

ANIMATION (ANI)

ANI 101 | ANIMATION FOR NON-MAJORS | 4 quarter hours (Undergraduate)

Course introduces a variety of basic animation techniques for cinema and gaming, such as hand-drawn, cutout, stop-motion and (very basic) 3D, with an emphasis on the use of computer technology. Examples of diverse animation genres and styles (experimental, cartoon, anime, special effects, computer games) from different cultures will be screened and discussed. Students will explore the unique qualities of the medium through a series of hands-on projects that can be adapted to their own personal interests. They will learn about professional animation process (storyboard and animatic) during the production of a final project that encourages them to consider the role and potential of animation in our society.

ANI 105 | MOTION GRAPHICS FOUNDATIONS | 4 quarter hours (Undergraduate)

This course introduces the basic principles of composition, color, light, and motion as applied to cinema and animation. Design for screen, staging, effective use of text, graphical elements, video, and motion are covered. These skills will be applied in projects that stress conceptual and technical development. Students who have completed GD 105 or ART 105 are advised NOT to take ANI 105. Those courses cover similar material and may be substituted in place of ANI 105.

ANI 150 | AFTER EFFECTS WORKSHOP | 2 quarter hours (Undergraduate)

This class will introduce students to the fundamentals of After Effects, including key-framing, compositing and rendering. Topics and techniques covered during lectures will be reinforced through in-class exercises and projects. (2 quarter hours)

ANI 151 | ADOBE ANIMATE WORKSHOP | 2 quarter hours (Undergraduate)

This class will introduce students to the fundamentals of creating animation using Adobe Animate, including tweening and frame-by-frame drawn animation. This class does not cover Action Script programming. Topics and techniques covered during lectures will be reinforced through in-class exercises and projects. (2 quarter hours)

ANI 152 | TVPAINT WORKSHOP | 2 quarter hours (Undergraduate)

This workshop course offers a complete basic knowledge of using TVPaint animation software to produce hand-drawn animation. Topics and techniques covered during lectures will be reinforced through in-class exercises and projects. Prerequisite(s): none (2 quarter hours)

ANI 153 | HARMONY WORKSHOP | 2 quarter hours (Undergraduate)

This workshop course offers a complete basic knowledge of using Toon Boom Harmony animation software to produce a hand-drawn animation. Topics and techniques covered during lectures will be reinforced through in-class exercises and projects. PREREQUISITE(S): None (2 quarter hours)

ANI 154 | DIGITAL PAINTING WORKSHOP | 2-2.25 quarter hours (Undergraduate)

This course will investigate the image making possibilities of TVPaint and Photoshop in the creation of digital paintings and animations. The principles and practice of traditional painting (oil, acrylic and watercolor) will be applied to a digital image making practice, including the use of custom made brushes, filters, opacity, layer modes and texturing tools to create realistic and abstract imagery. PREREQUISITE(S): None.

ANI 155 | CINEMA 4D WORKSHOP | 2-2.25 quarter hours (Undergraduate)

This course focuses on Cinema 4D, a 3D modeling, animation, and rendering software that is the standard for 3D motion design work. The class will include demonstrations and workshops on the fundamentals of 3D motion graphics and animation. Tutorial topics will include: user interface, modeling, materials, lighting, cameras, 3D type, and compositing. Examples of work done by industry professionals will be examined each week. PREREQUISITE(S): None.

ANI 156 | UNREAL ANIMATION PRODUCTION WORKSHOP | 2-2.5 quarter hours (Undergraduate)

This course will introduce animators to the use of the Unreal Engine for the production of 3D animated films and TV shows. Topics include connecting Maya modeling and animation with UE, using and creating Blueprint scripting, editing using the Sequencer, building environments, utilizing UE lighting and effects, and real-time output.

ANI 230 and ANI 231 are prerequisites for this class.

ANI 201 | ANIMATION I | 4 quarter hours (Undergraduate)

This course is an introduction to the art and practice of animation. It is a studio-based class, which will emphasize learning through process, experimentation and creation. Students will explore the limitless possibilities of animated motion in the context of cinema, computer games and the Internet. All genres and styles are within the scope of this class, including Anime, cartoons, computer game art, experimental art and special effects. In addition to how, we will also explore and discuss why, as well as the role and potential of animation in our society and its place in other cultures. This course is designed for the student who wishes to pursue further study in the field, and provides intensive practice of the basic skills and methods through production.

ANI 105 or ART 105 or GD 105 or DES 141 is a prerequisite for this class.

