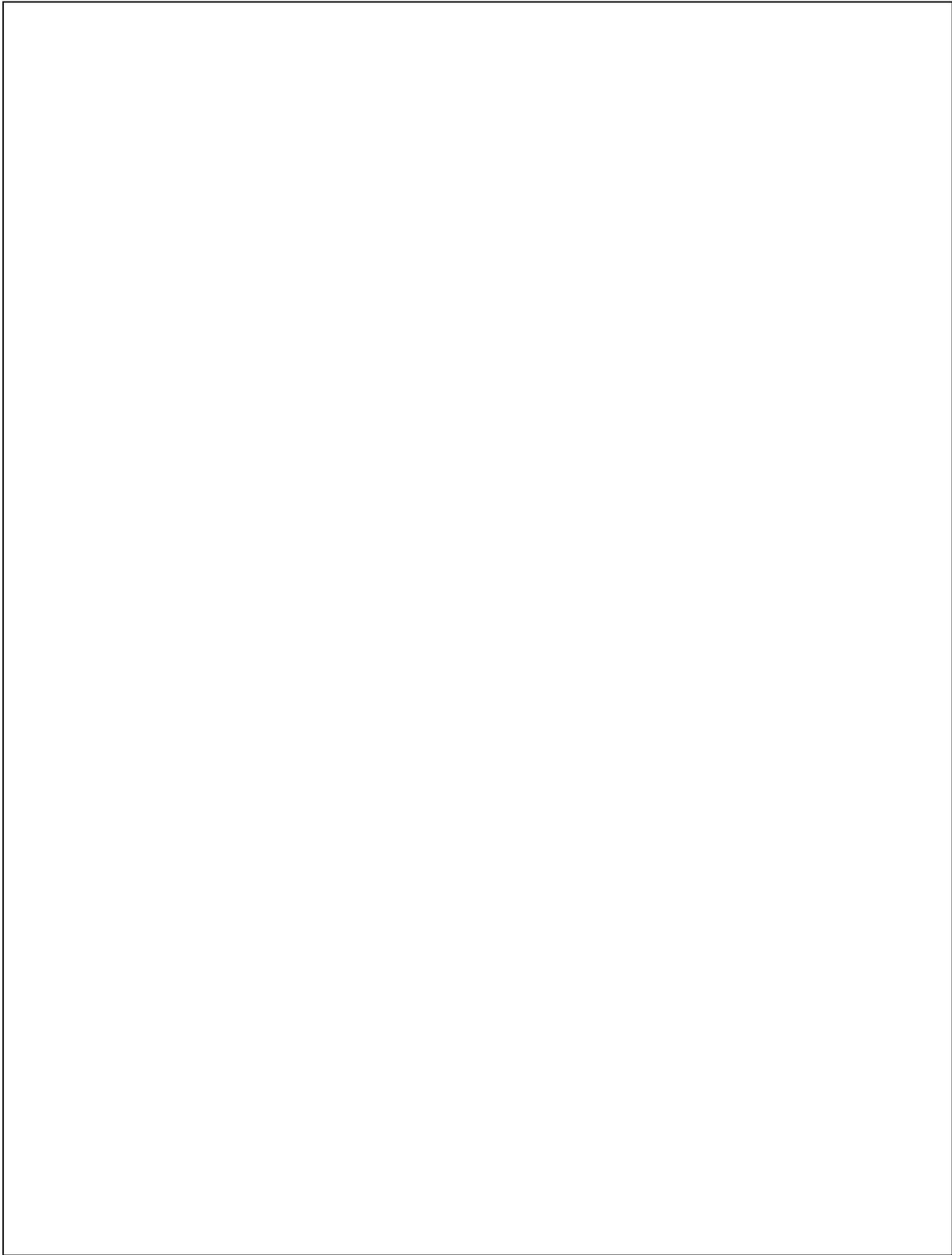




CODE: 025A

3. Build thumbnail models.

- 3.1 Appropriate choice of representation scale
- 3.2 Appropriate choice of modelling technique
- 3.3 Accurate representation of poses and expressions in accordance with preliminary sketches
- 3.4 Correct proportions
- 3.5 Quality of the modelling
- 3.6 Conformity with the production design
- 3.7 Compliance with work ,1nance





