



Animation (Ontario College Advanced Diploma) Program Standard

*The approved program standard for
Animation program of instruction leading
to an Ontario College Advanced Diploma
delivered by Ontario Colleges of Applied
Arts and Technology (MTCU funding code
61901)*

Ministry of Training, Colleges and Universities
April 2014

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I. Introduction

This document is the Program Standard for the Animation Program of instruction leading to an Ontario College Advanced Diploma delivered by Ontario colleges of applied arts and technology (MTCU funding code 61901).

Development of System-Wide Program Standards

In 1993, the Government of Ontario initiated program standards development with the objectives of bringing a greater degree of consistency to college programming offered across the province, broadening the focus of college programs to ensure graduates have the skills to be flexible and to continue to learn and adapt, and providing public accountability for the quality and relevance of college programs.

The Program Standards and Evaluation Unit of the Ministry of Training, Colleges and Universities have responsibility for the development, review and approval of system-wide standards for programs of instruction at Ontario colleges of applied arts and technology.

Program Standards

Program standards apply to all similar programs of instruction offered by colleges across the province. Each program standard for a postsecondary program includes the following elements:

- **Vocational standard** (the vocationally specific learning outcomes which apply to the program of instruction in question),
- **Essential employability skills** (the essential employability skills learning outcomes which apply to all programs of instruction); and
- **General education requirement** (the requirement for general education in postsecondary programs of instruction).

Collectively, these elements outline the essential skills and knowledge that a student must reliably demonstrate in order to graduate from the program.

Individual colleges of applied arts and technology offering the program of instruction determine the specific program structure, delivery methods and other curriculum matters to be used in assisting students to achieve the outcomes articulated in the standard. Individual colleges also determine whether additional local learning outcomes will be required to reflect specific local needs and/or interests.

The Expression of Program Standards as Vocational Learning Outcomes

Vocational learning outcomes represent culminating demonstrations of learning and achievement. They are not simply a listing of discrete skills, nor broad statements of knowledge and comprehension. In addition, vocational learning outcomes are interrelated and cannot be viewed in isolation of one another. As such, they should be viewed as a comprehensive whole. They describe performances that demonstrate that significant integrated learning by graduates of the program has been achieved and verified.

Expressing standards as vocational learning outcomes ensures consistency in the outcomes for program graduates, while leaving to the discretion of individual colleges curriculum matters such as the specific program structure and delivery methods.

The Presentation of the Vocational Learning Outcomes

The **vocational learning outcome** statements set out the culminating demonstration of learning and achievement that the student must reliably demonstrate before graduation.

The **elements of the performance** for each outcome define and clarify the level and quality of performance necessary to meet the requirements of the vocational learning outcome. However, it is the performance of the vocational learning outcome itself on which students are evaluated. The elements of performance are indicators of the means by which the student may proceed to satisfactory performance of the vocational learning outcome. The elements of performance do not stand alone but rather in reference to the vocational learning outcome of which they form a part.

The Development of a Program Standard

In establishing the standards development initiative, the Government determined that all postsecondary programs of instruction should include vocational skills coupled with a broader set of essential skills. This combination is considered critical to ensuring that college graduates have the skills required to be successful both upon graduation from the college program and throughout their working and personal lives.

A program standard is developed through a broad consultation process involving a range of stakeholders with a direct interest in the program area, including employers, professional associations, universities, secondary schools and program graduates working in the field, in addition to students, faculty and administrators at the colleges themselves. It represents a consensus of

participating stakeholders on the essential learning that all program graduates should have achieved.

Updating the Program Standard

The Ministry of Training, Colleges and Universities will undertake regular reviews of the vocational learning outcomes for this program to ensure that the Animation (Ontario College Advanced Diploma) Program Standard remains appropriate and relevant to the needs of students and employers across the Province of Ontario. To confirm that this document is the most up-to-date release, please contact the Ministry of Training, Colleges and Universities at the address or email address noted on the inside cover page.

II. Vocational Standard

All graduates of Animation (Ontario College Advanced Diploma) programs have achieved the first twelve (12) vocational learning outcomes (VLOs) listed in the following pages, and two additional vocational learning outcomes (VLOs 13 and 14) if they are a graduates of Animation – 3D programs, in addition to achieving the essential employability skills (EES) learning outcomes and meeting the general education (GE) requirement.