ANI 206 | HISTORY OF ANIMATION | 4 quarter hours (Undergraduate)

This course is an introduction to the history and development of the field of animation. We will explore this subject from various perspectives: by chronology, from its prehistory before the invention of film to the present day; by form, including method and medium; by culture, comparing the US to Japan, Russia, Europe and others; by subject; and by personality, concentrating on the figures who have shaped the art form and continue to influence it through their example. Students are expected to bring an enthusiastic interest in the medium, and to devote serious effort to reading about, viewing, researching and discussing animation and the artists who have created it.

ANI 207 | ANIME HISTORY | 4 quarter hours (Undergraduate)

This course is an Introduction to the history, development and cultural significance of Japanese animation. We will explore how historical and cultural concepts of Japan have translated to the screen, as well as the influence of economic forces and changing technology. Students will gain an insight into anime's origins and cultural influences through an examination of the World War II, post-war, mid- and late-twentieth-century historical periods of Japan. This class will analyze particular examples of anime and anime artists in their historical context, emphasizing the use of primary sources.

**ANI 220 | STORYBOARDING I | 4 quarter hours
(Undergraduate)**

This class will focus primarily on storyboarding and the aesthetic and practical uses of research, treatments, drawings, and found images as tools in the production of animations, films and game cinematics. Students will complete a series of assignments that will utilize different methods of finding inspiration to make a cohesive, narrative work. Various methods used in both commercial and independent productions will be presented as examples, and pre-production work from both live action and animated films will be viewed throughout the quarter. Students will create several storyboards for short films, write treatments, and research design options.

ANI 101 or ANI 201 or FILM 101 is a prerequisite for this class.

**ANI 222 | ILLUSTRATION FOUNDATIONS | 4 quarter hours
(Undergraduate)**

This course will focus on improving the basic skills needed for creating concept art and storyboards for animation and games. Areas of focus include practical perspective, technical rendering, observational drawing and color theory. These skills will be applied in basic prototyping projects. **GD 105 or ART 105 or ANI 105 or DES 141 is a prerequisite for this class.**

**ANI 225 | MAKING COMICS | 4 quarter hours
(Undergraduate)**

This course introduces students to the components of graphic narrative, including superhero and alternative comics, comic strips, manga, and graphic novels. Students will learn fundamental materials and techniques, including penciling and inking, digital painting and coloring, and publishing, and create their own graphic narratives. The course will also provide an overview of the history of comics and graphic storytelling, and their relation and importance to the art of animation.

ART 106 is a prerequisite for this class.

**ANI 226 | TRADITIONAL MATERIALS FOR ANIMATION | 4 quarter hours
(Undergraduate)**

This course will have a rotating focus on various traditional art making practices to broaden animation students visual vocabulary beyond the digital. Students will use hands-on art making processes and strategies to explore color theory, tone, volume, texture, line quality, as well as strategies to incorporate them into their animation practice. Topics may include: collage, sculpture, puppets, fiber arts, wet or dry media on paper. Course is repeatable with different topics.

**ANI 230 | 3D DESIGN & MODELING | 4 quarter hours
(Undergraduate)**

Students will use computer modeling to explore the principles of 3-dimensional design. Projects involving object, character and architectural modeling will emphasize the aesthetic concepts of spatial proportion (scale, angle and position), silhouette, negative space, rhythm, balance, light/shadow and texture. Students will emerge with the ability to create well designed 3D models, and be familiar with the basics of polygonal modeling, texturing, lighting and rendering for animation, computer games and cinema. **PREREQUISITE(S): None.**

**ANI 231 | 3D ANIMATION | 4 quarter hours
(Undergraduate)**

In this course, students will be introduced to animation in 3D through the use of traditional animation principles. Topics will include: animation fundamentals, keyframing, splining, animated cameras, rendering, and an introduction to rigging basic characters. Emphasis will be placed on using the computer as a tool to create animation for film and games.

ANI 230 is a prerequisite for this class.

**ANI 240 | INTRO TO ANIMATION PRODUCTION | 4 quarter hours
(Undergraduate)**

This course will concentrate on facilitating the student's production of animation projects. The topics of idea generation, experimentation, problem solving, planning and time management, and the process of critical analysis will be applied to the student's work, with the choice of animation technique, content and form left to the individual. Students will learn the importance of bringing projects to completion.

ANI 321 OR (ANI 231 and ANI 201 or ANI 101) are prerequisites for this course.