CODE: 025C

CODE: 025C	
3. Perform editing and nonlinear editing operations on media.	<ul style="list-style-type: none"> <li>3.1 Accurate animatics editing</li> <li>3.2 Appropriate choice of elements to be assembled</li> <li>3.3 Quality of sequencing and pace based on the storyboard and the recommendations of the artistic director</li> <li>3.4 Careful integration of audio segments</li> <li>3.5 Aesthetic quality of the finished images</li> <li>3.6 Appropriate image resolution in accordance with the type of media and the distribution and evaluation standards</li> <li>3.7 Proper use of editing equipment and software</li> <li>3.8 Correct application of editing and nonlinear editing techniques</li> </ul>
4. Composite image layers.	<ul style="list-style-type: none"> <li>4.1 Appropriate choice of elements to be assembled</li> <li>4.2 Appropriate choice of integration technique</li> <li>4.3 Quality of the integration of image layers</li> <li>4.4 Quality of the rendered image layer</li> <li>3.6 Appropriate image resolution in accordance with the type of media and the distribution and evaluation standards</li> </ul>

CODE: 025D	
OBJECTIVE	STANDARD
Statement of the Competency	Achievement Context

CODE: 025D

5. Place the objects in a scene.

- 5.1 Quality of the visual composition of the scene
- 5.2 Proper positioning of light sources for the scene
- 5.3 Appropriate framing of the subject
- 5.4 General quality of the mood of the scene

6. Render images.

- 6.1 Accurate calibration of rendering parameters
- 6.2 Appropriate ray tracing levels
- 6.3 Appropriate type of antialiasing applied to the image
- 6.4 Appropriate choice of resolution and format for the finished image
- 6.5 Rigorous division of the scene and renderings into elements to be assembled during compositing
- 6.6 Suitable duration of image rendering
- 6.7 Proper application of ergonomic rules

7. Check the quality of the rendering.

- 7.1 Thorough verification in accordance with quality criteria for finished images
- 7.2 Appropriate choice of correction method based on image quality, the number of images to correct and the delivery schedule
- 7.3 Accurate correction of the finished image
- 7.4 Appropriate choice of presentation medium for the finished image
- 7.5 Compliance with the established schedule and work methods

CODE: 025E	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To model props.</p> <p><b>Elements of the Competency</b> 1. Prepare the prop modelling.</p>	<p><b>Achievement Context</b> Working alone or in a team Under the supervision of the artistic director For a 3D graphics and a media compositing project Based on a script, a storyboard, 2D and 3D visual references, quality standards, work methods, a schedule, professional ethics and ergonomic rules Using a computer and peripherals, drawing materials, image processing software, 3D modelling software, image acquisition tools (e.g. camera, video camera, scanner), measuring instruments and basic geometric shapes</p> <p><b>Performance Criteria</b> 1.1 Accurate transposition of the prop's shape within a workspace. 1.2 Accurate identification of the prop's dimensions 1.3 Appropriate choice of scale 1.4 Accurate transposition of measurements in accordance with the scale 1.5 Appropriate choice of representational style 1.6 Accurate interpretation of visual references, script and storyboard 1.7 Creation of a work directory in conformity with the production method</p>

CODE: 025E

2. Generate the models.

- 2.1 Relevant modelling technique in accordance with the model's subsequent animation
- 2.2 Suitable flexibility of the model in accordance with subsequent manipulations and animation
- 2.3 Accurate determination of model components
- 2.4 Conformity with the design and proportions of the visual reference
- 2.5 Optimization of model components in accordance with the type of distribution medium and interactivity constraints
- 2.6 Appropriate assignment of model manipulation tools
- 2.7 Homogeneity of the model in relation to the design of other set elements

3. Create a hierarchy of the models.

- 3.1 Accurate hierarchy for the prop and its components
- 3.2 Construction of logical links between model components
- 3.3 Effectiveness of model manipulation tools
- 3.4 Flexible manipulation of the model and its components

4. Acquire and process textures.

- 4.1 Rigorous construction of prop materials in accordance with the visual reference and the finished image rendering
- 4.2 Acquisition of appropriate textures in accordance with visual references
- 4.3 Proper processing of textures to project onto the 3D model