Preamble

The animation industry has expanded a rapid rate and offers dynamic career opportunities for graduates of the Animation advanced diploma program in a number of areas such as television and film, gaming and other digital environments used for entertainment, information, education or training purposes.

Upon completion of the Animation advanced diploma program, graduates have a strong understanding of animation principles as well as competence in the production techniques required to complete a variety of complex tasks related to animation projects. They have developed proficiency in both the creative and technical processes involved in the creation of animation. They possess the knowledge and skills required to design, create and animate characters, objects and environments as well as execute believable animation sequences. They are adept at combining the use of classical art skills along with industry-standard technology and animation software to create animation products, and have learned to adapt quickly to evolving technological changes. Graduates have also acquired skills that help them to contribute to the execution of animation projects, during the initial planning or implementation stages, as well as to the evaluation of completed animation projects.

Graduates of the Animation advanced diploma program have developed proficiency in drawing, design and composition, as well as in storytelling and performance, all necessary ingredients in the creation of animation products. They have also developed skillsets, both technical and creative, that they may apply to several aspects of animation production, such as the creation and design of characters, props and environments, the preparation of storyboards and animatics* as well as the design of backgrounds and layouts. They have learned to apply principles relating to cinematography and art direction to enhance the overall quality of animation projects. Animation program graduates use digital asset management techniques and protocols required to function effectively within a pipeline*. They are also adept at creating, assembling, editing and presenting a demo reel* or portfolio in order to promote their skillsets and draw attention to their best animation work. In addition, graduates of programs which focus specifically on 3D animation will also possess skills pertaining to modeling*, rigging*, lighting and texturing of characters, objects or environments.

Graduates of the Animation advanced diploma program may seek employment opportunities in areas such as film and television, interactive media, video gaming, as well as Web production. Graduates may find employment in a number of entry-level capacities, such as character animators or designers, layout or background artists, composers, or possibly as modellers, riggers, or lighting or texture artists. Graduates may seek out permanent employment with established studios, or work collaboratively with other members of a production pipeline* on a project-to-project basis for various studios and production companies, both locally and abroad.

There are also opportunities for graduates to pursue further educational qualifications. Graduates should contact individual colleges and universities for further details.

Endnote: The Ontario Council on Articulation and Transfer (ONCAT) maintains the [provincial postsecondary credit transfer portal](#), ONTransfer and the Ontario Postsecondary Transfer Guide (OPTG)

**See Glossary*

Synopsis of Vocational Learning Outcomes

Animation (Ontario College Advanced Diploma)

The graduate has reliably demonstrated the ability to:

- 1. Design, create and animate objects and characters with naturalistic and expressive movements and poses.**
- 2. Design and create hand-drawn and/or computer-generated drawings using principles of art, design and composition.**
- 3. Select and use appropriate tools and technologies for the development of animation projects.**
- 4. Contribute to the planning, implementation and evaluation of animation projects.**
- 5. Plan, develop and execute a series of effective and believable animation sequences.**
- 6. Create and enhance the production of animation sequences and projects using a variety of principles and techniques related to cinematography and art direction.**
- 7. Use storytelling skills to create and enhance the development and execution of animation sequences.**
- 8. Use performance theory and skills to create and enhance animation.**
- 9. Design and produce layouts using perspective, composition and colour theory to enhance visual presentation and mood.**
- 10. Present and defend a visual concept to a target audience.**
- 11. Use computer skills and appropriate digital asset management techniques to function effectively within a production pipeline*.**
- 12. Develop, assemble and present a demo reel* or portfolio in a manner that meets current industry expectations, and highlights one's creativity, skills and proficiency with relevant animation software and related technologies.**

VLOs 13 and 14 are designated only for Animation programs that include a specific focus on 3D animation. Graduates of these programs will have reliably demonstrated VLOs 1-12, in addition to the following VLOs 13 and 14.

- 13. Model* and rig* objects, characters and background elements.**
- 14. Light and texture objects, characters and sets using a range of appropriate tools and techniques.**

Note: The learning outcomes have been numbered as a point of reference; numbering does not imply prioritization, sequencing, nor weighting of significance.

**See Glossary*

The Vocational Learning Outcomes

1. *The graduate has reliably demonstrated the ability to:*

Design, create and animate objects and characters with naturalistic and expressive movements and poses.