**ANI 300 | 3D CHARACTER ANIMATION | 4 quarter hours
(Undergraduate)**

This course explores the art and techniques for character performance in 3D. Students will study and employ fundamental principles for character animation beginning with the essentials of blocking and inbetweening, and continuing with core mechanics including walk cycles, expressions, and lip sync. Students are required to animate weekly shots culminating in a final lip synced character performance.

ANI 231 is a prerequisite for this class.

**ANI 301 | ADVANCED 3D CHARACTER ANIMATION | 4 quarter hours
(Undergraduate)**

This course introduces advanced concepts in 3D character animation that are necessary for achieving professional quality results. Students will hone their skills through the study of advanced techniques for animating multiple characters, creating continuity, and building character through performance. An emphasis will be placed on the exploration of movement for developing personal style.

ANI 300 is a prerequisite for this class.

**ANI 302 | 3D AUTO-RIGGING WORKSHOP | 2-2.5 quarter hours
(Undergraduate)**

In this course students will learn to use one of the most comprehensive and advanced auto-riggers available to create professional level character rigs quickly and effectively. Topics covered will include biped, quadruped, and custom rigs as well as custom controls, facial rigging, and blendshapes. Students who already have completed character models will be able to use the workshop to prepare them for use in 3D production. **PREREQUISITES: ANI 230 or equivalent experience in Maya.**

ANI 230 or equivalent experience in Maya is a prerequisite for this class.

**ANI 310 | MOTION CAPTURE | 4 quarter hours
(Undergraduate)**

This course is a workshop focusing on realistic character motion obtained through motion capture. Students will learn the motion capture pipeline, including character skinning and mapping, planning and directing motion capture sessions, applying motion to a character and motion editing.

ANI 231 OR GPH 338 is a prerequisite for this class.

**ANI 311 | 3D PRINTING WORKSHOP | 2-2.5 quarter hours
(Undergraduate)**

3D printers have become an indispensable tool for artists, manufacturers, and designers for quick physical realization of everything from character models to product designs. In this workshop students will get a complete introduction to 3D printing. Students will learn the basics of FDM, SLA, and SLS printing including assembly, calibration, slicing, model preparation, and materials. Various techniques in modeling will be covered from organic sculpting in Zbrush to accurately engineered models in Fusion. Personal projects and experimentation are encouraged.

ANI 230, ANI 360, or EXP 210 is a prerequisite for this class.

**ANI 315 | SOUND DESIGN FOR ANIMATION | 4 quarter hours
(Undergraduate)**

This class will explore concepts and practical techniques students need in order to address many of the unique requirements associated with creating audio for animated films. Students will begin with an introduction to the aesthetics of film sound and audio production before moving on to build practical recording and mixing skills. Lectures, readings, and practical projects will give students a working knowledge of how to approach and create the immense range of styles of audio for animated films.

**ANI 320 | HAND-DRAWN ANIMATION | 4 quarter hours
(Undergraduate)**

This course is devoted to the complex aspects and techniques of classical drawn animation required to create convincing movement, frame to frame consistency, and character acting. Beginning with a review of the fundamentals and progressing to more complicated techniques, students will learn how to create unique and technically accomplished drawn animation as well as methods for its eventual clean-up, inking and coloring. Contemporary uses of digital technology to enhance production will be emphasized.

(ANI 201 or ANI 101) and (ILL 200 or DES 111 or ART 106) are prerequisites for this class.

**ANI 321 | ANIMATION MECHANICS | 4 quarter hours
(Undergraduate)**

Students in this course will rigorously investigate the foundational aspects of animation through traditional and digital methods. Basic principles, including timing, spacing and the abstraction of movement, will be analyzed and questioned through experimentation. Students will experience how the process of making work can be used to generate emergent ideas, and be challenged to push the art form beyond the accepted conventions.

ANI 201 (or ANI 101) is a prerequisite for this class.

**ANI 322 | ANIMATION HISTORY & PRACTICE | 4 quarter hours
(Undergraduate)**

The history of animation is explored with a focus on inspiring the students' own work. Students will be involved in an intense study of animation throughout history and around the world, and are required to view a large amount of work outside of class. Animations will be grouped by time period, theme, and/or technique. Through writing and group discussions they will examine the significance of the technique and subject matter. They will put this study into practice by creating short animated films based on their reactions to the films.

ANI 240 is a prerequisite for this class.

**ANI 324 | STORYBOARDING II | 4 quarter hours
(Undergraduate)**

Students will elaborate on the skills from ANI 220 to create sophisticated pre-production for their own films, game cinematics and animations. Emphasis is placed on advanced story development, professional artistry and pre-visualization techniques such as converting a script to visual story reels or animatics. Students will complete the course with a fully-developed animatic for the story of their choosing.

