

# 3D DIGITAL DESIGN

Curriculum Standards

2021-23

New Brunswick  
COLLEGE  
of CRAFT  
& DESIGN



# **CURRICULUM STANDARD**

## **3D DIGITAL DESIGN**

**2021 - 2023**

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The New Brunswick College of Craft and Design (NBCCD) fosters a learner-centered environment that puts the student at the heart of the educational experience.

NBCCD's officially approved document, the Curriculum Standard, details specific learning outcomes necessary for a student to be certified. It also assures uniformity of the delivery of a program's content.

The Curriculum Standard is an introduction to the program which includes the program's critical performance, a program description, program learning outcomes, and the program's potential career opportunities. This is followed by information on duration, credits, admission requirements, advanced placement, certification, articulations, and prior learning assessment and recognition.

This document also contains a program delivery sequence and the course profiles with specific course learning outcomes and grading basis.

In addition, the Curriculum Standard is used as a tool for revision and evaluation of the program and for the promotion of transfer agreements with other post-secondary institutions.

NBCCD welcomes all comments and inquiries regarding the implementation of this program and the use of this document. Please forward any requests or suggestions to the attention of:

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## Program Description

3D Digital Design is a two-year diploma program that can be completed in six terms of study. Students gain a solid grounding in 3D design concepts and visual communication strategies that enable them to engage in creative problem solving using digital technology at the core of the creative process. The program focuses primarily on modeling, texturing, drawing, animation, and world building, yet also permits ample time for exploration including character design, rigging, 3D printing, and storytelling. As students progress, they perfect their workflow and develop their focus on specific aspects of 3D Digital Design.

Through applied research, critical discourse and self-reflection, students engage in experimentation and creative problem solving. They learn about written and visual communications for artists and entrepreneurs, art history, drawing and 2D/3D design. Students create a portfolio that celebrates the power of the imagination and can be used to launch their career.

## Program Critical Performance

By the end of this program, students will have demonstrated the ability to solve problems creatively using their design skills and an array of 3D and 2D tools. Throughout the program students will also develop their own personalized workflow that is both accurate and efficient.

## Areas of Study

- 3D Modeling, Texturing and Animation
- Character Design, Rigging and Animation
- Digital Sculpting
- Design for 3D Printing
- Game Design and Development
- Visual Storytelling
- Drawing
- Self-promotion and Marketing

## Program Learning Outcomes

Following successful completion of this program, students will be able to:

- Design and animate 3-dimensional objects, characters, and environments.
- Design for digital platforms including video games, film, and television.
- Design and produce real world objects and assets using real world materials and 3D printers.
- Research using critical discourse and self-reflection, to engage in experimentation and creative problem solving.
- Communicate visually using the industry standard language of 2D/3D designers, illustrators, and entrepreneurs.

## Career Possibilities

With an entrepreneurial focus, this program prepares students to establish their own small business, be employed or continue in the Advanced Studio Practice Program at NBCCD or at other leading institutions in

Canada and beyond.

Professional opportunities upon graduation include:

- 3D Generalist/Modeller
- 3D Texture Artist/
- 3D Animator/Rigger
- Character Designer
- Level Designer/Editor
- Environment Artist
- Illustrator/Concept Artist
- Freelance Designer and Consultant/Entrepreneur

## PROGRAM INFORMATION

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### Admission Requirements

An official Transcript of Marks indicating one of the following:

- Certificate in Foundation Visual Arts (FVA) from NBCCD (Good Standing)
- One year of post-secondary education
- Equivalent experience will be considered

AND

- A portfolio submission

Review of the above may lead to a personal interview

### Certification

Upon successful completion of the prescribed curriculum, the student will receive a diploma in Textile Design.

## ARTICULATIONS

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The Textile Design program has developed articulation arrangements with other institutions as follows:

- Institution: University of New Brunswick (Fredericton)
- Articulation Period: 1998-05-14 - Undetermined
- Information: The Bachelor of applied Arts (BAA) is an articulated agreement with the University of New Brunswick. For admission requirements, refer to [www.unb.ca](http://www.unb.ca).