5. Apply textures.

- 5.1 Appropriate texture mapping method onto the 3D prop
- 5.2 Careful texture application in accordance with the visual reference and the representation style
- 5.3 Proper application of ergonomic rules

CODE: 025E

6. Prepare images of models for approval.

- 6.1 Thorough testing of lighting and mood effects in accordance with the script and storyboard
- 6.2 Optimal adjustment of materials and textures based on different lighting effects
- 6.3 Appropriate choice of views
- 6.4 Appropriate calibration of rendering parameters
- 6.5 Aesthetic quality of image rendering

7. Store models and rendered images.

- 7.1 Methodical filing of model components in accordance with the production method
- 7.2 Storage of all scene elements, the final model and its components
- 7.3 Compliance with the established schedule and work methods
- 7.4 Compliance with rules of professional ethics



CODE: 025F	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To model sets.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>1. Interpret reference sources.</li>   <li>2. Prepare the set modelling.</li> </ol>	<p><b>Achievement Context</b></p> <p>Working alone or in a team Under the supervision of the artistic director For a 3D graphics and a media compositing project Based on a script, a storyboard, 2D and 3D visual references, quality standards, work methods, a schedule, professional ethics and ergonomic rules Using a computer and peripherals, drawing materials, image processing software, 3D modelling software, image acquisition tools (e.g. camera, video camera, scanner), measuring instruments and basic geometric shapes</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Accurate interpretation of building plans</li> <li>1.2 Accurate interpretation of visual references: photos, sketches and models</li> <li>1.3 Accurate interpretation of the script and storyboard</li>   <li>2.1 Appropriate choice of scale</li> <li>2.2 Accurate transposition of set elements onto a work diagram</li> <li>2.3 Accurate identification of the set's dimensions</li> <li>2.4 Accurate transposition of measurements in accordance with the scale</li> <li>2.5 Appropriate choice of representational style</li> <li>2.6 Creation of a work directory in conformity with the production method</li> </ol>

CODE: 025F

3. Generate the set models.

- 3.1 Relevant choice of set modelling technique in accordance with the subsequent animation
- 3.2 Suitable flexibility of the model in accordance with subsequent manipulations and animation
- 3.3 Accurate determination of set elements
- 3.4 Conformity with the proportions of the visual references
- 3.5 Optimization of set elements in accordance with the type of distribution medium and interactivity nces

CODE: 025F

6. Set up the scene.

- 6.1 Appropriate scale for subsequent scenes
- 6.2 Effective use of space, in accordance with the action, look and subsequent camera movements
- 6.3 Careful placement of set elements, in accordance with the subsequent scenes
- 6.4 Careful placement of lighting and mood effects
- 6.5 Proper calibration of cast shadows
- 6.6 Thorough testing of the scene in accordance with scene constraints
- 6.7 Proper application of ergonomic rules

7. Prepare images of models for approval.

- 7.1 Thorough testing of lighting and mood effects in accordance with the script and storyboard
- 7.2 Optimal adjustment of materials and textures based on different set lighting effects
- 7.3 Appropriate choice of views
- 7.4 Appropriate calibration of rendering parameters
- 7.5 Aesthetic quality of image rendering

8. Store models and rendered images.

- 8.1 Methodical filing of model components in accordance with the production method
- 8.2 Storage of all scene elements, the final set and its components
- 8.3 Compliance with the established schedule and work methods
- 8.4 Compliance with rules of professional ethics



CODE: 025G	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To model characters.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"> <li>Analyze the synopsis.</li> <li>Determine the model parameters for the characters.</li> </ol>	<p><b>Achievement Context</b></p> <p>Working alone Under the supervision of the animation studio director or the director For a 3D graphics and a media integration project Based on a script, a storyboard, character sketches and models, 2D and 3D visual references, quality standards, work methods, a schedule, professional ethics and ergonomic rules Using a computer and peripherals, image processing software, 3D modelling software, 2D and 3D scanners/digitizers, measuring instruments and basic geometric shapes</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"> <li>1.1 Accurate interpretation of the synopsis: sketches, photos, scale models</li> <li>1.2 Identification of extreme facial expressions and gestures for each character, in accordance with animation constraints</li> <li>2.1 Appropriate choice of components to model and texture</li> <li>2.2 Accurate determination of movement limits in accordance with the character design</li> </ol>