Elements of the Performance

- Apply knowledge and principles of aesthetics, anatomy (human and animal) and psychology (e.g., motivation, emotional state) to a character's appearance, gestures and expressions
- Apply knowledge and principles of motion study to the animation of objects
- Design and create characters and objects with shapes and proportions that are visually appealing or realistic
- Use character design elements (e.g., facial expression, silhouette, scale and body proportions, poses, clothing, props) to convey the character's personality, mood and reactions
- Create a range of simple or complex actions or movements that demonstrate an object's intended function;
- Use performance skills to interpret and recreate characters' actions, expressions and emotional state
- Gather video or reference material of character performances and objects, and analyze shape, proportion, positioning/ poses and movements
- Produce detailed thumbnail drawings to illustrate key poses and steps required to achieve the desired movement or motion cycle (e.g., run-walk cycle) to be animated
- Use storyboarding to illustrate the line of action
- Create inbetweens*, manually or digitally, to build transitions between key frames or extreme poses
- Determine and apply appropriate timing to achieve the desired effect for each movement or action
- Reproduce character or object shape, size, proportions and detail consistently and rapidly from one drawing or frame to another within a sequence
- Apply animation principles (e.g., squash and stretch, anticipation, staging, straight ahead action and pose-to-pose, follow-through and overlapping, slow in and slow out, use of arcs, exaggeration, timing, secondary action, etc.) to effectively animate characters and objects
- Draw individual and multiple characters from various angles to create model sheets*
- Use advanced functions of 2D and/or 3D animation software to animate characters and objects
- Depict realistic and/or stylized characters as required and appropriate for the intended purpose

2. *The graduate has reliably demonstrated the ability to:*

Design and create hand-drawn and/or computer-generated drawings using principles of art, design and composition.

Elements of the Performance

- Use drawing, sculpting and/or painting skills to translate visual concepts to paper and/or computer
- Use knowledge of human anatomy and life drawing skills to reproduce anatomically accurate depictions of the human form in action
- Select and use appropriate drawing tools and media (e.g., traditional drawing and/or painting mediums, paper, digital software tools, graphic tablet, stylus, etc.)
- Create drawings using design and composition principles effectively (e.g., unity, balance, scale/proportion, perspective, emphasis, pattern and rhythm, proximity, etc.)
- Select and use appropriate design elements (e.g., line, shape, space, colour, weight, contrast and texture) in drawings
- Create detailed line drawings of characters, props and environments
- Use life drawings, photographs and subjects as references to generate lifelike reproductions of objects, characters and environments
- Select and use appropriate tools and techniques (e.g., shadow, perspective, software functions, etc.) to add 3D volume to two-dimensional artwork
- Prepare preliminary thumbnail sketches to develop ideas for design concepts and drawings

3. *The graduate has reliably demonstrated the ability to:*

Select and use appropriate tools and technologies for the development of animation projects.

Elements of the Performance

- Use drawing and/or digital tools (e.g., pencil/paper, digital cameras, camcorders, etc.) to capture images of objects, people or scenery, performances, or other visual reference material, as needed
- Select and use appropriate computer hardware and peripherals (e.g., scanners, drawing tablets, etc.) to develop animation projects
- Use industry software proficiently (e.g., Maya, ToonBoom, Flash, 3dMax, etc.) to design, storyboard, model*, animate, edit, light, texture and/or render animation elements
- Select and use software (e.g., Flash, ToonBoom, AfterEffects, Photoshop) and equipment that is appropriate for the type of animation to be produced
- Use and assess the effectiveness of various information and communication technology tools (e.g., Web-based collaboration tools, Cloud-based applications, e-mail, mobile devices, etc.) for the purposes of research, data storage and sharing, collaboration and communication
- Develop strategies to keep abreast of various emerging industry tools and technologies

4. *The graduate has reliably demonstrated the ability to:*

Contribute to the planning, implementation and evaluation of animation projects.