## TERRITORIAL ACKNOWLEDGMENT

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NBCCD acknowledges that we live, work and create on the unsundered and unceded traditional Wolastoqey land. The lands of Wabanaki people are recognized in a series of Peace and Friendship Treaties to establish an ongoing relationship of peace, friendship and mutual respect between equal nations. The river that runs by our college is known as Wolastoq (Saint John River), along which live Wolastoqiyik – the people of the beautiful and bountiful river.

## PROGRAM STRUCTURE

\*Specific Electives \*\*Shared Electives not included in this document

### Fall 1

Code	Title	Credits	Scheduled Hours	Nominal Hours	Requisites
CDDC 2000	Modeling and Texturing I	6	90	180	None
CDDD 2001	Time and Motion	6	90	180	None
CDDD 2002	World Building	3	45	90	None
CDDD 2003	Digital Imaging	3	45	90	None
DRAW 2905	Constructive Drawing 1	3	45	90	None

Total of credits: 21.00

### Winter 1

Code	Title	Credits	Scheduled Hours	Nominal Hours	Requisites
CDDD 2004	Film Concepts	6	90	180	None
CDDD 2010	Modeling and Texturing II	6	90	180	CDDD 2000
CDDD 2011	Animation	3	45	90	CDDD 2001
CDDD 2012	Game Design	3	45	90	CDDD 2002
**DRAW 2901	Life Drawing: Structure and Form	3	45	90	None

Total of credits: 21.00

### Spring 1

Code	Title	Credits	Scheduled Hours	Nominal Hours	Requisites
CDDD 2020	Modeling and Texturing III	6	90	180	CDDD 2010

Total of credits: 6.00



## Fall 2

Code	Title	Credits	Scheduled Hours	Nominal Hours	Requisites
CDDD 3000	Modeling and Texturing IV	6	90	180	CDDD 2020
CDDD 3001	Advanced Animation	3	45	90	CDDD 2011
CDDD 3002	Game Development	3	45	90	CDDD 2012
DRAW 3002	Constructive Drawing II	3	45	90	DRAW 2905
*CDDD 3030	3D Print: Production	3	45	90	CDDD 2020
*CDDD 3031	Character Design and Modeling	3	45	90	CDDD 2020, DRAW 2901, DRAW 2905
*CDDD 3032	Compositing and Motion Graphics	3	45	90	CDDD 2011
*CDDD 3033	Storytelling	3	45	90	CDDD 3033

Total of credits: 21.00

## Winter 2

Code	Title	Credits	Scheduled Hours	Nominal Hours	Requisites
CDDD 3010	Modeling and Texturing V	6	90	180	CDDD 3000
CDDD 3012	Advanced Game Development	3	45	90	CDDD 3002
ENTR 3913	Preparing for a Career in 3D Digital Design	3	45	90	None
*DRAW 3003	Constructive Drawing III	3	45	90	DRAW 3002
*CDDD 3034	3D Print: Finishing	3	45	90	CDDD 2020
*CDDD 3035	Character Rigging and Animation	3	45	90	CDDD 3001 CDDD 3031
*CDDD 3036	3D Jewellery Design	3	45	90	CDDD 3036

**AVVA 3908	Designing Bodies	3	45	90	None
**DRAW 3001	Imagery Source and Development	3	45	90	None
**DSGN 3916	Book Art Design	3	45	90	None
**HUMN	Art for Social Change	3	45	90	None

Total of credits: 21.00

## Spring 2

Code	Title	Credits	Scheduled Hours	Nominal Hours	Requisites
INST 3902	Senior Practicum	3	45	90	None
INST 3910	Senior Project: 3D Digital Design	3	45	90	None

Total of credits: 6.00

## DELIVERY SEQUENCE/COURSE PROFILES

**Course Code/Title:** CDDD 2000 Modeling and Texturing 1

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 180/90

**Credits:** 6

Lecture	Studio	Homework	Independent Study	Practicum
45	45	90	0	0

### Course Description

In this course, students are introduced to basic 3D modeling and texturing techniques. They practice these techniques to develop a personal workflow in constructing objects from reference. Students will learn how to apply both texture and materials to finalize the model.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to create and texture a 3D object.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Understanding how to navigate and create in a 3D environment.
2. Analyze an object to determine the most effective way to recreate the object in 3D.
3. Create textures and materials for 3D models.
4. Select the appropriate technique to add detail to 3D models.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 2001 Time and Motion