ANI 220 is a prerequisite for this class.

**ANI 325 | VISUAL STORYTELLING | 4 quarter hours
(Undergraduate)**

This class focuses on storyboarding and animatics as key pre-production tools for animation, film, and game development projects. Areas of focus include narrative development, drawing, performance, and editing. Students will apply these techniques to create an animatic: a comprehensive time-based draft for a short film.

ANI 240 is a prerequisite for this class.

**ANI 326 | VISUAL CONCEPT DEVELOPMENT | 4 quarter hours
(Undergraduate)**

This course focuses on visual development and style guides for animation, cinema and game projects. Coursework involves character design, environmental design, prop design, lighting, color, texture and layout. Students will practice visual research, drawing and an array of digital tools to build the skills necessary to create an immersive world with a cohesive look and feel.

(ILL 200 or DES 111) and ANI 240 is a prerequisite for this class.

**ANI 327 | HAND-DRAWN CHARACTER ANIMATION | 4 quarter hours
(Undergraduate)**

In this course, students will be introduced to the traditional art of hand-drawn character performance. Topics covered will include acting, body mechanics, volume, weight, walk cycles, dialogue and facial expression.

ANI 321 is a prerequisite for this class.

**ANI 328 | ANIMATION FIGURE STUDY I | 4 quarter hours
(Undergraduate)**

This studio class will focus on the drawing of the figure for use in animation, storyboarding, and character design. Students will gain a solid foundation in posing, gesture, and anatomy, and will learn how to give a character a sense of emotion and purpose. Students will gain experience and improve their drawing technique through weekly assignments and in-class exercises, including drawing from a live model. In addition to the regular meetings with the instructor, this course will include an extra 90 minute figure study lab with model per week, supervised by a graduate assistant.

ART 106, ILL 200, or DES 111 is a prerequisite for this course.

**ANI 329 | STORYBOARDING III | 4 quarter hours
(Undergraduate)**

This course elaborates on the skills from ANI 324 Story Development. Students will develop advanced techniques for storyboarding, staging, pre-production, character development and performance to support their original narrative stories. Rigorous exercises will emphasize visually dynamic composition, figure drawing applied to storyboarding, editing, continuity and sophisticated use of camera. Students will complete a final advanced storyboard and animatic edited with sound, which can be used as a portfolio piece for any aspiring storyboard artist.

ANI 324 is a prerequisite for this course.

**ANI 330 | 3D CHARACTER MODELING | 4 quarter hours
(Undergraduate)**

This course will instruct students in the process of 3D polygonal based character modeling. Students will learn professional techniques for building quad-based polygon meshes with an extra emphasis on proper topology to help prepare their model for rigging. Students will learn complete UV unwrapping for the entire figure as well as effective techniques for advanced texturing.

ANI 339 is a prerequisite for this class.

**ANI 332 | 3D RIGGING | 4 quarter hours
(Undergraduate)**

Students will study the processes and techniques for creating professional quality character rigs. Following a professional production workflow, students will create character skeletons, learn aesthetic and technical considerations for skinning, learn techniques for optimal parameterization, and learn to construct character animation controls.

ANI 231 is a prerequisite for this class.

**ANI 333 | ADVANCED 3D RIGGING | 4 quarter hours
(Undergraduate)**

This course will teach students inorganic rigging of vehicles and machines as well as advanced techniques for characters such as blend shape facial expression setups and squash and stretch. Additional topics will include quadruped rigging and 3D scripting for creating user interfaces and automating complex processes.

ANI 230 and ANI 231 are prerequisites for this class.

**ANI 334 | VIRTUAL CINEMATOGRAPHY | 4 quarter hours
(Undergraduate)**

This course introduces real world cinematic techniques within a computer graphics environment. Emphasis is placed on camera movement, composition, pacing, lighting, and aesthetics.

(VFX 200 or VFX 374) and ANI 230 are prerequisites for this class.

**ANI 336 | 3D MODELING STUDIO | 4 quarter hours
(Undergraduate)**

Students in this course will broaden and improve their overall skill set by learning a range of modeling techniques. Students will complete several smaller projects that cover topics including speed modeling, efficient low-poly modeling, hard surface modeling, projection texturing, and advanced UV unwrapping techniques. The course will culminate in a final project in which the student will propose and complete an advanced model of their own design.

ANI 230 or GPH 250 is a prerequisite for this class.