Elements of the Performance

- Provide ideas and/or feedback at various stages of the project, when required
- Discuss the impact of one's own work on other stages of production
- Discuss project concept, story and idea development with colleagues during editorial meetings in order to solicit ideas or feedback, as required
- Assist in identifying milestones for each step of an animation project
- Use time management tools to plan and track task progress and project schedule
- Use project management tools (e.g., workflow charts, work plans, task logs, etc.) to guide, document, track and/or evaluate the progress of each project phase
- Develop strategies to work under pressure and meet deadlines, and perform tasks as assigned in a timely manner
- Collaborate with members of the project management team to monitor and evaluate project progress, solve problems as they arise, and make recommendations when needed
- Communicate with colleagues, supervisors and stakeholders to obtain information needed to inform the project planning, implementation and evaluation process
- Identify resources and tasks required to support the project
- Support and promote the responsible use of equipment and resources in order to maintain optimum functionality and remain within budgets
- Contribute to editorial meetings, group discussions and critiques, when required, by sharing ideas, providing feedback, addressing challenges and brainstorming solutions to enhance the overall quality of the project
- Communicate clear project instructions and information on resources and constraints to inform and guide the planning, implementation and/or evaluation process
- Participate in milestone debriefings and/or project post-mortems to assess the effectiveness of one's own work within the production pipeline* and/or to contribute to the evaluation of the overall project

5. *The graduate has reliably demonstrated the ability to:*

Plan, develop and execute a series of effective and believable animation sequences.

Elements of the Performance

- Organize group critiques to solicit feedback with a focus on enhancing the believability of the animation
- Create and develop sound story structures and scripts
- Edit scripts and sequences, where required, to enhance the final film or animation product
- Use storyboarding to present a series of animation sequences, from beginning to end
- Use performance skills to accurately recreate each scene of the story and verify authenticity of animation
- Gather and analyze reference material to enhance accuracy of objects, characters, backgrounds and movements
- Transfer details of individual frames to an exposure sheet* for reference purposes and for use by other members of the production pipeline*
- Select, record, edit and integrate sounds to be used within a film or animation product
- Synchronize character lip movements and sound or voice recordings
- Select and use appropriate software to create believable characters and props
- Design, plan and create staging and scene setups for individual scenes
- Apply advanced animation skills and techniques to create seamless animation sequences and movements

**See Glossary*

6. *The graduate has reliably demonstrated the ability to:*

Create and enhance the production of animation sequences and projects using a variety of principles and techniques related to cinematography and art direction.

Elements of the Performance

- Previsualize results obtained from different shot angles using storyboard panels
- Determine and direct appropriate camera placement, movement and angles (e.g., level, upward, downward, etc.) required to create shots
- Structure shots in a manner that leads the viewer's eye to the most important characters and objects within a scene environment
- Use staging techniques to encompass essential and secondary components in each scene and enhance the composition of key frames
- Determine use of appropriate cinematography and editing techniques to illustrate the passing of time and the pacing of actions
- Determine use of appropriate lighting, colour and shadow to create the desired mood and to lead the viewer's eye to the desired focal point
- Evaluate the use of composition in the achievement of visually balanced frames
- Use cinematography and art direction principles to make editing choices that enhance the overall quality of the animation project

7. *The graduate has reliably demonstrated the ability to:*

Use storytelling skills to create and enhance the development and execution of animation sequences.

Elements of the Performance

- Apply knowledge of genres, story mechanics, story structures and story arcs to develop and refine coherent story structures
- Use narrative skills to convey ideas and to develop dialogue for the purpose of storytelling
- Gather, create and analyze reference material (e.g., historical, social and cultural contexts, clothing and housing styles, colour palettes, etc.) to generate ideas for scene planning as well as appropriate character and background designs
- Create storyboards, from preliminary thumbnail sketches to a series of sequential story panels, to develop the story plot and visually present the story
- Execute a complete final animated sequence in the form of a story reel
- Apply knowledge of camera use (e.g., angles, moves) and its impact on the story
- Use terminology and knowledge relating to film structures and film editing skills to convey, revise and/or enhance the story
- Create and use animatics* that present the story
- Write short scripts that convey storylines, and describe characters and their emotions

**See Glossary*

8. *The graduate has reliably demonstrated the ability to:*

Use performance theory and skills to create and enhance animation.

Elements of the Performance

- Read and analyze text related to subject matter to be animated
- Conduct research to understand and create or build upon a character's backstory
- Identify and interpret subtext (i.e. motivation, goal behind the text)
- Emulate original voice, voice intonation and rhythm by study dialogue and its structure
- Develop knowledge of various acting theories, with a particular emphasis on method acting
- Use facial expressions and body language effectively to portray a range of emotions
- Perform and record scenes in a story to analyze, visualize and interpret body movements, actions and voice intonations of characters
- Analyze performance to verify appropriateness of timing, fluidity and weight of movements, etc.

9. *The graduate has reliably demonstrated the ability to:*

Design and produce layouts using perspective, composition and colour theory to enhance visual presentation and mood.