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 180/90

**Credits:** 6

Lecture	Studio	Homework	Independent Study	Practicum
45	45	90	0	0

### Course Description

In this course students will use design elements to study visual storytelling using 2D imagery. Students will apply this knowledge to storyboarding and animation, and will also study basic animation concepts.

### Course Critical Performance

By the end of this course, students will have developed the ability to visually construct meaning, and apply it practically in basic scenarios.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Analyze various forms of visual communication.
2. Employ design concepts to express visual ideas and construct meaning.
3. Create time-based and motion-based graphics using a variety of basic animation techniques.
4. Create a storyboard that describes the framing and order of shots in a time-based environment.
5. Demonstrate professionalism in the classroom

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 2002 World Building

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course students will analyze and design environments and assets used in game development and production design. They will practice communicating visually, constructing meaning, and elevate impact using set design, lighting, and location.

### Course Critical Performance

By the end of this course, students will be able to analyze and critique how design contributes to visual and narrative world building.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Understand the history of world building in game, film, and print advertising.
2. Use colour theory to convey genre, atmosphere, and emotion in moving and interactive images.
3. Distinguish between functionality and esthetics in set design.
4. Construct an industry standard style guide.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 2003 Digital Imaging

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students acquire, manipulate and create digital imagery by utilizing the basic tools and techniques for pixelbased imagery. They use digitizing devices such as cameras and scanners to acquire images and learn to manipulate and control the technical aspects of the digital image. In addition, they format images for various purposes and media destinations while exploring the creative possibilities that pixel-based imagery provides.

### Course Critical Performance

By the end of this course, students will have developed the ability to integrate technical and creative skills for the creation and manipulation of pixel-based images.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Use appropriate software applications for the creation, correction, retouching and manipulation of digital images.
2. Assemble digital images to create panoramic and high dynamic-range images.
3. Capture and import digital images from a digital camera and perform digitization functions with a scanner.
4. Manipulate a photographic image to create a seamless tileable image for use in texturing.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

## COURSE PROFILES

**Course Code/Title:** DRAW 2905 Constructive Drawing 1

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
10	35	45	0	0

### Course Description

In this course, students draw convincing 3D forms from plans and imagination by freehand and perspective construction methods. Using predominantly pencil, they draw fundamental and complex forms, incorporate them in spatial settings and also render value on lighted forms. These techniques provide basic skills for the visualization and development of 3D imagery for applications in character design, storyboard illustration (for film or gaming), graphic novels and/or presentation renderings.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to render by hand complex forms in a convincing perspective space.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Construct accurate perspective drawings of fundamental forms, from plans or imagination.
2. Use freehand perspective construction, with knowledge of fundamental solids, and create compound forms from imagination.
3. Create convincing 3D illustrations in spatial settings and with appropriate tonal range.
4. Use appropriate terminology and procedures for perspective projection and orthographic drawings, being familiar with other projection systems.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 2004 Film Concepts

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 180/90

**Credits:** 6

Lecture	Studio	Homework	Independent Study	Practicum
40	50	90	0	0

### Course Description

In this course, students will build on their foundation of visual storytelling, through examination of composition and framing, lighting, colour, and perspective. Students will learn how to break down the relationship between moving images, and how to add exponential meaning through juxtaposition.

### Course Critical Performance

By the end of this course, students will be able to objectively and subjectively analyze and deconstruct meaning in moving images.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Construct a fully formulated storyboard that guides the creation of an animated film.
2. Compose imagery that communicates intended meaning, and creatively expresses ideas and concepts.
3. Assemble moving images on a linear timeline and create additive meaning.
4. Be able to understand how the concepts of film interact in the world of 3D digital design.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.