CODE: 025G

5. Apply bones to different characters.	5.1 Accurate determination of weighting values assigned to polygon vertices 5.2 Proper application of physical properties to the models 5.3 Rigorous assignment of motion control parameters to different components: direction, rotation, orientation, etc.
6. Model character expressions.	6.1 Accurate model of extreme facial expressions and body poses 6.2 Accurate modelling of lip-synch targets
7. Texture characters.	7.1 Determination of the physical properties of materials and textures: opacity, reflection, refraction, luminosity, roughness 7.2 Appropriate choice of textures to apply to each character component 7.3 Proper application of texture projection to all character components 7.4 Conformity with the production design 7.5 Compliance with distribution standards 7.6 Proper application of ergonomic rules
8. Check the quality of the model in terms of production.	8.1 Thorough testing of lighting and mood effects on the models 8.2 Careful adjustment of characters' colour tones and details, based on rough staging 8.3 Rigorous standardization of the characters' style with other elements
9. Render characters.	9.1 Accurate rendering parameters 9.2 Compliance with presentation standards and schedule 9.3 Thorough verification of rendered image 9.4 Compliance with the established schedule and work methods 9.5 Compliance with rules of professional ethics



CODE: 025H

4. Set animation keys.

- 4.1 Proper assignment of key to each element to be animated
- 4.2 Proper creation of a set of key poses for each animation and each model
- 4.3 Optimal application of 3D animation techniques:
  - transformation
  - deformation
  - kinematics
  - dynamics
  - rotoscoping
  - motion capture and scanning/digitization
  - constraints with respect to other objects
  - mathematical calculations and logical links
- 4.4 Proper use of different 3D animation software functions
- 4.5 Proper application of ergonomic rules

5. Manage in-between motion.

- 5.1 Rigorous manipulation of animation curves on models
- 5.2 Methodical adjustment of models' hierarchy
- 5.3 Precise adjustment of key poses
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CODE: 025J

3. Prepare the character animation.	3.1 Accurate determination of the timing and duration of each scene 3.2 Appropriate animation technique for each character, based on his or her personality, action and interpretation style 3.3 Accurate determination of key poses and secondary poses 3.4 Creation of a set of key poses and lip-synchs for each animated body part of a character
4. Place characters in a 3D scene.	4.1 Accurate scaling of each character in the 3D scene 4.2 Accurate starting position and orientation of characters for each 3D scene to be animated 4.3 Accurate identification of the limits of animation for each character 4.4 Accurate identification of zones of contact between the characters and the environment elements
5. Generate the character animation.	5.1 Accurate determination of key frames for each character's body parts 5.2 Thorough management of in-between frames
6. Synchronize animation and sound.	6.1 Accurate synchronization of movements, models and sound 6.2 Accurate synchronization of lip-synching and dialogue
7. Stage the characters' actions.	7.1 Optimal use of lighting sources 7.2 Appropriate framing, in accordance with the storyboard, action and background sequence 7.3 Thorough verification of the animation, in accordance with the lighting and framing of each background 7.4 Proper application of ergonomic rules





CODE: 025K	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To create digital visual effects.</p>	<p><b>Achievement Context</b> Working alone or in a team Under the supervision of the director In collaboration with the person in charge of photography direction and the different trades involved in traditional special effects For a 3D graphics and a media compositing</p>

CODE: 025K

3. Provide support to the director and camera crew during the production of visual effects.

- 3.1 Complete list of materials needed to shoot the visual effects
- 3.2 Detailed list of shooting sequence in view of subsequent assembly
- 3.3 Sustained assistance during shooting in order to meet postproduction requirements
- 3.4 Attentive, thorough viewing of stills
- 3.5 Effective, respectful collaboration with persons in charge of production, photography direction and postproduction during processing of finished images
- 3.6 Appropriate use of time and stress management techniques

4. Manage shoot-related elements.

- 4.1 Accurate identification of visual effects shots on





CODE: 025L	
OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To produce a 3D animation film.</p>	<p><b>Achievement Context</b>  Working alone  Under the supervision of producers  In collaboration with actors and film editors  For a 3D production  Based on distribution parameters, instructions regarding the genre and target audience, a budget, a work schedule, quality standards, work methods, and professional ethics  Using a computer and peripherals, drawing and modelling materials, audio-visual documents, image acquisition tools (e.g. camera, video camera, scanner), 3D animation software, editing and image processing software, 2D and 3D scanners/digitizers, a chronometer, and print or electronic reference materials.</p>