Elements of the Performance

- Analyze storyboards to determine the shapes, objects, characters and elements to include in backgrounds
- Use space effectively to achieve balance in the composition of layouts for interior and exterior scenes
- Arrange objects and characters in a manner that effectively demonstrates the camera's positioning and movement
- Apply principles of colour theory to the design and preparation of backgrounds, using colour palettes and tones to convey the desired mood, lighting and atmosphere
- Use detailed staging and scene planning to design and produce layouts that effectively communicate the story and each character's actions
- Design, produce and refine layouts for individual scenes and scene sequences
- Create background paintings, using various media and techniques (e.g., watercolour, acrylic) or appropriate software
- Create single-plane and multi-plane layouts (vertical, horizontal and diagonal)
- Use perspective to illustrate appropriate depth of field, angles and distortions
- Apply knowledge of camera techniques to layout designs

10. *The graduate has reliably demonstrated the ability to:*

Present and defend a visual concept to a target audience.

Elements of the Performance

- Present and explain choices for character and environment designs
- Use storyboards and animatics* to illustrate concepts and idea sequences
- Write short scripts to convey storylines
- Describe the story structure and the line of action from beginning to end
- Present one's concept in a credible and persuasive manner
- Solicit feedback and accept critique from peers, colleagues, supervisors and/or clients
- Integrate feedback and recommendations, when appropriate, and make adjustments to enhance the overall visual concept
- Explain and justify choices made with respect to concept design, storyline, sequencing, etc.

**See Glossary*

11. *The graduate has reliably demonstrated the ability to:*

Use computer skills and appropriate digital asset management techniques to function effectively within a production pipeline*.

Elements of the Performance

- Create hierarchical file structures to store, retrieve, catalogue, archive and save backups of digital files
- Use appropriate file and folder nomenclature strategies and protocols
- Transfer, copy and export files to and from different media sources or devices
- Create, load, modify and sort multiple versions of files
- Convert and deliver files in different media formats to meet the needs of the end user
- Use industry standard media storage technology and asset management software for organization, storage, retrieval, backup and archiving of files
- Compress video files to maximize storage and archiving capacity
- Select appropriate file formats, methods and tools for long-term file preservation
- Develop efficient data backup, archiving and recovery strategies
- Apply knowledge of operating systems (e.g., Windows, Mac) to the use of software, file formats and data file structures
- Use collaboration tools, such as software or online applications (e.g., text or video chat, IM, shared drives, etc.) to facilitate communication and team work
- Use productivity software (e.g., spreadsheet, database) to log tasks and progress notes, compile project information and track files and file versions

**See Glossary*

12. *The graduate has reliably demonstrated the ability to:*

Develop, assemble and present a demo reel* or portfolio in a manner that meets current industry expectations, and highlights one's creativity, skills and proficiency with relevant animation software and related technologies.

Elements of the Performance

- Build and maintain contact lists of animation industry professionals and studios in order to network and distribute demo reels* or portfolios for employment purposes
- Develop strategies to keep current with existing and emerging industry standard animation software tools and technologies as well as trends and animation industry activities (e.g., via use of social media, online forums, blogs, newsletters, etc.)
- Use resources associated with relevant professional associations (e.g., Digital Media Industry Ontario - DMIO) to establish a network of animation professionals and discover potential mentorship or employment opportunities
- Critique and evaluate the quality of one's works or projects in order to select the best samples of personal animation projects for inclusion in a demo reel* or portfolio
- Communicate and collaborate in a professional manner with industry professionals, peers and colleagues to enhance career development opportunities and work performance
- Establish an online presence using social media and Web resources to market skills and display a demo reel* or digital portfolio in order to reach a global audience (e.g., personal Web page, blog, YouTube, social media, etc.)
- Edit and assemble personal animation clips in a coherent, logical, well-organized and concise manner
- Add soundtracks and transitions, where appropriate, in a manner that enhances the overall presentation of the demo reel*
- Prepare and present detailed breakdown information of the demo reel* or portfolio contents to outline the specific personal work accomplished, as well as the skills and the tools used to produce it
- Solicit feedback to improve the overall quality of one's demo reel* or portfolio
- Save and distribute demo reel* or portfolio contents in a format that meets the recipient's needs and requirements (e.g., choice of medium, duration, etc.)