**Course Code/Title:** CDDD 2010 Modeling and Texturing II

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2000

**Nominal/Scheduled Hours:** 180/90

**Credits:** 6

Lecture	Studio	Homework	Independent Study	Practicum
40	50	90	0	0

### Course Description

In this course, students learn advanced techniques for 3D modeling and texturing. They explore the applications of 3D principles and design concepts in order to translate from digital objects into physical objects. Students will be introduced to sculpting techniques as an alternative to traditional modeling.

### Course Critical Performance

By the end of this course, students will have developed facilities in modelling and designing 3D forms.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Build on introductory techniques for both hard surface modeling and sculpting.
2. Use software to paint and texture 3D models.
3. Use the elements and principles of design, and imagination to create 3D models.
4. Analyze a variety of applications and techniques for 3D printing.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 2011 Animation

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2001

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students will bring their creations to life by building on concepts first introduced in Time and Motion. They explore ideas such as keyframes, rigging, and lighting. Students will gain proficiency in both 2D and 3D animation.

### Course Critical Performance

By the end of the course, students will have demonstrated the ability to create, rig, animate, and render 2D and 3D models and scenes using a variety of techniques.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Apply traditional animation concepts to 3D animation.
2. Create convincing movement for 2D and 3D forms.
3. Use armatures to control complex movement of organic and inorganic forms.
4. Explore methods for combining 2D and 3D animation techniques.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 2012 Game Design

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2002

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students will further explore the application of game engines. Students will examine the specific challenges in game development and how to effectively work within these limitations. Students will concentrate on design aesthetics and create a world that is consistent with a distinct identity.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to design, create and manage content for use in games.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Create content adhering to their own style guide, created in the previous course.
2. Design game assets and elements on a professional level.
3. Develop a workflow and organizational structure to assemble and keep organized large projects.
4. Effectively critique and respond to criticism of the project they are working towards building.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** DRAW 2901 Life Drawing Structure and Form

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2010

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students enhance their capacity to see, interpret and draw the complex 3D form of the body. They develop their ability to draw the life model with attention to proportions, shape and general anatomy. Students increase their facility with essential strategies such as gesture, massing, mapping and sighting as applied to figure drawing. In addition, they learn to be expressive and intentional when depicting the human form.

### Course Critical Performance

By the end of the course, students will have demonstrated the ability to convincingly depict the human form.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Choose drawing strategies that can express space, form and depth in a drawing, especially of the life model.
2. Produce drawings of the life model that reflect the ability to analyze and represent the structure and form of the human figure.
3. Engage in the process of life drawing attending to perceptual and aesthetic concerns in the drawing process.
4. Critique figure drawings using the appropriate terminology and reflecting an understanding of concepts such as proportion, structure or form, use of value, general anatomy and aesthetics.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 2020 Modeling and Texturing III

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2010

**Nominal/Scheduled Hours:** 180/90

**Credits:** 6

Lecture	Studio	Homework	Independent Study	Practicum
40	50	90	0	0

### Course Description

In this course, students will explore 3D production techniques in order to construct an asset package for use in other applications. They will also perfect their own personal workflow.

### Course Critical Performance

By the end of this course, students will be able to demonstrate the ability to produce industry level assets using appropriate workflow and standards.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Produce modular assets with a focus on reusability and versatility.
2. Understand limitations of resolution in regards to pixel density.
3. Perfect a personalized workflow with a focus on both speed and accuracy.
4. Understand and adapt to variables and deadlines.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3000 Modeling and Texturing IV

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2020

**Nominal/Scheduled Hours:** 180/90

**Credits:** 6

Lecture	Studio	Homework	Independent Study	Practicum
30	60	90	0	0

### Course Description

In this course, students will build on their knowledge of asset creation by exploring alternative software solutions for modeling. By integrating a variety of new tools students will elevate their existing software knowledge.