**ANI 337 | ENVIRONMENT MODELING | 4 quarter hours
(Undergraduate)**

This course covers the planning, production and implementation of environment models for games. The term "environment model" includes landscape, exterior architecture, interior architecture, and both organic and man-made props. Topics include visual art direction, setting mood, developing narrative and cinematic lighting strategies. After creating assets in a modeling program, students will implement them in a game engine editor to learn about game engine requirements, limitations and pipeline. Prerequisite: ANI 230.

ANI 339 is a prerequisite for this class.

**ANI 338 | 3D ORGANIC MODELING | 4 quarter hours
(Undergraduate)**

In this course students will learn to create highly detailed creatures, characters, and props for both film and games. Students will learn a variety of techniques for working with high density polygon meshes and 3D painting in order to generate detailed texture and normal maps. This course will combine a traditional approach to sculpting and a foundation in human anatomy for quick generation of concepts for 3D models. An emphasis will be placed on developing efficient pipelines to streamline the entire process from modeling to rendering.

ANI 339 is a prerequisite for this class.

**ANI 339 | 3D MODELING AND SHADING | 4 quarter hours
(Undergraduate)**

In this course students will study the processes and techniques for creating 3D assets, texturing, and lighting in 3D. The procedures covered in this course include creating and preparing models for texturing, building and manipulating shading networks, laying out UVs, and painting textures. Topics in lighting will be approached from the foundation of traditional cinematography, focusing on driving both mood and story. In addition, students will utilize complementary skills in lighting and texturing to create high-quality renders to showcase their 3D assets and environments.

ANI 230 is a prerequisite for this class.

**ANI 340 | 2D ANIMATION PRODUCTION | 4 quarter hours
(Undergraduate)**

Students will create short 2D animated films. Students will be expected to exhibit sophisticated technique, storytelling, and content in their films, and will work to develop as creative artists through multiple critiques throughout the term. Students should show an awareness of how much work and time are required to complete their projects, and the ability to plan accordingly.

ANI 220, ANI 240 & Junior Standing are prerequisites for this class.

**ANI 341 | ADVANCED ANIMATION PRODUCTION | 4 quarter hours
(Undergraduate)**

In this course students will complete an animated short film. Students are expected to demonstrate a high level of technical skill in design and animation, while learning various methods of project planning, management, and finishing techniques for animated projects.

ANI 240 AND one of the following animation production courses:

ANI 340, ANI 342, ANI 358, ANI 360, ANI 371, or ANI 382

**ANI 342 | 3D ANIMATION PRODUCTION | 4 quarter hours
(Undergraduate)**

In this course, students will build on their skills from Animation Production I to create animated films in 3D. Students will learn the essentials of 3D production including; creating 3D animatics, setting up production pipelines, and using efficient techniques for modeling, rigging, and animating. Workflows for both individual and collaborative projects will be introduced. Students will be expected to exhibit sophisticated technique, storytelling and content, and work to develop as creative artists through self-critique. The successful planning and completion of projects on time will be an essential focus of the course.

(ANI 231 or ANI 240) and (ANI 220 or ANI 332) are prerequisites for this class.

**ANI 343 | 3D ANIMATION FOR GAMES & CINEMATICS | 4 quarter hours
(Undergraduate)**

In this course students will learn how to apply their animation skills for real-time interactive game development while simultaneously improving their knowledge of body mechanics and animation techniques. Students will learn how to develop core playable-character game animations such as run cycles and attacks, as well as how to implement these animations into a game engine and adjust parameters to achieve a finalized performance. Additional focus will be on learning to create cinematic shots centered around driving story and introducing important gameplay concepts.

ANI 231 is a prerequisite for this class.

**ANI 344 | VISUAL DESIGN FOR GAMES | 4 quarter hours
(Undergraduate)**

The stages of development in the visual direction of a video game will be identified and detailed, and students will participate in the creation of the visual art direction of a product, giving special attention to the design of 3D models and animation. Visual Design for Games topics include: creating visual direction, concepting, art bibles, art production, and post-production strategies. Students will create proposals, create concepts, iteratively create artwork, and analyze competitive products.

ANI 230 and (ANI 105 or GD 105 or ART 105 or DES 141) is a prerequisite for this course.

**ANI 345 | CHARACTER DESIGN | 4 quarter hours
(Undergraduate)**

Students will be introduced to various methods of creating interesting and original character designs for animated films and games, and then put these approaches into practical use. Methods of creative concepting will include drawing, collage, sculpture and 3D mock-ups. Fundamental visual design and color principles will be stressed, along with the basics of caricature. Students will utilize their character designs in an animated short.

ILL 200 or (DES 111 and DES 141) is a prerequisite for this class.