- Respect copyright and intellectual property rights (i.e. obtain permission to use any part of collaborative work within one's personal demo reel* or portfolio)

*See Glossary

VLOs 13 and 14 are designated only for Animation programs that include a specific focus on 3D animation. Graduates of these programs will have reliably demonstrated VLOs 13 and 14, in addition to VLOs 1-12.

13. *The graduate has reliably demonstrated the ability to:*

model* and rig* objects, characters and background elements.

Elements of the Performance

- Apply knowledge of anatomy and kinesiology (e.g., bone structure, muscle function) to the reproduction of facial expressions and movements of individual body parts
- Apply knowledge of locomotion and the mechanics of movement to the reproduction of moving objects
- Use sculpting skills to reproduce object or character shapes and volumes
- Use advanced functions of modeling software (e.g., Maya, 3dMax) to create proxies, mesh forms and skeletons
- Use and manipulate automated scripts to generate accurate models
- Use control points and polygons to generate and modify 3D models
- Use advanced rigging software functions to create complex control structures, such as joints and weights, that generate the movement required within a form
- Use performance skills to simulate movements to be reproduced
- Gather and analyze reference materials that illustrate movements to be reproduced
- Use automated software commands for frequently repeated modeling* and rigging* tasks

**See Glossary*

14. *The graduate has reliably demonstrated the ability to:*

Light and texture objects, characters and sets using a range of appropriate tools and techniques.

Elements of the Performance

- Use knowledge of lighting theory to produce different types of lighting and determine the effects of varying lighting intensities
- Apply advanced lighting principles and techniques (e.g., use of filters, shadow, light fog) to create and achieve desired lighting effects
- Select and use appropriate lighting equipment and accessories to create desired lighting effects
- Create various lighting set-ups (e.g., primary, secondary, 3-point lighting, etc.)
- Apply different types of natural and artificial lighting (night, day, indoor, outdoor)
- Use advanced directional lighting and shading techniques to express desired mood, state, feeling in characters and sets
- Use advanced software lighting tools and functions proficiently
- Apply colour to objects and characters using advanced painting tools and techniques
- Gather and analyze reference material to determine the texture characteristics of objects or surfaces to reproduce
- Apply detailed texture and surfacing effects to recreate a realistic appearance, consistency and density of actual objects, materials, surfaces, etc.
- Apply knowledge of technical properties of reflective materials such as glass and metals to accurately simulate transparency, reflection and shading
- Apply knowledge of UV mapping to unwrap, create and paint UV maps on different models

Glossary

Animatic(s): A previsualization tool used in 3D animation consisting of an assembled and timed sequence of storyboard panels and/or film clips which may be combined with sound; animatics help determine aspects such as blocking, staging, composition and timing of individual scenes as well as total duration; also known as “story reel” or “leica reel”, terms more commonly associated with 2D animation and use of storyboard panels.

Demo reel: A portfolio collection of works (e.g., drawings, paintings, sketches and/or videos) created by an artist or animator and presented in a movie format used for promotion and to highlight best work and areas of strength.

Exposure sheet: A sheet providing instructions on action and dialogue breakdown, as well as timing/exposure, backgrounds, movement, and fielding; it may also include detailed technical instructions for the preparation of a scene (e.g., use of cameras and sound synchronization); also known as an “x-sheet” or “dope sheet” (colloq.).

Inbetween: In traditional or 2D animation, an “inbetween” may consist of a drawing or a series of drawings that illustrate the transition of action between two key or extreme drawings; in 3D animation, an “inbetween” typically refers to digitally-produced frames that demonstrate transition positions and their timing between key poses within a timeline.

Model (v.): To design or create 2D or 3D shapes based on drawings and/or replicas of objects, characters or environments using digital tools and software.

Model sheet: A character reference sheet that illustrates character poses from different angles (e.g., front, profile, back, three-quarter) and various facial expressions which may also include notes on character construction, design, poses, proportions, colour and line weights.

Production pipeline: All of the process steps and tools required to produce a finished 2D or 3D animation product from start to finish, usually in three key stages: pre-production (creating storyboards, layouts, designs, model sheets, animatics); production (creating models or rigs; applying colour, lighting or texture; animating); post-production (compositing, rendering, sound/video editing).

Rig (v.): To prepare a model for animation by using software to set up an underlying skeleton or frame structure, including constraints, controllers

and/or kinematic systems, and linking it to a rig or mesh form of the model.

