

Fanshawe College

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Documentation (Approvals etc...)

3D Animation and Character Design

2008

FANS 01273 - 3D Animation & Character Design CVS Application

Fanshawe College

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Credentials Validation Service

Service de validation des
titres de compétence

ONTARIO COLLEGES OF APPLIED ARTS AND TECHNOLOGY CREDENTIALS VALIDATION SERVICE

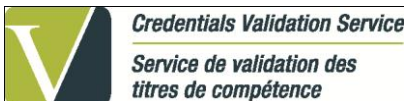
APPLICATION FOR PROGRAM VALIDATION

This proposal will be sent to MTCU for Approval for Funding X YES

1. College: Fanshawe College
2. College contact person responsible for this proposal: Name: Dr. Terry Boyd Title: Dean, Faculty of Arts, Media and Design. Telephone: 519.452.4430 x 4583 Electronic mail: TBoyd@fanshawec.ca
3. Proposed Program Title: 3D Animation & Character Design
4. Proposed Credential: (please indicate below) Local Board Approved Certificate <input type="checkbox"/> Ontario College Certificate <input type="checkbox"/> Ontario College Diploma <input type="checkbox"/> Ontario College Advanced Diploma <input type="checkbox"/> Ontario College Graduate Certificate X
5. Proposed Program Outcomes: Please complete and attach the two Program Maps (Appendix A - Form 1 and Form 2)
6. Proposed Program Description: Please complete and attach the Program Description Form (Appendix B)
7. Proposed Program Curriculum: Please complete and attach the Program Curriculum Form (Appendix C)
8. Date of Submission: December 18, 2008
9. Date of CVS Response: December 18, 2008
10. Validation Decision: <input type="checkbox"/> Proposal Validated (APS Number: FANS 01273) <hr/> Signed on behalf of CVS: Tim Klassen

Send the completed form and required appendices to: klassen@collegecvcs.on.ca For detailed information on how to complete the Application for Program Validation, please refer to the Instructions for Submission document. For any additional information contact: College Credential Validation Service, 655 Bay Street, Suite 400, Toronto, ON M5G 2K4; or by

telephone at (416) 596-8799



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APPENDIX A - PROGRAM MAPS

(Vocational Program Outcomes & Essential Employability Skills Outcomes)

Vocational Program Learning Outcomes:

Form 1(attached) is provided to assist you in mapping your proposed program vocational learning outcomes against existing vocational outcomes found in either Provincial Program Standards or in Provincial Program Descriptions.

Where there is a relevant Provincial Program Standard, the approved Vocational Learning Outcomes must appear in the first column, followed by your proposed program vocational learning outcomes.

Where there are no Provincial Program Standards, the first column will contain program outcomes from the Provincial Program Description. Again, your proposed program vocational learning outcomes will be added in the middle column.

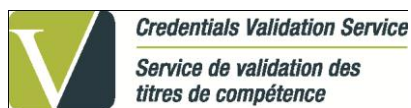
NOTE: *Both these types of documents can be obtained from staff at the CVS or at the Colleges Branch, MTCU.*

The last column will contain a list of the relevant curriculum proposed in your program to address the outcome in a manner that ensures the graduate will have reliably demonstrated the required skill or ability. Course numbers or course codes, corresponding to those provided in your list of courses (Appendix C), are sufficient in this column.

Essential Employability Skills Outcomes:

A mapping of the Essential Employability Skills (EES) will be done on Form 2 (attached).

The instructions / requirements for this map are the same as for the Vocational Program Map. The first three columns contain the approved skill categories, the defining skills, and the EES learning outcomes. The last column will contain the proposed curriculum (as listed in Appendix C) that will ensure the meeting of these outcomes.



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**APPENDIX A - PROGRAM MAPS`
Form 1 - Vocational Program Outcomes**

PROVINCIAL PROGRAM STANDARD VOCATIONAL LEARNING OUTCOMES / PROVINCIAL PROGRAM DESCRIPTION OUTCOMES MCU Code: 79403	PROPOSED PROGRAM VOCATIONAL LEARNING OUTCOMES FOR ONTARIO COLLEGE GRADUATE CERTIFICATE 3D ANIMATION & CHARACTER DESIGN	COURSE TITLE / COURSE CODE (From Appendix C)
1. To design and develop commercial quality storyboards for the successful solutions to a variety of communications problems in the private and public sector, e.g. promotion, advertising, commercials, film and video production;	1. Execute creative concepts and ideas through a variety and combination of techniques including hand drawn, computer generated, 2D/ 3D storyboards and animatics.	Life Drawing & Character Study 1 (LDCS1)
2. To build three-dimensional computer models of a wide variety of real-world and simulated objects on advanced, interactive animation workstations;	2. Create sophisticated models for the entertainment, medical, and architectural industries. 3. Create 3D characters ranging from life-like and anatomically correct, to cartoon and anime styles.	Introduction to Animation Animation for Characters 2 Modelling Foundation 1 Advanced Modelling 2 Motion Capture 1
3. To modify three dimensional models with control of surface properties, lighting models and virtual camera definition;	4. Combine texture mapping, shaders, lighting environments, animating cameras and 'rigs' for 3D models and characters in animation sequences.	Introduction to Animation Animation for Characters 2 Texture, Light & Rendering Motion Capture 1