**ANI 346 | GAME ART PIPELINE | 4 quarter hours
(Undergraduate)**

This course is an overview of the game Technical Artist's job, from production to infrastructure roles. Students learn how to design, optimize, and troubleshoot the game art production pipeline. They study a range of game art technologies from particle effects, camera post-processing, physically-based materials, advanced lighting, procedural world creation and more in the Unity game engine. Projects include building a shared game project using Perforce (source control) workflow, analyzing game performance, building and troubleshooting character rigs, and more.

ANI 230 and ANI 231 are prerequisites for this class.

**ANI 347 | ART FOR GAME MODS | 4 quarter hours
(Undergraduate)**

In this course, students will build on their skills from 3D Design & Modeling and 3D Environment Modeling to take an existing game in Unity and "re-skin" or modify it to create a different visual experience when played. They will work on collaborative projects while building good working knowledge of 3d art pipeline, materials, lighting, and game performance. They will be expected to exhibit proficiency in analyzing and understanding how game assets are constructed, breaking down and replacing components of existing art with their own, and debugging visual issues related to the introduction of new game assets.

ANI 337 or ANI 339 is a prerequisite for this class.

**ANI 348 | ANIMATION FIGURE STUDY II | 4 quarter hours
(Undergraduate)**

This studio course utilizing a live model will build on the solid foundation for use in animation, storyboarding, and character design learned in Animation Figure Study I. Principles covered will include tilt and twist, flow, and rhythm in figure drawings. The composition of the poses will also be examined observing the graphic value of the figure in silhouettes. Students will gain a working knowledge of muscular and skeletal anatomy, and apply this in building human forms from both observation and imagination. In addition to the regular meetings with the instructor, this course will include an extra 90 minute figure study lab with model per week, supervised by a graduate assistant.

ANI 328 is a prerequisite for this class.

**ANI 349 | ADVANCED CHARACTER DESIGN | 4 quarter hours
(Undergraduate)**

This course builds upon the fundamental skills learned in Character Design. Students will participate in exercises and group critiques to hone their visual design skills in the creation of original character designs for animated films and games. The course will culminate in the creation of a character pitch bible and character animation that adheres to industry standards.

ANI 345 is a prerequisite for this class.

**ANI 350 | ANIMATION PRODUCTION STUDIO | 4 quarter hours
(Undergraduate)**

This course uses the animation studio model to create a group project from start to finish. Students learn about the division of labor needed to produce larger projects as they experience working with others on a team.

ANI 240 is a prerequisite for this class.

**ANI 351 | ADVANCED MOTION CAPTURE STUDIO | 4 quarter hours
(Undergraduate)**

This course will enable students with motion capture experience to advance their technical skills and gain experience with practical application in the motion capture studio. Emphasis will be placed on advanced skinning and mapping techniques as well as complex motion capture sessions involving sets, props, and multiple actors. Students will be required to plan, arrange, and direct their own sessions in the motion capture studio.

ANI 310 or ANI 450 is a prerequisite for this class.

**ANI 352 | 3D SCRIPTING | 4 quarter hours
(Undergraduate)**

This is an introductory course in scripting for a 3D production environment. Students will learn and apply basic programming concepts in order to improve the productivity of animators and modelers. Using script, we will automate repetitive tasks, customize the interface, and create new tools. Students will gain a fundamental understanding of how a 3D animation package functions behind the interface.

ANI 230 and ANI 231 are prerequisites for this class.

**ANI 353 | ADVANCED 3D SCRIPTING | 4 quarter hours
(Undergraduate)**

In this course, artists and game designers will learn to use scripting to develop advanced tools and to automate complex processes for animation, modeling, and pipeline development. Through weekly projects students will learn to read, modify, and author scripts in order to bridge the artistic and technical features of a high end 3D software package.

ANI 352 is a prerequisite for this class.

**ANI 354 | 3D LOOK DEVELOPMENT | 4 quarter hours
(Undergraduate)**

In this course, students will study the processes and techniques of look development for 3D characters and hard surface assets for production. A look development artist is part of the creative team in a film or game and is responsible for designing and developing the final look of the film or game. The procedures covered in this course include painting procedural and hand-painted texture maps for 3D characters and hard surface assets, various projection techniques for texture painting, and building shaders with procedural and hand-painted texture maps. In addition, students will learn the basics of grooming techniques to create exquisite-quality look development for a 3D character. Finally, this course will cover various modeling, shading, lighting, and rendering techniques to develop an interior space with a storytelling aspect.