### Course Critical Performance

By the end of this course, students will have the advanced ability to create assets, and evaluate alternative software packages to create them.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Create advanced assets for use in game development.
2. Evaluate software applications for use in creating assets.
3. Develop and perfect personal workflow in creating 3D objects.
4. Generate work that reflects initiative, creativity, adaptability and personal style.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3001 Advanced Animation

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2011

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students will create a short animated piece, taking it along all the developmental stages from conception, scripting, and storyboarding to rigging, lighting, and rendering.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to create an original fully-realized animated piece.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Use their knowledge of visual communication to conceptualize an effective animated piece.
2. Create a plan for setting up a scene that will incorporate lighting and allow for motion and other changes over a specific time period.
3. Build, light, and rig a scene as part of an animated piece.
4. Make informed choices about rendering an animated piece.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3002 Game Development

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2012

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course students will use the assets they created in Modeling and Texturing III to compose a game environment. They'll apply advanced lighting and processing effects to enhance these scenes, and through experimentation students will explore game environments optimization.

### Course Critical Performance

By the end of the course, students will have demonstrated the ability to create game environments while also maintaining scene optimization and the capacity to run effectively in a real time environment.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Create a scene in game engine that balances visual quality and performance.
2. Create a landscape using a combination of 3D tools and the tools available in the game engine.
3. Compose an engaging environment using advanced lighting and volumetric effects.
4. Understand the process by which they can test their scenes to discover issues, and be able to both identify and fix them.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.



**Course Code/Title:** DRAW 3002 Constructive Drawing II

**Academic Dean:** Denise Richard

**Requisites:** DRAW 2905

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
10	35	45	0	0

### Course Description

In this course, students become familiar with human proportions and anatomical landmarks that allow them to construct figures from simple forms. They learn techniques to determine and control size in perspective depth, to create perspective reflections and to introduce figures into perspective views.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to construct convincing figures and incorporate them into complex perspective views.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Construct a figure from simple forms using convincing human proportions and anatomical landmarks.
2. Construct a complex perspective view that incorporates figures.
3. Create a plan view from a perspective view.
4. Create imagery that communicates intended information and/or expresses specific ideas and/or concepts with creativity and imagination.
5. Successfully analyze a variety of techniques in order to creatively solve problems related to the development of projects.
6. Develop a work process that reflects effective resource management for constructing and organizing a workable project (e.g. time, workload, information and other resources).

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3030 Print Production

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2020

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
10	35	45	0	0

### Course Description

In this course, students explore the applications of 3D principles in the context of the printing process. They apply knowledge of modeling in a practical manner and test each printer's limitations. Students gain skills and develop problem-solving abilities with this process.

### Course Critical Performance

By the end of this course, students will understand the full process of 3D printing and develop problem-solving techniques.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Become familiar with 3D printers and understand their limitations.
2. Use the elements and principles of design to create printable 3D models with creativity and imagination.
3. Explore various 3D print media.
4. Gain experience with specific software used with 3D printing.
5. Analyze a variety of applications and techniques for 3D printing.
6. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3031 Character Design and Modeling

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2020, DRAW 2901, DRAW 2905

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students will explore the many aspects of character creation and development. Students will use shape and form language to convey aspects of visual design, and build on their understanding of modeling for the purpose of animation.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to design and model 3D characters.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Design 3D characters with consideration given to movement and animation.
2. Model a character based on reference material.
3. Create maps and textures for 3D characters.
4. Analyze and apply aesthetic concepts with regards to character design.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3032 Composting and Motion Graphics

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2011

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students learn to create motion graphics projects that blend together both 2D and 3D elements, as well as compositing photographed and rendered elements together to make believable images and video.

### Course Critical Performance

By the end of the course, students will have demonstrated the ability to design motion graphics sequences and composite both 2D and 3D elements.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Design and construct creative and imaginative motion graphics sequences that incorporate text, 3D elements and moving images in both 2D and 3D space for a variety of applications.
2. Compose scenes for motion pictures that incorporate various visual effects, including keying and multi-layer compositing.
3. Evaluate and construct scenes that require tracking or match moving.
4. Analyze a variety of applications and situations in order to problem solve as related to the creation of projects.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3033 Storytelling

**Academic Dean:** Denise Richard

**Requisites:** CDDD 3033

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students will learn and practice visual narrative storytelling that can be applied to 3D environments, game worlds, and animations. They will explore character development, elevate their world building skills, and understand how and why story arcs are designed and used.