<p>4. To use an interactive graphics workstation to design and develop two dimensional imagery for animation as well as preparing two dimensional images for mapping into three dimensional models and backgrounds;</p>	<p>5. Synthesize a wide variety of digital effects in the creation of environment and creature materials and textures.</p>	<p>Texture, Light & Rendering Animation for Characters 2 Modelling Foundation 1 Advanced Modelling 2 Motion Capture 1</p>
<p>5. To produce a three-dimensional computer animation video with control over the complex motion and temporal dynamics of articulated objects;</p>	<p>6. Apply 3D techniques that demonstrate realistic motion and a full range of emotion in animated characters.</p>	<p>Introduction to Animation Animation for Characters 2 Modelling Foundation 1 Advanced Modelling 2 Motion Capture 1</p>
<p>6. To Demonstrate skill in the use of emerging technologies such as Motion Capture, Green Screen etc.</p>	<p>7. Incorporate 3D animated characters into composited backgrounds utilizing special effects.</p>	<p>Introduction to Animation Animation for Characters 2 Modelling Foundation 1 Advanced Modelling 2 Motion Capture 1</p>
<p>7 To use a video editing system to change, modify, and complete a computer animation sequence;</p>	<p>8. Utilize a variety of digital applications including video and audio editing software and technologies.</p>	<p>Introduction to Animation Animation for Characters 2 Modelling Foundation 1 Advanced Modelling 2 Texture, Light & Rendering</p>
<p>8. To examine the technical characteristics of state-of-the-art computer animation systems and advise in the process of system evaluation and purchase.</p>	<p>9. Integrate sophisticated technologies into 3D animated films, videos and games.</p>	<p>All courses</p>

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**APPENDIX A - PROGRAM MAPS
 Form 2 - Essential Employability Skills Outcomes**

SKILL CATEGORIES	DEFINING SKILLS Skill areas to be demonstrated by the graduates	ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES The graduate has reliably demonstrated the ability to:	COURSE TITLE / COURSE CODE (From Appendix C)
COMMUNICATION	<ul style="list-style-type: none"> • Reading • Writing • Speaking • Listening • Presenting • Visual Literacy 	<ul style="list-style-type: none"> ➤ communicate clearly, concisely, and correctly in the written, spoken, and visual form that fulfils the purpose and meets the needs of the audience 	Life Drawing & Character Study Modeling Foundation Anatomy & Character Study Advanced Modeling Project Development Thesis Digital Character Project Thesis
		<ul style="list-style-type: none"> ➤ respond to written, spoken, or visual messages in a manner that ensures effective communication 	Life Drawing & Character Study Modeling Foundation Anatomy & Character Study Advanced Modeling Project Development Thesis Digital Character Project Thesis
NUMERACY	<ul style="list-style-type: none"> • Understanding and applying mathematical concepts and reasoning 	<ul style="list-style-type: none"> ➤ execute mathematical operations accurately 	Life Drawing & Character Study Introduction to Animation for Characters

SKILL CATEGORIES	DEFINING SKILLS Skill areas to be demonstrated by the graduates	ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES The graduate has reliably demonstrated the ability to:	COURSE TITLE / COURSE CODE (From Appendix C)
	<ul style="list-style-type: none"> • Analysing and using numerical data • Conceptualizing 		Animation for Characters 2 Modelling Foundation Advanced Modelling Motion Capture 1 Texture, Light & Rendering 1 Anatomy & Character Study
CRITICAL THINKING & PROBLEM SOLVING	<ul style="list-style-type: none"> • Analysing • Synthesizing • Evaluating • Decision-making • Creative and innovative thinking 	<ul style="list-style-type: none"> ➤ apply a systematic approach to solve problems 	Life Drawing & Character Study Modeling Foundation Introduction to Animation for Characters Motion Capture 1 Texture, Light & Rendering 1 Anatomy & Character Study Advanced Modeling Animation for Characters 2
		<ul style="list-style-type: none"> ➤ use a variety of thinking skills to anticipate and solve problems 	Life Drawing & Character Study Modeling Foundation Motion Capture 1 Texture, Light & Rendering 1

