

# UAT-Online: Bachelor of Arts in Game Art and Animation

## Program Description

Students in the Game Art and Animation program will gain an insight into what is involved at all levels of game development to create 2D and 3D art assets for multiple video game platforms such as PC, consoles, handheld games, Internet, phone and other hybrids. Students will master the artistic principles used in 2D and 3D video games art asset creation such as color theory, lighting, shading, anatomy, life drawing, perspective, scene staging, modeling low polygon and high polygon, 3D mesh topology, texturing, rigging, hand key character and prop animations as well as motion capture and facial animation.

## How UAT-Online Works

UAT-Online's Bachelor of Arts in Game Art and Animation program has been developed to give students the ability to focus 100% of their attention on each individual skill and class needed to become successful in this rapidly growing field. Classes are taken one at a time, and last five weeks each. Three classes will be taken each semester for a total of 15 weeks per semester. Courses are taken sequentially in order to build on the foundation of previous skills learned. This helps to increase overall understanding and comprehension of the material.

## Objectives

- Establish and defend an artistic style within your work based on sound artistic theories, practices and knowledge.
- Create and integrate into a video game environment 2D and 3D video game art assets and animation utilizing industry-standard software tools and techniques.
- Develop original assets for multiple video game platforms such as web, console, PC and handheld gaming platforms emphasizing the differences and similarities of each.
- Working within confines of an industry-standard production pipeline, develop and modify video game art assets and animation.
- Build 2D and 3D video game animation utilizing techniques such as hand keying and motion capture to create blend poses, loops, re-targeting animation and character rigging.
- Design art assets in order to facilitate the completion of a game project and implement a given game design.

## University Core Courses

INT3500/4000	Internship
LAW3700	Legal Issues in Technology
MGT1120	Project Management in a Technology Environment
PRO1020	Professional Skills Development
PRO2510	Senior Innovation Project I/II: Topic Paper and Project Plan
PRO3000/3010	Senior Innovation Project III: Analysis
PRO4810	Senior Innovation Project IV & Portfolio: Presentation
TCH1100	Foresight Development
TCH3010	Ethics in Technology

## General Education Courses

BIO1200	Introduction to Biology
COM2260	Public Speaking
ENG1010	Composition I
ENG1020	Composition II
ENG3100	Science Fiction as Literature
ENG4120	Graphic Novel
HIS3050	20th Century Innovation
MAT1550	Math Appreciation
PSY1500	Psychology of Thinking
PSY3600	Psychology of Creativity
SOC1500	Technology and Society

## Degree-Specific Courses

ART1050	Communicating with Color
ART1080	2D Design
ART1210	Beginning Drawing
ART2310	Intermediate Drawing
ART2340	Storyboarding
ART2360	Basic Character Figure Drawing
ART3550	Character Design
ART3560	Environmental Design
DVA1100	Lighting and Environment Design
DVA2500	3D Modeling
DVA2550	3D Animation
GAM1100	Introduction to Game Art
GAM2430	2D Game Assets
GAM3430	Game Modeling
GAM3450	Game Animation
GAM3470	Game Texturing
GAM4100	Advanced Game Texturing
GAM4450	Advanced Game Animation
MTM1010	Digital Imaging
MTM2220	Texturing and Surfacing Using Photoshop

*This list represents the combination of courses necessary for the degree. Course sequence and offerings may change due to software or other scheduling requirements.*

*To learn about UAT-Online's Associate of Arts in Game Art and Animation, please see the UAT-Online catalog.*



## COURSE DESCRIPTIONS

### University Core Courses

#### **INT3500 Internship**

An internship is considered a supervised, practical experience that is the application of previously learned theory. Employers/sponsors work with the student to meet specific objectives and/or learning goals and provide special mentoring or networking opportunities. In exchange, the intern helps the employer/sponsor in meeting overall work goals for the agency/company. Students completing 3.0 credit internships must work a total of 150 hours, or 10 hours per week for 15 weeks.

#### **INT4000 Internship**

An internship is considered a supervised, practical experience that is the application of previously learned theory. Employers/sponsors work with the student to meet specific objectives and/or learning goals and provide special mentoring or networking opportunities. In exchange, the intern helps the employer/sponsor in meeting overall work goals for the agency/company. Students completing 6.0 credit internships must work a total of 300 hours, or 20 hours per week for 15 weeks.