III. Essential Employability Skills

All graduates of the Animation (Ontario College Diploma) program of instruction must have reliably demonstrated the essential employability skills learning outcomes listed on the following pages, in addition to achieving the vocational learning outcomes and meeting the general education requirement.

Context

Essential Employability Skills (EES) are skills that, regardless of a student's program or discipline, are critical for success in the workplace, in day-to-day living and for lifelong learning.

The teaching and attainment of these EES for students in, and graduates from, Ontario's colleges of applied arts and technology are anchored in a set of three fundamental assumptions:

- these skills are important for every adult to function successfully in society today;
- our colleges are well equipped and well positioned to prepare graduates with these skills;
- these skills are equally valuable for all graduates, regardless of the level of their credential, whether they pursue a career path, or they pursue further education.

Skill Categories

To capture these skills, the following six categories define the essential areas where graduates must demonstrate skills and knowledge.

- Communication
- Numeracy
- Critical Thinking & Problem Solving
- Information Management
- Interpersonal
- Personal

Application and Implementation

In each of the six skill categories, there are a number of defining skills, or sub skills, identified to further articulate the requisite skills identified in the main skill categories. The following chart illustrates the relationship between the skill categories, the defining skills within the categories and learning outcomes to be achieved by graduates from all postsecondary programs of instruction that lead to an Ontario College credential.

EES may be embedded in General Education or vocational courses, or developed through discrete courses. However these skills are developed, all graduates with Ontario College credentials must be able to reliably demonstrate the essential skills required in each of the six categories.

SKILL CATEGORY	DEFINING SKILLS: Skill areas to be demonstrated by graduates:	LEARNING OUTCOMES: The levels of achievement required by graduates. The graduate has reliably demonstrated the ability to:
COMMUNICATION	<ul style="list-style-type: none"> • Reading • Writing • Speaking • Listening • Presenting • Visual literacy 	<ol style="list-style-type: none"> 1. communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience. 2. respond to written, spoken or visual messages in a manner that ensures effective communication.
NUMERACY	<ul style="list-style-type: none"> • Understanding and applying mathematical concepts and reasoning • Analyzing and using numerical data • Conceptualizing 	<ol style="list-style-type: none"> 1. execute mathematical operations accurately.
CRITICAL THINKING & PROBLEM SOLVING	<ul style="list-style-type: none"> • Analyzing • Synthesizing • Evaluating • Decision making • Creative and innovative thinking 	<ol style="list-style-type: none"> 1. apply a systematic approach to solve problems. 2. use a variety of thinking skills to anticipate and solve problems.

SKILL CATEGORY	DEFINING SKILLS: Skill areas to be demonstrated by graduates:	LEARNING OUTCOMES: The levels of achievement required by graduates. The graduate has reliably demonstrated the ability to:
INFORMATION MANAGEMENT	<ul style="list-style-type: none"> • Gathering and managing information • Selecting and using appropriate tools and technology for a task or a project • Computer literacy • Internet skills 	<ol style="list-style-type: none"> 1. <i>locate, select, organize and document information using appropriate technology and information systems.</i> 2. <i>analyze, evaluate and apply relevant information from a variety of sources.</i>
INTERPERSONAL	<ul style="list-style-type: none"> • Teamwork • Relationship management • Conflict resolution • Leadership • Networking 	<ol style="list-style-type: none"> 1. <i>show respect for the diverse opinions, values, belief systems and contributions of others.</i> 2. <i>interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.</i>
PERSONAL	<ul style="list-style-type: none"> • Managing self • Managing change and being flexible and adaptable • Engaging in reflective practices • Demonstrating personal responsibility 	<ol style="list-style-type: none"> 1. <i>manage the use of time and other resources to complete projects.</i> 2. <i>take responsibility for one's own actions, decisions and their consequences.</i>

IV. General Education Requirement

All graduates of the Animation (Ontario College Diploma) program must have met the general education requirement described on the following pages, in addition to achieving the vocational and essential employability skills learning outcomes.

Requirement

The General Education Requirement for programs of instruction is stipulated in the Credentials Framework (Appendix A in the Minister's Binding Policy Directive *Framework for Programs of Instruction*).

In programs of instruction leading to either an Ontario College Diploma or an Ontario College Advanced Diploma, it is required that graduates have been engaged in learning that exposes them to at least one discipline outside their main field of study and increases their awareness of the society and culture in which they live and work. This will typically be accomplished by students taking 3 to 5 courses (or the equivalent) designed discretely and separately from vocational learning opportunities.

