Animation (ANI)

Courses

ANI 122 Digital Rendering for Animation (3 Hours)
This basic digital rendering course is designed for animators and game artists. Students will study basic and advanced digital rendering elements and principles. Students will produce digitally rendered elements used in animation and gaming, including realistic and stylistic character designs, vehicles, architecture, and environments.

ANI 125 Introduction to 2D Animation (3 Hours)
In this course, students will study the fundamental principles of 2D animation; key principles in which all expressions of animation (traditional, digital, claymation, 3D, etc.) are built upon. These concepts include persistence of vision, timing, spacing, arcs, basic body mechanics, character performance, lip syncing, and other essential skills that form the bedrock for professional, industry-standard productions. By the end of the course, students will be able to understand and utilize their newly developed skill sets to craft their own fully animated scenes.

ANI 130 Motion Graphics and Effects* (3 Hours)
Prerequisites or corequisites: CDTP 135 or CDTP 190.
In this course the student will create motion graphics and effects using 2D and 3D elements. Students will create render passes, create 3D elements and effects, and then composite the layers back into After Effects for further manipulation and polish. Students will also explore rotoscoping, motion tracking, motion stabilization, animating effects, text and shape animation, create and set up 2D and 3D text, lighting, materials and basic compositing.

ANI 150 Introduction to 3D Modeling, Texturing and Materials (3 Hours)
This course introduces 3D modeling, texturing, materials, lighting and rendering processes. Students will learn industry production pipelines and create high polygon and low polygon models. Students will also learn how to UV map, create photorealistic textures, add materials, light and render their scenes. Using industry standard software, students will create construction and texture worksheets for portfolio/showreel.

ANI 200 Advanced 2D Animation* (3 Hours)
Prerequisites : ANI 125.
Students who have successfully completed the Introduction to 2D Animation course will be tasked with advanced exercises and projects designed to expand their knowledge of both traditional hand-drawn animation and 2D animated rigs. These advanced topics include 2D effects animation, human body mechanics, advanced acting principles, intro to quadruped mechanics, and constructing/animating 2D character rigs with animation curves.

ANI 210 Digital Sculpting (3 Hours)
In this course students will create basic organic and hard-surface sculptures using a digital 3D software medium. Students will explore production pipelines, basic and advanced digital sculpting techniques, and detailing. Students will also demonstrate the application of materials, color, lighting, and rendering.

ANI 220 Computer Graphics Environments and Animation* (3 Hours)
Prerequisites : ANI 150 or Department approval.
In this course, students will learn how to develop and produce 3D models and renders of studio, interior, and exterior lighting 3D environments. The process of modeling for film and commercial environments and a range of simple to complex lighting and rendering techniques will be covered. 3D camera control tools, basic to advanced animation techniques, and advanced materials and shaders will be explored. Students will also be introduced to render passes and render layers, and composite the rendered images into a polished animation product.

ANI 235 Character Modeling and Rigging* (3 Hours)
Prerequisites : ANI 150.
In this course, the student will create a character using high-end 3D software. Students will explore character design, organic modeling, photorealistic texturing, character rigging, create facial expression shapes, character posing, and creating a diorama for portfolio presentation. Students will also explore advanced modeling techniques; clothing, hair, and advanced texture materials will be covered.

ANI 245 Introduction to Character Animation* (3 Hours)
Prerequisites or corequisites: ANI 150.
Students will develop and refine foundational skills in 3-dimensional (3D) character animation. Students will demonstrate the fundamental principles of animation and apply them using industry-standard 3D animation software. Students will learn how to navigate a 3D interface, create, and edit animation curves and layers, explore bi-pedal body mechanics, and craft believable and engaging character performances. The class will equip students with the essential skills to express their creativity and imagination compellingly.

ANI 252 Advanced 3D Modeling* (3 Hours)
Prerequisites : ANI 150.
In this course students will learn advanced modeling methods and build a deeper understanding of industry production pipelines to create highly detailed polygon meshes. Students will produce portfolio work using industry standard software using advanced modeling, texturing, and rendering techniques. Students will also learn how to create advanced shaders, topology techniques, and layered textures as well as basic lighting, and portfolio organization will be covered.

ANI 255 Advanced Animation and Effects* (3 Hours)
Prerequisites : ANI 150.
The Advanced Animation and Effects course introduces students to various particle effects including rigid and soft body dynamics. Students will create effects like rain, snow, lightning, fire, and different types of shatter. The students will also simulate and render various visual effects, including liquid, cloth, and hair.

ANI 258 Game Level Design* (3 Hours)
Prerequisites or corequisites: ANI 150.
This course provides an introduction to game level design and how to create interior and exterior levels using the same state of the art editing tools that are used in high-end video games. Students learn to build white box levels first and then populate the level with detailed original game artwork. Students will create terrain maps and textures, and interactively place static meshes into the game editor to enhance the visual aspects of the level. Students explore how to build a map that is purposeful and exciting to play.

ANI 260 Animation Capstone* (3 Hours)
Prerequisites : ANI 125.
Prerequisites or corequisites: ANI 252 and ANI 255.
Animation Capstone is the culmination of the skills and tools learned throughout the animation program. In this course, a student will select an instructor-approved project (or projects) focused on the facet of the industry they are most interested in pursuing professionally. The project(s) parameters will vary according to the focus of the student, but can include an animated short, character modeling portfolio, visual development showcase, 3-D architecture and environment creation, and more. Once a project (or projects) has been selected, the student will be tasked to complete specific milestones concluding in a final presentation of their work.

ANI 265 Advanced Character Animation* (3 Hours)
Prerequisites : ANI 245.
Students will continue building on the principles introduced in Character Animation by exploring advanced character animation concepts such as performance driven acting, facial animation, lip syncing, multi-character situations, and an introduction to quadruped/animal body mechanics. By the end of class, students will understand how to craft a compelling animated scene from reference to polish.

ANI 270 Visual Effects and Compositing* (3 Hours)
Prerequisites or corequisites: ANI 220
This course emphasizes the importance of breaking down visual effects shots for effective compositing. Advanced topics will include 2 dimensional/3 dimensional motion tracking, rotoscoping, garbage mattes, 2D/3D visual effects, blue screen or green screen removal, traveling mattes, image correction, lighting and shading. An introduction to the production pipeline used in professional film and TV work will also be covered.

ANI 275 Animation Career Preparation* (3 Hours)
Prerequisites : ANI 125.
Prerequisites or corequisites: ANI 255.
This course will provide animation majors instruction in the presentation of his or her work in a digital portfolio format of professional quality. A website, resume and cover letter will be produced. Self-promotion, networking, job searches and interview skills will also be covered.