#### **LAW3700 Legal Issues in Technology**

This course addresses typical legal and business issues in the multimedia field. Rights granted under copyright, principles of fair use, trademarks, intellectual property law, trade secrets, unfair competition, disclosure and privacy laws are covered. Students explore these legal topics with focus on electronic media.

#### **MGT1120 Project Management in a Technology Environment**

This course covers every aspect of managing a project in a technology environment, from assembling the right team to figuring out a schedule, estimating needed resources and monitoring its progress. This course will cover determination, examination and critiques of current practices in project management with an emphasis on the use of technology to support project development. Also included are real-life project management problems such as the following: how to get results when there is no direct authority over participants, what to do when team members don't follow through, how to handle differing departmental agendas and how to balance regular work with additional responsibilities. Communication skills will also be emphasized.

#### **PRO1020 Professional Skills Development**

This course is designed to develop life-long learning strategies and provides the basic skills for success in the educational, professional and personal environment. Specific topics explored are personality profile analysis, developmental styles, conflict resolution skills, group problem solving and learning style analysis. Collaboration and group skills development will be emphasized.

#### **PRO2510 Senior Innovation Project I/II: Topic Paper and Project Plan**

The purpose of this course is to develop students as technologists. Students will explore and critically analyze a potential and emerging topic for a thesis and shape their ideas into a form that represents a clear set of thinking to be used as the basis for developing their

innovation. In creating a topic document based upon these investigations, students will demonstrate the ability to communicate technology ideas to others and increase the likelihood that the idea will take form and find a relevant application in society. The course will culminate with the composition and approval of the student's topic paper. The topic paper will include an abbreviated introduction of the innovation, short prior art identification and general methodology.

#### **PRO3000 Senior Innovation Project III: Analysis**

This course continues the journey towards the completion of the student thesis and should be taken after the actual innovation or hypothesis has been tested, and students are ready to compose analysis/results and the conclusion to the work. This course will culminate in the composition and approval of thesis chapters including Results (Chapter 4) and Conclusions (Chapter 5).

#### **PRO3010 Senior Innovation Project II: Analysis and Patent Processes**

This course continues the journey towards the completion of the student thesis and should be taken after the actual innovation or hypothesis has been tested and students are ready to compose analysis/results and the conclusion to the work. This course is an alternative to PRO3000 and includes the exploration of the student innovation for a patent application. Students will be exposed to the concepts of patents and patent applications. The course will culminate in the composition and approval of thesis chapters including Results (Chapter 4) and Conclusions (Chapter 5).

#### **PRO4810 Senior Innovation Project IV & Portfolio: Presentation**

This course completes undergraduate thesis and portfolio process providing guidance and structure for the formal presentation of the student's work. Students will passionately and clearly articulate their innovation, technology concepts and application in a formal defense. Students entering this class are expected to have completed all works included in their portfolio and have their thesis chapters approved through the completion of prior thesis course work prior to enrolling.

#### **TCH1100 Foresight Development**

Foresight is the act of looking to the future. This course teaches better global, business and personal foresight to better enjoy and manage your own future. This course will explore the big picture history of accelerating change from universal, historical and technological perspectives, as well as identifying global trends that are affecting individuals, society, businesses and governments. Additionally, the course will examine how organizations make bets on the future and gives the student a chance to explore career prospects in a variety of fields. Finally, discussion of how biology, psychology, community and culture help and hinder personal thinking about the future will be discussed. We will articulate and explain the four fundamental foresight processes: innovating the future (creative development of products and services); planning the future (developing shared goals and processes); profiting in the future (achieving measurable positive results, including environmental, social, and economic benefits); and predicting the future (trend identification and analysis).

Assignments will be fun, personalized to foresight goals, and will include brief readings, brief writing, discussions, debates, visuals, film, podcasts and games.

### **TCH3010 Ethics in Technology**

TCH3010 is designed to introduce students to essential concepts necessary to evaluate the ethical implications and potential impacts of the use of new technology within human society and culture. Students will explore modern ethical dilemmas in technology, looking at multiple aspects of how the introduction of technology redefines law and values.

## **General Education Courses**

### **BIO1200 Introduction to Biology**

This course explores the basic issues of living organisms. The material covered emphasizes molecular and organic biology, as well as the structure and function of plants and animals. Learning activities include lectures, group activities and various practical exercises that help students to better understand biology and to use their knowledge in everyday life, as well as in their future careers.