This general education learning would normally be delivered using a combination of required and elective processes.

Purpose

The purpose of General Education in the Ontario college system is to contribute to the development of citizens who are conscious of the diversity, complexity and richness of the human experience; who are able to establish meaning through this consciousness; and who, as a result, are able to contribute thoughtfully, creatively and positively to the society in which they live and work.

General Education strengthens students' essential employability skills, such as critical analysis, problem solving and communication, in the context of an exploration of topics with broad-based personal and/or societal importance.

Themes

The themes listed below will be used to provide direction to colleges in the development and identification of courses that are designed to fulfill the General Education Requirement for programs of instructions.

Each theme provides a statement of Rationale and offers suggestions related to more specific topic areas that could be explored within each area. These suggestions are neither prescriptive nor exhaustive. They are included to provide guidance regarding the nature and scope of content that would be judged as meeting the intent and overall goals of General Education.

1. Arts in Society:

Rationale:

The capacity of a person to recognize and evaluate artistic and creative achievements is useful in many aspects of his/her life. Since artistic expression is a fundamentally human activity, which both reflects and anticipates developments in the larger culture, its study will enhance the student's cultural and self-awareness.

Content:

Courses in this area should provide students with an understanding of the importance of visual and creative arts in human affairs, of the artist's and writer's perceptions of the world and the means by which those perceptions are translated into the language of literature and artistic expression. They will also provide an appreciation of the aesthetic values used in examining works of art and possibly, a direct experience in expressing perceptions in an artistic medium.

2. Civic Life:

Rationale:

In order for individuals to live responsibly and to reach their potential as individuals and as citizens of society, they need to understand the patterns of human relationships that underlie the orderly interactions of a society's various structural units. Informed people will have knowledge of the meaning of civic life in relation to diverse communities at the local, national and global level and an awareness of international issues and the effects of these on Canada, as well as Canada's place in the international community.

Content:

Courses in this area should provide students with an understanding of the meaning of freedoms, rights and participation in community and public life, in addition to a working knowledge of the structure and function of various levels of government (municipal, provincial, national) in a Canadian and/or in an international context. They may also provide an historical understanding of major political issues affecting relations between the various levels of government in Canada and their constituents.

3. Social and Cultural Understanding:

Rationale:

Knowledge of the patterns and precedents of the past provide the means for a person to gain an awareness of his or her place in contemporary culture and society. In addition to this awareness, students will acquire a sense of the main currents of their culture and that of other cultures over an extended period of time in order to link personal history to the broader study of culture.

Content:

Courses in this area are those that deal broadly with major social and cultural themes. These courses may also stress the nature and validity of historical evidence and the variety of historical interpretation of events. Courses will provide the students with a view and understanding of the impact of cultural, social, ethnic or linguistic characteristics.

4. Personal Understanding:

Rationale:

Educated people are equipped for life-long understanding and development of themselves as integrated physiological and psychological entities. They are aware of the ideal need to be fully functioning persons: mentally, physically, emotionally, socially, spiritually and vocationally.

Content:

Courses in this area will focus on understanding the individual: his or her evolution; situation; relationship with others; place in the environment and universe; achievements and problems; and his or her meaning and purpose. They will also allow students the opportunity to study institutionalized human social behaviour in a systematic way. Courses fulfilling this requirement may be oriented to the study of the individual within a variety of contexts.

15. Science and Technology:

Rationale:

Matter and energy are universal concepts in science, forming a basis for understanding the interactions that occur in living and non-living systems in our universe. Study in this area provides an understanding of the behaviour of matter that provides a foundation for further scientific study and the creation of broader understanding about natural phenomena

Similarly, the various applications and developments in the area of technology have an increasing impact on all aspects of human endeavour and have numerous social, economic and philosophical implications. For example, the operation of computers to process data at high speed has invoked an interaction between machines and the human mind that is unique in human history. This and other technological developments have a powerful impact on how we deal with many of the complex questions in our society.

Content:

Courses in this area should stress scientific inquiry and deal with basic or fundamental questions of science rather than applied ones. They may be formulated from traditional basic courses in such areas of study as biology, chemistry, physics, astronomy, geology or agriculture. As well, courses related to understanding the role and functions of computers (e.g., data management and information processing) and assorted computer-related technologies should be offered in a non-applied manner to provide students with an opportunity to explore the impact of these concepts and practices on their lives.