CODE: 025L

5. Create the scene.

- 5.1 Proper modelling of all scene elements
- 5.2 Thorough positioning of elements in each scene
- 5.3 Careful, consistent scene continuity
- 5.4 Animation of all scene elements
- 5.5 Precise synchronization of dialogues and animation

6. Produce the render.

- 6.1 Proper division of set elements into layers for assembly
- 6.2 Thorough testing of rendering
- 6.3 Accurate assignment of rendering parameters
- 6.4 Compliance with distribution standards

7. Perform postproduction operations.

- 7.1 Methodical filing of images for each shot
- 7.2 Careful execution of nonlinear editing, based on dialogues
- 7.3 Meticulous soundtrack integration
- 7.4 Correct insertion of subtitles and credits
- 7.5 Thorough verification of the quality of the editing
- 7.6 Thorough transfer of the edited product onto the distribution medium
- 7.7 Effective, respectful collaboration with the editor
- 7.8 Compliance with rules of professional ethics

CODE: 025M

OBJECTIVE	STANDARD
<p><b>Statement of the Competency</b> To prepare to enter the work force.</p> <p><b>Elements of the Competency</b></p> <ol style="list-style-type: none"><li>1. Draw up a personal inventory of skills.</li><li>2. Explore the job market in 3D animation and computer-generated imagery.</li><li>3. Produce a cover letter and a résumé.</li></ol>	<p><b>Achievement Context</b></p> <p>Working alone Using magazines, newspapers and job banks Using models of job search materials, dictionaries, grammar books and other reference tools</p> <p><b>Performance Criteria</b></p> <ol style="list-style-type: none"><li>1.1 Identification of personal strengths, weaknesses and limitations</li><li>1.2 Highlighting of personal and professional achievements</li><li>1.3 Preparation of a portfolio representative of one's skills and competencies</li><li>2.1 Use of relevant information sources</li><li>2.2 Demonstration of shrewdness, imagination and drive</li><li>2.3 Consideration of the hiring rules of the companies considered</li><li>2.4 Establishment of contacts with company representatives</li><li>2.5 Gathering of relevant information</li><li>2.6 Compilation of a list of potential employers and leads to follow</li><li>3.1 Compliance with presentation standards</li><li>3.2 Correct spelling and grammar</li><li>3.3 Inclusion of essential information</li><li>3.4 Relevance of the cover letter and résumé with respect to the position considered</li></ol>

CODE: 025M

4. Participate in an interview.

- 4.1 Gathering of information about the company prior to the interview
- 4.2 Compliance with rules of politeness and courtesy
- 4.3 Convincing show of interest in the position and ability to meet requirements
- 4.4 Concern for one's personal image
- 4.5 Effective communication with the interviewer
- 4.6 Appropriate portfolio presentation

## **EDUCATIONAL INTENTIONS OF GENERAL EDUCATION**

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### **GENERAL EDUCATION COMMON TO ALL PROGRAMS AND GENERAL EDUCATION ADAPTED TO PROGRAMS**

#### **English, Language of Instruction and Literature**

##### **General Education Common to All Programs**

The three sets of objectives and standards in English, Language of Instruction and Literature, pursue two general goals: mastery of the language of instruction and exploration of the riches of the literary heritage. Achievement of these goals is intended to bring the students to a college level of proficiency in the areas of reading, writing, listening and speaking. Building on the skills developed by students on completion of secondary school, the English program places a marked emphasis on written production and reading comprehension while at the same time consolidating listening and speaking skills.

The mastery of language skills will be achieved through regular and ongoing observance of the rules of correct writing and speaking and the production of texts supported by reading and the study of literature. Students will also be encouraged to develop an appreciation of literature by becoming acquainted with a number of significant literary works representative of various genres

## **Humanities**

Humanities, as part of the core curriculum, is intended to promote personal and social development and to give students a foundation that will help them understand their roles in contemporary society as members of the labour force, citizens, and individuals. The three sets of objectives and standards in Humanities propose common frameworks for understanding the experiences, ideas and values of humankind and their diversity. They are aimed at developing critical thinking, reinforcing the ancillary skills involved in careful reading, organized writing, and well-developed oral presentations, and, where appropriate, improving media and computer literacy. Once students have mastered the three-stage process of analysis, synthesis and evaluation, they will be able to reflect in an informed manner and to communicate what they have learned in an organized and coherent fashion.