### **COM2260 Public Speaking**

Public Speaking in Technology offers instruction and practice in speech organization and delivery with purpose and audience in mind. Students will create effective presentations to introduce, demonstrate, inform and persuade through technology-related topics. Information on effectively utilizing voice, nonverbal skills and visuals will also be included.

### **ENG1010 Composition I**

This course is designed to present effective techniques in organizing, developing and writing academic essays that reflect a collegiate level of writing. The purpose of this course is to help students write correctly, clearly and thoughtfully. Students will receive an introduction to basic writing and reading skills required for success in college, with emphasis on fluency in personal, descriptive, argumentative and process analysis prose.

### **ENG1020 Composition II**

ENG1020 is designed to introduce students to the essential language, theories and strategies of argumentation and research. The purpose of the course is to provide students with the tools necessary to develop arguments for specific audiences within specific rhetorical situations. Students will also develop their critical reading skills: analyzing, evaluating and critiquing the claims and evidence used by various authors. Finally, students will learn proper research skills and write an in-depth research essay/project.

### **ENG3100 Science Fiction as Literature**

A long time ago, in a galaxy not so far away, science fiction evolved from a variant pulp magazine topic to a literary genre in its own right. Students will study how this genre has evolved from the dark fantasy narratives of the 19th century through the start of the 21st century. Be immersed in novels and engage cutting-edge theories, and be prepared to write intelligently about the reading.

### **ENG4120 Graphic Novel**

This course will consider a selection of contemporary graphic novels specifically centered on those that have received either critical acclaim or notoriety. Until recently, this genre of literature has been dismissed as "childish" or, even worse, as "funny books" not worthy of critical consideration. As part of the class, students will engage some of the fledgling criticism about graphic novels as well as related concerns regarding visual theory. Students will test theories with hands-on projects and some challenging but intriguing readings. Students will place each work in its unique historical and political context... a journey that will cross the globe and hearken back to the 19<sup>th</sup> century all within the span of a few weeks.

### **HIS3050 20th Century Innovation**

This course examines the role of technology in the 20th century and how it affects us culturally. Key themes include invention of new technologies and debates over the advantages and drawbacks of industrialization, mass production and information technologies. Students participate in a variety of innovative activities designed to understand the changes that took place socially and economically because of these innovations.

### **MAT1550 Mathematics Appreciation**

This course is designed to introduce students to mathematical ideas that have an impact on the way they view the world. Mathematical concepts in the manner of a "great ideas" course will be discussed. However, the ideas to explore fall within the realm of mathematics.

### **PSY1500 Psychology of Thinking**

PSY1500 will examine the writings of Pythagoras, the father of formal mathematical thinking; Aristotle's major works, including his 100-plus tests for the truth of any proposition; and other major thinkers from the classical period to modern times, including Francis Bacon, Galileo and other progenitors of the natural and behavioral sciences. The course will close with a survey of living thinkers, including "system thinkers" and a study of the major books by Edward de Bono.

### **PSY3600 Psychology of Creativity**

What do Einstein, Picasso and Bill Gates have in common? What are inspiration, insight and improvisation? Are the Muses necessary or is there another way to develop imagination? Students can get answers to these and other questions in this highly interactive course. Discover the genius inside. This course provides a historical review of a variety of approaches to creativity. The material covered emphasizes psychological components of the creative process, the application of creativity in the writing process, the visual arts as well as music, leadership, problem solving and science, the preconditions for creativity and the general characteristics of creative people. Learning activities include practical activities and exercises that can be used to improve personal traits and attributes as well as enhance creative potential.

**SOC1500 Technology and Society**

SOC1500 is designed to introduce students to the essential understanding, development, theories, strategies and historical interrelation of technology and society. The purpose of the course is to provide students with the tools necessary to understand the role technology has played in society and to prepare students for interaction in a technology driven world with a comprehensive look at the relationship between technology and culture. Technology will be recognized as a driving force in cultural revolutions and as a foundational concept of human development. The course will consider rapidly changing technologies in modern society, the problems associated with these changes and the affects of these technologies on the societies and cultures around the world.

**Degree-Specific Courses****ART1050 Communicating with Color**

This course applies color theory as an element for communication and expression as applied to traditional and digital design in the visual communications field. This fundamental course includes color theory, color interaction, color psychology, color perception in an ethnically diverse international audience, and color trends. This course covers creative and technical aspects of color design issues using digital illustration and traditional media manipulation.