**ANI 355 | STOP MOTION ANIMATION | 4 quarter hours
(Undergraduate)**

The principles of stop motion character animation in real space are the emphasis of this intermediate level course. Students are introduced to basic armature building, lighting and scene composition, and the designing and fabrication of characters with a variety of materials. Contemporary uses of digital technology to enhance stop motion production will be explored.

ANI 201 (or ANI 101) is a prerequisite for this class.

**ANI 356 | EXPERIMENTAL ANIMATION | 4 quarter hours
(Undergraduate)**

This course introduces strategies for an experimental approach to animation. Students will study how experimentation relates to both concept and technique, and examine the work of classic experimental animators. This is a production class that requires students to produce a series of short animations in a variety of processes and styles.

ANI 201 (or ANI 101) is a prerequisite for this class.

**ANI 357 | HYBRID ANIMATION | 4 quarter hours
(Undergraduate)**

This production course focuses on combining multiple animation techniques. Students will complete the assignments and final project using mixed media with the choice of animation techniques, content and form left to the individual or group. Topics include pixilation, rotoscoping, and creative use of green screen, among others.

ANI 201 (or ANI 101) is a prerequisite for this class.

**ANI 358 | ADVANCED STOP MOTION ANIMATION | 4 quarter hours
(Undergraduate)**

In this course, students will build on their skills from Stop Motion Animation to create more ambitious projects. Techniques will cover complex puppets, detailed character performance to dialogue, 3D printing as applied to animation, lighting and motion control operation for camera moves. An emphasis will be placed on craftsmanship and effectively combining elements for stop motion filmmaking.

ANI 355 is a prerequisite for this class.

**ANI 360 | 3D MOTION GRAPHICS | 4 quarter hours
(Undergraduate)**

This course builds on motion graphics fundamentals covered in ANI260 Motion Graphics. In 3D Motion Graphics, students will work to develop a better understanding of how to develop a distinct visual style in both personal work and in work for clients. The course also focuses on gaining familiarity with contemporary styles and trends in professional motion graphics, and an awareness of Chicago-based motion graphics production.

ANI 230 or ANI 260 or VFX 200 is a prerequisite for this class.

**ANI 361 | MOTION GRAPHICS | 4 quarter hours
(Undergraduate)**

This course will introduce the student to effective communication using motion graphics, including its application in the areas of film titles, broadcast and commercial design, interactive media, and gaming. The combination of music, visuals and typography will be explored following the basic theories of kinetic composition and aesthetics. Students will study the history of the field, including the work of pioneers such as Norman McLaren, Saul Bass and Len Lye.

Sophomore Standing and one of the following: ANI 105, ANI 101, ANI 201, GD 105, ART 105, FILM 101, FILM 102 or DES 141 is a prerequisite for this class.

**ANI 362 | TITLE DESIGN | 4 quarter hours
(Undergraduate)**

This course explores the relationship between film and typography through an analysis of title design production in film, television, animation, and games. By studying examples from film and television history and the creative process behind those productions, students will develop an understanding of how to interpret and use typography to create narrative exposition on screen. Students will gain an appreciation and skill for working with text, image, and sound within time-based media that will add value, clarity, and sophistication to multimedia projects..

**ANI 363 | CINEMA AND ART FOR ANIMATORS | 4 quarter hours
(Undergraduate)**

This course will provide an overview of avant-garde film, video, and installation, and their relation to animation. Students will be introduced to the major styles and themes of alternative and experimental moving image work from the past hundred years. Cinema and Art for Animators places emphasis on moving image work that is not usually included in a survey of mainstream cinema or film history. Topics covered in the class include the avant-garde and kitsch, surrealism, experimental film, abstract animation, video art, camp, and video installation. In addition to readings, lectures and viewing films, videos, and installations, students will produce several animation projects that respond to the works and themes studied during the quarter.

**ANI 364 | ANIMATION RESEARCH SEMINAR | 4 quarter hours
(Undergraduate)**

This seminar introduces students to animation in the context of interdisciplinary thinking and creativity. Students will discuss their learning experiences across disciplines in the University, and practice making connections between this learning and their study of animation. PREREQUISITE(S): None.

**ANI 365 | CINEMA, ANIMATION, AND ART | 4 quarter hours
(Undergraduate)**

This seminar course focuses on animation and cinema from the standpoint of Modern and Contemporary art. Students study the major styles and themes of historical experimental film and video, and relate these topics to contemporary animation and independent cinema practices. Emphasis is placed on theory and criticism, and how it informs experimental work. Students are expected to discuss work and theory in a seminar setting, and to engage the class material in several research papers.