## **Principles**

- 1) Humanities constitutes a thematic, multidisciplinary, at times transdisciplinary, exploration of humankind, including its accomplishments, failures, abilities, creations, ideas, and values.
- 2) Humanities helps students to recognize, define and classify information and provides them with common frameworks for diverse methods of analyzing, synthesizing and evaluating conceptions of society, knowledge and values.
- 3) Humanities aims to prepare students for common civic responsibilities and the exercise of rights.
- 4) Humanities pursues the general goal of developing critical thought, valuing it, and recognizing its limitations.

## **Outcome Objectives**

Students who have achieved the general education objectives in Humanities will be able to:

Describe, explain and organize main elements, ideas, values and implications of a world-view in a coherent fashion.

Compare world-views.

Recognize the basic elements in a specific example of the organization, transmission, and use of knowledge.

Define the dimensions, limits, and uses of knowledge in appropriate historical contexts.

Identify, organize and synthesize the salient elements of a particular example of knowledge.

Situate important ethical and social issues in their appropriate historical and intellectual contexts.

Explain, analyze and debate ethical issues in a personal and professional context.

## **Sequence of Objectives and Standards**

The first two sets of objectives and standards in Humanities, which are part of the general education component common to all programs, develop similar skills in a recursive fashion.

In the first set the emphasis is on how knowledge is defined, acquired, classified, transmitted, and applied. Students examine both messages and media to identify the strengths and limitations of each. Students learn to situate knowledge in a social, historical and personal context, a skill they will need in order to become lifelong learners.

The second set focuses on how individuals, groups, societies or nations organize ideas, perceptions and values into explanatory patterns. Students explore major ideas and value systems by which diverse individuals, groups, societies or nations seek to explain the world and their place in it.

The third set, which is part of the general education component adapted to programs, is aimed at deepening and reinforcing the critical thinking skills developed in the first two sets. It is, therefore, sequenced so that students can build on the critical skills, knowledge and insights developed in the first two sets. By situating these issues in their appropriate world-view and knowledge contexts, students develop a critical and autonomous approach to ethical values in general and to the values involved in their own fields of interest in particular. This final set also provides students with an opportunity to consolidate personal and social values.

## **Français, langue seconde**

L'enseignement du français, langue seconde, contribue à la formation fondamentale de la personne, en même temps qu'il a pour objet de lui permettre de communiquer efficacement avec ses concitoyens et concitoyennes.

## **Principes**

- 1) La maîtrise du français, langue seconde, est essentielle pour quiconque veut participer pleinement à la vie de la société québécoise, dont le français est la langue officielle. En conséquence, la formation générale en français, langue seconde, a pour finalité de rendre les étudiants et les étudiantes aptes à utiliser de façon efficace les moyens dont dispose la langue pour communiquer en société. À cette fin, ils devront acquérir des connaissances en vue de les déployer dans les formes de discours qu'il leur faudra pratiquer.

## Résultats attendus

Tout étudiant ou toute étudiante qui a atteint les objectifs de formation générale en français, langue seconde, pourra, selon son niveau de compétence, montrer :

- sur le plan des connaissances, qu'il ou elle :
  - sait faire une présentation orale structurée;
  - connaît les différentes formes du discours;
  - connaît les différentes techniques de lecture et d'écriture;
- sur le plan des habiletés, qu'il ou elle :
  - est capable de questionner, d'analyser, de juger, et d'argumenter en français;
  - est apte à entretenir des rapports sociaux et à partager la vie culturelle du Québec;
  - est apte à établir, à poursuivre et à pratiquer des rapports professionnels en français;
- sur le plan des attitudes, qu'il ou elle :
  - fait preuve d'ouverture par rapport aux différents aspects de la culture québécoise;
  - a conscience des différences et des similitudes entre sa culture d'origine et la culture québécoise francophone;
  - a la préparation voulue pour s'insérer dans la vie sociale et économique.