SKILL CATEGORIES	DEFINING SKILLS Skill areas to be demonstrated by the graduates	ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES The graduate has reliably demonstrated the ability to:	COURSE TITLE / COURSE CODE (From Appendix C)
			Anatomy & Character Study Advanced Modeling Animation for Characters 2 Project Development Thesis Digital Character Project Thesis
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 	<ul style="list-style-type: none"> ➤ locate, select, organize, and document information using appropriate technology and information systems 	Motion Capture 1 Texture, Light & Rendering 1 Animation for Characters 2 Project Development Thesis Digital Character Project Thesis
		<ul style="list-style-type: none"> ➤ analyse, evaluate, and apply relevant information from a variety of sources 	Life Drawing & Character Study Modeling Foundation 1 Introduction to Animation for Characters Motion Capture 1 Texture, Light & Rendering 1 Anatomy & Character Study Advanced Modeling

SKILL CATEGORIES	DEFINING SKILLS Skill areas to be demonstrated by the graduates	ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES The graduate has reliably demonstrated the ability to:	COURSE TITLE / COURSE CODE (From Appendix C)
INTER-PERSONAL	<ul style="list-style-type: none"> • Team work • Relationship management • Conflict resolution • Leadership • Networking 	<ul style="list-style-type: none"> ➤ show respect for the diverse opinions, values, belief systems, and contributions of others 	Life Drawing & Character Study Modeling Foundation Intro to Animation for Characters Motion Capture 1 Anatomy & Character Study Advanced Modeling Animation for Characters 2 Project Development Thesis Digital Character Project Thesis
		<ul style="list-style-type: none"> ➤ interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals 	Life Drawing & Character Study Modeling Foundation Intro to Animation for Characters Motion Capture 1 Anatomy & Character Study Advanced Modeling Animation for Characters 2 Project Development Thesis Digital Character Project Thesis
PERSONAL	<ul style="list-style-type: none"> • Managing self • Managing change and being flexible and adaptable • Engaging in reflective practices • Demonstrating personal responsibility 	<ul style="list-style-type: none"> ➤ manage the use of time and other resources to complete projects 	All courses
		<ul style="list-style-type: none"> ➤ take responsibility for one's own actions, decisions, and consequences 	All courses

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APPENDIX B - PROGRAM DESCRIPTION

PROGRAM DESCRIPTION: (including occupational areas where it is anticipated graduates will find employment)

This Ontario College Graduate Certificate (2 consecutive terms in length) will build upon students' prior technical and creative base. Students will experience every aspect in the creation of 3D animated characters and animated short films including: life drawing and storyboarding, 3D modelling and animation, shaders, texture mapping and lighting, character design, video editing and audio effects. Concept development, team work, strategic planning, and project management will be integral components of the program.

In the first term of the program students will be assigned projects that will solidify their understanding of the 3D 'pipeline'.

The second term will require students to work individually and in teams. They will create work for their final demo reel as well as work collaboratively in teams on a major project.

Graduates of this program will be prepared to work as 3D animators, character designers, effects artists, storyboard artists and level designers for the film, video, animation and game industries.

Students of this program will find themselves working for companies creating television commercials, industrial and commercial videos, and education materials.

VOCATIONAL PROGRAM LEARNING OUTCOMES: (vocational program learning outcomes must be consistent with the requirements of the Credentials Framework for the proposed credential)

The graduate has reliably demonstrated the ability to:

1. Execute creative concepts and ideas through a variety and combination of techniques including hand drawn, computer generated, 2D and 3D storyboards and animatics.
2. Create sophisticated models for the entertainment, medical, and architectural industries.
3. Create 3D characters and creatures ranging from life-like and anatomically correct, to cartoon and anime styles.
4. Combine texture mapping, shaders, lighting environments, animating cameras and 'rigs' for 3D models and characters in animation sequences.
5. Synthesize a wide variety of digital effects in the creation of environment and creature materials and textures.

6. Apply 3D techniques that demonstrate characters with realistic motion and a full range of emotion in animated characters.
7. Incorporate 3D animated characters with composited backgrounds utilizing special effects.
8. Utilize a variety of digital applications including video and audio editing software and technologies.
9. Integrate sophisticated technologies into 3D animated films, videos and games.