### Course Critical Performance

By the end of this course, students will be able to successfully analyze, create, and edit narrative and character story arcs.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Develop and express character backstory, motivations, and arcs.
2. Understand how setting and location contributes to narrative exposition.
3. Understand how to use every component of a frame to elevate visual storytelling.
4. Edit stories cohesively.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3010 Modeling and Texturing V

**Academic Dean:** Denise Richard

**Requisites:** CDDD 3000

**Nominal/Scheduled Hours:** 180/90

**Credits:** 6

Lecture	Studio	Homework	Independent Study	Practicum
20	70	90	0	0

### Course Description

In this course, students will practice advanced techniques to further refine their own workflow. Students will be tasked with creating and organizing a larger project to be completed over the duration of this course.

### Course Critical Performance

By the end of this course, students will have the ability to create 3D assets using an efficient personalized workflow that allows them to create accurate and versatile high quality designs.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Create 3D assets that are both accurate and efficient.
2. Perfected a personal workflow for the creation of 3D design.
3. Evaluate software applications for use in the creation of 3D artwork.
4. Organize a personal project focusing on staying within time budgets and quality standards.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3012 Advanced Game Development

**Academic Dean:** Denise Richard

**Requisites:** CDDD 3002

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students will learn to implement their character creations into the game engine. Through exploration of basic and intermediate functionality, students will use advanced simulation and particle solutions to explore their pre-existing environments.

### Course Critical Performance

By the end of this course, students will be able to further populate the game world they have created through use of characters, effects and basic functionality.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Use their own character creations in the game engine.
2. Create both simple and intermediate functionality.
3. Create and use particle effects and simulations.
4. Evaluate different functionality solutions in terms of ease of use and engine efficiency.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** ENTR 3913 Preparing for a Career in 3D Digital Design

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
35	10	45	0	0

### Course Description

In this course, students will develop an understanding of the 3D marketplace and how to shape their place in it. Students will study market trends and freelance best practices. They will also build portfolios.

### Course Critical Performance

By the end of this course, students will have the ability to build relationships and successfully monetize their skillset in professional and freelance landscapes.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Develop the personal and interpersonal skills needed to function as an employee or as an independent business entity.
2. Develop time management skills and self-direction.
3. Understand how to price labour and assets.
4. Showcase their work professionally in an online portfolio platform.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.



**Course Code/Title:** Constructive Drawing III

**Academic Dean:** Denise Richard

**Requisites:** DRAW 3002

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
15	30	45	0	0

### Course Description

In this course, students build on basic and intermediate constructive drawing strategies in practical ways in order to explore their own imaginative ideas. They learn to solve problems of representation in depth by careful planning and analysis. In addition, students explore a variety of rendering techniques and materials.

### Course Critical Performance

By the end of the course, students will be able to use their knowledge of drawing to create imaginative views of their own design.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Employ drawing strategies that can express space, form and depth.
2. Successfully analyze a variety of techniques in order to creatively solve problems related to the development of projects.
3. Plan spatial relationships to create a composition.
4. Experiment with a variety of materials to produce desired effects.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

Grading Basis: Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3034 3D Print: Finishing

**Academic Dean:** Denise Richard

**Requisites:** CDDD 2020

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
15	30	45	0	0

### Course Description

In this course, students will experiment with finishing techniques for models 3D printed in a variety of materials. They will test various finishing processes on a variety of materials, and choose to focus on a specific material and process. In addition, students will develop a personal finishing style.

### Course Critical Performance

By the end of this course, students will become familiar with finishing techniques for a variety of 3D printed materials and will develop appropriate finish for a model of their creation.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Experiment with different finishing processes.
2. Use the elements and principles of design to create printable 3D models.
3. Determine the limitations of each material.
4. Construct presentation ready 3D printed pieces with an emphasis on creative personal style.
5. Use design specific terminology to critique and evaluate finished pieces.
6. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3035 Character Rigging and Animation

**Academic Dean:** Denise Richard

**Requisites:** CDDD 3001, CDDD 3031

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students learn the concepts and practice of character rigging for use in games and animation. Students will use a variety of methods to control and manipulate the character and convey both intention and emotion.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to rig and animate 3D characters both functionally and with intention.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Prepare a complete rig for bipedal characters.
2. Employ techniques to convey purpose in an animated character.
3. Evaluate different solutions to animation issues and determine which best suit the specific needs of the project.
4. Produce an accurate weight paint map to control a 3D character.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

Grading Basis: Graded with pass mark of 60%.