## Séquence des objectifs et des standards

Pour répondre aux divers besoins d'apprentissage des étudiants et des étudiantes du collégial, les ensembles en français, langue seconde, sont répartis selon quatre niveaux. Chacun de ces niveaux permet d'amener les étudiants et les étudiantes à interpréter et à produire des textes de plus ou moins grande complexité.

La formation générale en français, langue seconde, comporte deux ensembles prévus en séquence. Le premier, qui fait partie de la formation générale commune à tous les programmes, a pour objet de consolider les connaissances linguistiques déjà acquises et de les développer pour amener les étudiants et les étudiantes à communiquer de façon plus précise sur le plan tant du

## **Physical Education**

Physical Education, as part of the core curriculum, is aimed at promoting the development of the whole person and at encouraging students to acquire responsible behaviours with respect to their health and quality of life.

### **Principles**

- 1) Physical Education introduces students to different ways of being physically active with a view to making them aware that they are responsible for their health. Students learn concepts and acquire knowledge drawn from the literature and methodically apply them to physical activities apt to lead them to adopt behaviours characteristic of a healthy lifestyle.
- 2) Physical Education enables students to improve their proficiency in an activity and, in doing so, serves to increase their motivation and perseverance to remain physically active, and makes them aware of the contributing factors. To this end, students use a learning process designed to enhance their aptitudes for a given physical activity (i.e. their skills and attitudes).
- 3) Physical Education contributes to making students responsible for assuming responsibility for their health through the maintenance and improvement of their physical fitness and through the sensible practice of physical activity. Students learn to combine being physically active in an effective manner with factors which promote health.
- 4) Physical Education makes students aware of the importance of sharing the knowledge they have acquired. The pleasure and sense of well-being students get out of Physical Education classes motivate them to encourage others to be physically active and to adopt healthy behaviours.

### **Outcome Objectives**

Students who have achieved the general education objectives in Physical Education will be able to demonstrate:

- their knowledge of:
  - The relationship between physical activity, lifestyle and health based on the findings of scientific research.
  - The scientific principles for improving or maintaining one's fitness.
  - Ways to assess their abilities and needs with respect to activities which can enhance their health.
  - The rules, techniques and conditions involved in different types of physical activity.
  - A method for setting goals.

Apply the rules, techniques and conditions involved in different types of physical activity.

Set goals that are realistic, measurable, challenging, and situated within a specific time frame.

Improve their mastery of the basic techniques,

## **COMPLEMENTARY GENERAL EDUCATION**

### **Social Sciences**

The two sets of objectives and standards aim to familiarize students with the social sciences and their particular approach to the human condition.

The first set supports learning activities that allow students to look at one or more of the social sciences in relation to major contemporary issues: subjects studied in the social sciences; contribution of the social sciences to an understanding of contemporary issues; issues facing the

## **Mathematics Literacy and Computer Science**

In mathematics literacy and computer science, the two sets of objectives and standards are based on the educational intention of developing mathematical and computer culture.

The educational intention of the first set is to lead students to consider the place, role and evolution of these knowledges and tools in our society and to describe their different uses. It consists of general education about the language of mathematics or computers, and does not include specialized training.

The second set targets the understanding and use of the language of mathematics or computers for everyday purposes. This intention refers mainly to the concepts, tools and general uses of mathematical or computer language in daily life.

Since the objectives and standards for the field of mathematics literacy and computer science are of a general nature, they can be used to define various learning activities that foster development of competencies in mathematics or computer science, or in a combination of these two areas.

## **Art and Aesthetics**

In art and aesthetics, the educational intention is to allow students to acquire general cultural knowledge by exploring various forms of art in one or more artistic fields. This basic education is intended to develop an artistic sensibility through exposure to works of art or experimentation in an artistic medium. Furthermore, it aims to teach the fundamental elements of the language of art and to enable students to make connections between those elements.

In the context of the first set of objectives and standards, students are introduced to works of art from contemporary culture and from other periods. This allows them to develop an appreciation for the dynamics of the imagination in art and to learn methods of analyzing artistic production.

In the context of the second set, students engage in creative or interpretive activities in a given artistic medium. As well, students