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

ADMISSION REQUIREMENTS:

- An interview
- A college diploma in Multimedia, Graphic Design, Visual Arts, Broadcasting – Television, Advanced Multi Media, Broadcast Television – Digital Post Production, Audio Post Production, or Advanced Filmmaking, or a minimum of 5 years industry related experience
- All applicants should be prepared to submit a portfolio demonstrating their creative and technical abilities (any combination of graphic design, print, traditional and digital illustration, 3D computer work, life drawing etc.)

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APPENDIX C - PROGRAM CURRICULUM

Semester	Course Code*	Course Title (and brief course description)
1	Life Drawing & Character Study 1 (LDCS1)	<p>In this course students will be introduced to the fundamentals of life drawing and the human form. A variety of techniques will be covered including pencil, charcoal, ink, and pastel. Emphasis will be placed on the technical side of life drawing with the goal of understanding composition, proportion and structure. Observational drawing techniques will include line, gesture, contour, shape, form, perspective and colour.</p> <p>In-class exercises will concentrate on gesture drawing. In addition to traditional drawing techniques, students will analyse and explore current trends in the industry with relation to digital character animation and design.</p>
1	Modelling Foundation 1 (MF1)	<p>In this class students will explore the basic foundation principles of 3D Modelling. Students will learn about 3D geometry including design of wireframe characters. This course will also address various modelling techniques and how they relate to different applications such as digital characters, video games architecture & level design etc.</p>
1	Introduction to Animation for Characters (IAC1)	<p>In this class students will explore the basic foundation principles of 2D and 3D animation and movement. Animation topics will include, stretch & squash, action, anticipation, timing and motion, exaggeration, etc.</p> <p>Students will utilize their life drawing expertise by adding realistic motion and emotion to digital characters. Traditional and digital techniques will be explored.</p>

		Rigging techniques will be addressed in this class including Biped and custom rigs.
1	Motion Capture 1 (MC1)	<p>In this course, students will be introduced to a motion capture set-up, specifically the VICON 8 camera system. Students will learn the basics of the system including; the software initialisation (IQ and Blade), camera installation and calibration, proper suit and marker placement.</p> <p>Theoretical and historical issues will be discussed in class including motion capture for Animated Gaming, Military, Motion Pictures, Medical research (biomedical research, bio mechanisms, and mathematical models of human movement) and Education.</p>
1	Texture, Light & Rendering 1 (TLR1)	<p>This course will concentrate on using 3D Max and Adobe Photoshop to introduce the essential elements and concepts for texturing, lighting and rendering.</p> <p>The goal of this course is to have students understand the core principles of lighting theory and texturing design with the end goal of simulating realistic characters and environments.</p> <p>Topics that will be covered in class include; texture creation, bump maps, UV UnWrap, reflection, self-illumination, global illumination, standard & advanced lighting systems, procedural mapping, video post and environmental effects. Emphasis is spent on specular, diffuse, colour, bump, displacement and normal mapping techniques.</p> <p>This class will be a combination of theoretical and practical analysis of techniques and styles including treatments for film, broadcast, gaming and web.</p>
2	Anatomy & Character Study 2 (ACS2)	<p>This course will build on the foundation of Life Drawing & Character Study 1 (LDCS1).</p> <p>Emphasis will be on developing technical ability. Human movement, emotion and acting fundamentals will also be addressed.</p>

2	Advanced Modelling (AM2)	<p>This course will be a continuation of the 3D theories and principles learned in the previous Modelling Foundation 1 (MF1).</p> <p>Students will strengthen their modelling and animation skills with the addition of learning expression, lip-sync & dialogue techniques. Projects will include basic animation of objects and characters.</p>
2	Animation for Characters 2 (AC2)	<p>In this course students will use 3D Max to set up a technical rig for a 3D character. Various options and tools will be discussed in class. The goal will be to create realistic, effective and intuitive movement and manageable control systems for humanoid, organic, in-organic and bi-pedal characters.</p> <p>Students will explore building and rigging a character from scratch, using bones, forward & inverse kinematics, the graph editor, constraints etc.</p>
2	Project Development Thesis (PDT)	<p>This class will focus on planning the final portfolio project. It will be integrated with Digital Character Project <i>Thesis</i>.</p> <p>Emphasis will be on planning for the production pipeline. This includes concept pitch, storyboard, 3D CGI to final project output.</p>
2	Digital Character Project/Thesis (DCPT)	<p>In this class students will propose and work towards a final portfolio thesis project. Emphasis will be placed on planning the project from concept through to final completion. A final demo reel, output to various media (DVD, web, VHS etc), including full audio, will be the end goal.</p>