**Course Code/Title:** CDDD 3036 3D Jewelry Design

**Academic Dean:** Denise Richard

**Requisites:** CDDD 3036

**Nominal/Scheduled Hours:** 90/45

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
20	25	45	0	0

### Course Description

In this course, students will produce projects that explore both spatial relationships and the broader world of jewellery design and 3D printing applications. With industry-standard software, students will learn more advanced tools and concepts of computer-based design. They will develop a personal design aesthetic and create a variety of objects for direct use, prototypes, for casting, or in your current workflow. In addition, peer presentations and critical visual analysis are emphasized.

### Course Critical Performance

By the end of this course, students demonstrate the ability to create and print 3D objects and solve visual problems through the application of computer-based 3D design elements and principles.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Create digital files of simple virtual objects, that are individually designed, and can be prototyped by 3D printing technologies.
2. Import designs/sketches as templates by setting-up real world measurements and work spaces, using modeling tools, points, curves, surfaces and solids in virtual 3D space.
3. Produce technically proficient work that demonstrates the effective integration of 3D design elements and principles in 3D applications.
4. Ensure materials have practical viability in addition to a pleasing aesthetic.
5. Demonstrate professionalism in the classroom.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** INST 3902 Senior Practicum

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 180/0

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
0	0	0	0	180

### Course Description

In this course, students are given the opportunity to work within a business or organization. They develop a professional level of conduct as they further their interpersonal workplace skills. In addition, they actively participate in the specialized activities of their practicum.

### Course Critical Performance

By the end of this course, students will have demonstrated the ability to successfully work in a professional environment.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Display a professional level of conduct by maintaining an appropriate attitude in a business/organization related to their field of study.
2. Articulate the pros and cons of working within a business/organization with a practical understanding of their professional field.
3. Exhibit a positive work ethic by being fully engaged in their placement and displaying effective work habits.
4. Successfully manage and identify the complex and diverse needs related to their specialized field.
5. Compile a portfolio of samples/photographs of work completed during the practicum subject to the permissions/restrictions of the host company.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.

**Course Code/Title:** INST 3910 Senior Project: 3D Digital Design

**Academic Dean:** Denise Richard

**Requisites:** None

**Nominal/Scheduled Hours:** 180/90

**Credits:** 3

Lecture	Studio	Homework	Independent Study	Practicum
30	60	0	90	0

### Course Description

In this course, students produce a significant piece or series that becomes the focal point of their portfolio. They submit a proposal that determines the form and scope of their final project. This project requires students to integrate their creative abilities, design knowledge and personal aesthetics with technical prowess.

### Course Critical Performance

By the end of the course, students will have demonstrated the ability to independently complete a creative project that represents a significant addition to their portfolio.

### Course Learning Outcomes

Upon the successful completion of this course, students will have demonstrated the ability to:

1. Exhibit originality and personal creativity by creating a singular or series-based portfolio piece that forms the nucleus of their portfolios.
2. Display an ability to work independently while self-managing a project from concept to completion of professional size and scope.
3. Conduct research of current trends and/or a product's viability in a proposed studio project.
4. Synthesize personal creative abilities and aesthetic sensibilities with design knowledge and technical skills in the creation of professional-level work.
5. Self-evaluate and assess through critical analysis and comparison to existing work in the professional marketplace.

### Student Attendance And Participation Policy:

All students are expected to attend and participate in every class, studio, work practicum and other course activity.

### Evaluation Plan

The evaluation plan for each specific medium is provided on the Learning Experiences Outlines document. No single project will exceed 35% of the final grade.

**Grading Basis:** Graded with pass mark of 60%.