**ART1080 2D Design**

ART1080 is an introduction to design concepts with an emphasis on traditional compositional theory, design principles and elements. This course is designed to give students a strong understanding of two-dimensional visual elements as they pertain to traditional media.

**ART1210 Beginning Drawing**

Is drawing a gift that has to come naturally? It is actually a skill like any other. This course will demonstrate how easily it can be learned. Drawing is as much about learning how to see and think about form and space as it is about technique. The drawing part itself is just marks on paper. Those marks come together to tell the viewer something about the world that the artist experienced. Drawing also gives one a deeper understanding of the subject being captured. As students progress through the exercises in this class, they will develop a better understanding of the forms being observed and become more skillful in representing them. Improving drawing skills on paper can improve digital drawing skills. ART121 is an introduction to basic drawing concepts and provides a basic foundation in drawing. The course emphasis will be on traditional compositional theory, drawing principles, fundamentals of observing and describing form. Students will gain a strong understanding of tonal and dimensional perspective.

**ART2310 Intermediate Drawing**

Life doesn't stand still, and neither should art. This course further explores the drawing techniques established in Beginning Drawing. Students will concentrate on increasing drawing skills with respect to lighting, texture and spatial interpretation, and infusing the "smoking gun" aspect of lifelike action in compositions. Students will learn how to use color in drawing and to make images come to life. Individual

drawing assignments and the development of a final portfolio and sketchbook will be emphasized. The Wacom Tablet will be introduced in the latter part of this course.

**ART2340 Storyboarding**

This course unveils the art of visual storytelling. Storyboarding is an important skill for beginning directors to develop to pre-visualize shots and sets. It is also a critical skill in creating animation sequences and is important to the multimedia developer in planning the needs of a project. Students apply storyboarding techniques to scripts by accurately showing camera angles, placement of the actors, etc. Emphasis is placed on accuracy and presentation.

**ART2360 Basic Character Figure Drawing**

This course explores a full range of techniques and artistic viewpoints to animate drawings. Emphasis will be on learning to sketch the human and animal forms in both stick and geometric figures studies. Students will learn the skeletal and muscular make up of the figures. Studies in the form of homework assignments will be required as well as in class work. Long and short poses will be interspersed with exercises specifically designed to allow artists to heighten perceptions. Students will practice using the formulas for making character sketches more realistic by understanding the volumetric description and underlying structure of the human form. This course provides the most thorough experience drawing from live models.

**ART3550 Character Design**

This course will take students through a complete character design, starting with conceptual sketches and concluding with multiple representations of their artistic creation. Topics covered include drafting a backstory and personality history, determining proportions, relative size, range of motion and creating a turnaround (front, back and 3/4 view) and action poses. Students will be expected to work in both traditional and digital media.

**ART3560 Environmental Design**

Environmental design requires combining theories of architecture, landscape design and the cinematographer's eye to create environments with dramatic lighting, mood-setting characterizations, compound perspectives and a mix of functionality and aesthetics. By applying principles of design and flow to existing knowledge of tools and techniques, students will create immersive and interactive environments that aren't merely background noise, but a part of the complete experience.

**DVA1100 Lighting and Environment Design**

This course introduces the student to the theories and techniques used in lighting and scene design when creating a setting for digital video, animation or game projects. Script analysis and interpretation may be used to teach the principles of style, form and balance in scene design. Lighting subjects include the psychological effects of light and color. Students will be introduced to the basic lighting elements of visibility, selective focus, modeling and imparting mood to a scene.

**DVA2500            3D Modeling**

This class will explore modeling with polygons, patches, NURBS and subdivision surfaces and will discuss when each is appropriate. Students will study organic and hard surface modeling. Topics will also include a review of the history of 3D computer graphics, an overview of the current state of the 3D industry, an introduction to the current technology being used and a survey of the skills needed to work in today's industry. Areas of emphasis include sculpting tools, extruding, Boolean, lofting, revolving and deformers. Students will complete exercises that build toward a final project. This class will also introduce basic lighting, texturing, rendering and animation techniques.

**DVA2550            3D Animation**

This course introduces the student to industry-standard 3D techniques used to animate objects and characters. Students will learn fundamental character animation principles. Topics include key frame animation, motion blending, motion capture, interpolation, storytelling and basic cinematography. Concepts are illustrated using animated footage. Students animate 3D objects and characters for exercises that build toward a final project. Areas of emphasis include inverse kinematics, constraints, deformers, custom attributes and lip sync. Students will also explore expressions, particle systems and dynamics.

**GAM1100            Introduction to Game Art**

This course introduces the student to industry-standard game art for video games. Students will recognize, differentiate and analyze game art for 2D and 3D video games art and design. Topics include video game art and design history. Video game art assets concepts are illustrated using 2D Art assets made in Adobe Photoshop. Students learn to create art assets that are used in a 2D and 3D final game project. Areas of emphasis include 2D and 3D video game art and design history, as well as 2D and 3D video game animation loops, and the techniques used for game art like box modeling, UV mapping, 0-to-1 texturing, color map, bump map, normal map, specular map, Alpha channels, decals, sprites, backgrounds and foregrounds, layer and palletize, fonts and color theory.

**GAM2430            2D Game Assets**

This course finalizes the student 2D digital art skills in the industry-standard 2D techniques used to create objects, backgrounds and characters for 2D video games like XNA for Xbox 360. Students will produce 2D art using the principles used to create 2D video games and learned in GAM 110. Topics include 2D game art styles, decals, texturing styles, interface, backgrounds, props, ground, sprites, layers and motion parallax. Concepts are illustrated using art assets for a 2D XNA game engine. Students create 2D art assets for the Microsoft Xbox and Xbox Live Arcade that build toward a final game art assets project. Areas of emphasis include alpha channels, layers, tiles, decals, perspective, sprites, particles, backgrounds and foregrounds, formats and palletize. Students will also explore compression, fonts, packaging and interface design for an XNA Xbox 360 game and Xbox 360 Live Arcade 2Dgame.

**GAM3430            Game Modeling**

Game engines and environments require specialized approaches to 3D modeling, texturing and rigging which differ from Cinematic CGI techniques. Students will explore various techniques for low polygon modeling, exporting to various formats and game engines, unwrapping and texturing for games, and the use of complex techniques such as Normal Mapping and level-of-detail creation. After the course, the student will be able to construct low polygon assets for games or real-time technology. Using 3DS Max, students will create models from concepts drawings or photos including basic mapping and details.

**GAM3450            Game Animation**

This course covers techniques for character animation as they apply to gaming. Topics will include sequencing periodic animation such as walking, running and attack cycles. Students will learn to integrate motion capture data with hand keyed animations. Students will apply these techniques to a characters skeleton and mesh in interactive environments. Rigging and hierarchies for game engines will also be explored, as well as collision models and the creation of complex elements, such as vehicles and interactive environments.

**GAM3470            Game Texturing**

This course offers a look at the creation and implementation of textures created from digital media. The applications for the creation of realistic and efficient texture maps for the creation of games for 2D and 3D platforms will be discussed.

**GAM4100            Advanced Game Texturing**

This course gives students hands-on experience in creating materials and textures for the 3D video games, applying those materials to objects and characters. Students will focus on creating textures from scratch, using photo manipulation techniques as well as Photoshop procedural texturing methods, then applying them using proper UV video game setup. Individual and team-oriented projects will be applied.

**GAM4450            Advanced Game Animation**

Students will refine the process of character rigging and animation techniques needed for current game animation trends. The utilization of motion capture files and game engine import/export strategies will be addressed. The development of common and custom animations for games and characters will be emphasized. The use of motion capture and motion capture data will also be explored in this course.

**MTM1010            Digital Imaging**

This course is an overview of the primary industry software tool (Adobe Photoshop) used in the creation of 2D computer graphics. Students will learn the commands and interfaces of industry-standard raster graphics software applications in order to create and manipulate 2D images.

**MTM2220            Texturing and Surfacing Using  
Photoshop**

Students will explore all aspects of textures that will be useful for digital artwork, 3D modeling or within the games they design. Students will build a substantial library of textures throughout this course, differentiating between different types of surfaces and materials. Students will determine what makes up the surface and what gives the material its unique quality, identify the common differences between smooth and textured samples, and look for patterns, lines, specks and dots that describe these textures. A significant portion of this course will be dedicated to the creation of these textures and surfaces. Students will begin duplicating these textures using Adobe Photoshop's powerful filter, layer and channel tools. The class will be divided into collaborative teams that will create a texture, and a tutorial for each texture will be developed.