**ANI 366 | 3D MOVIE PRODUCTION | 4 quarter hours
(Undergraduate)**

This course provides an introduction to stereoscopy which is the creation of a 3D effect in still images and movies. The course covers the history of stereoscopy, the perceptual theories that make 3D images possible, and the technologies that can be used to create the effect of stereoscopic depth. Designed for both animators and live-action filmmakers, students taking this course will get hands-on experience producing stereoscopic images and movies using a variety of tools.

ANI 230 or FILM 250 (Formerly DC 275) is a prerequisite for this class.

**ANI 367 | MOTION DESIGN STUDIO | 4 quarter hours
(Undergraduate)**

This course focuses on advanced motion design projects within a studio based setting. Students will work alone and in small groups on personal and client-based projects. Demonstrations will concentrate on advanced 3D motion graphics with interactive photorealistic rendering. Students will also develop their portfolio sites and get advice on freelancing and finding work with studios.

ANI 360 is a prerequisite for this class.

ANI 368 | ADVANCED CINEMA 4D & REDSHIFT WORKSHOP | 2-2.25 quarter hours (Undergraduate)

This course builds on the 3D motion graphics fundamentals covered in ANI 155: Cinema 4D Workshop. This course will include demonstrations and workshops on advanced features and rendering techniques using Maxon Cinema 4D and Redshift, a production render engine used in the motion graphics and VFX industry. Students will follow industry design and production processes to create professional motion design and art. Topics will include: Using Mograph tools to drive Redshift parameters, shader building and compositing, Global Illumination principles and concepts, advanced lighting and texturing, camera attributes, compositing and optimization.

ANI 155 or ANI 230 or ANI 360

ANI 370 | ACTING FOR ANIMATORS | 4 quarter hours (Undergraduate)

This is acting training designed specifically for the needs of animators, as opposed to stage actors. Utilizing lecture/discussion, examination/deconstruction of animated and live-action film clips, home assignments and a few simple in-class improvisations, this course provides the animator with the skills necessary to deliver dynamic animated character performance. Assessment measures include oral and written reflective analysis, short animated character sketches and class participation.

ANI 201 (or ANI 101) is a prerequisite for this class.

ANI 371 | ANIMATED SERIES DEVELOPMENT | 4 quarter hours (Undergraduate)

This course covers the preparation and development of an animated series pitch bible. Students will explore and critique successful and unsuccessful series pitches, and become familiar with the variety of options. Topics covered will include the artist-run show, world building, cast character development and design, show visual design, sample stories, and possible venues. Students will develop their own original show concept, characters, and sample stories. By the end of the quarter students will produce and pitch a presentable show bible for their series, including character designs, storyboards, and a sample pitch animatic or short that might be presented for an open call by a network.

ANI 324 is a prerequisite for this course.

ANI 375 | PROFESSIONAL PRACTICE FOR ANIMATORS AND GAME ARTISTS | 2 quarter hours (Undergraduate)

Students will learn to prepare for and identify internship, employment, and graduate school opportunities. Students learn how to develop work for and prepare a portfolio/demo reel. The course will also include preparation of job search and promotional materials, including resumes. (2 quarter hours)

ANI 240 or GAM 245 or FILM 210 is a prerequisite for this class.

ANI 376 | POST-PRODUCTION WORKSHOP | 2 quarter hours (Undergraduate)

This 2 credit course guides students through the final stages of post-production and completes the Animation Capstone sequence. Students will work closely with faculty to meet the needs specific to their Capstone projects. This workshop will also focus on distribution for completed films, including film festivals, online forums, and gallery exhibition. (2 quarter hours)

ANI 394 is a prerequisite for this class.

ANI 378 | 3D DYNAMICS | 4 quarter hours (Undergraduate)

This course will provide an introduction to dynamic simulation and effects in 3D animation. Topics to be covered include hair & fur, fluid dynamics, smoke & fire, particles and cloth. An emphasis will be placed on how these effects can enhance an idea or narrative, establish mood, or even be used as a basis for experimental animation. Students will use traditional animation and visual design principles as a basis for creating several small projects.

ANI 230 and ANI 231 are prerequisites for this class.

ANI 379 | 3D COMPOSITING | 4 quarter hours (Undergraduate)

This course is designed to allow advanced compositors and animators to merge the 2D, 3D and/or live-action video worlds, drawing from a combination of techniques such as motion tracking, compositing, rotoscoping, hand-drawn, cut-out and 3D animation. The goals are to go beyond simply achieving technical proficiency, as we will also focus on learning principles of good animation in preparation for both artistic and commercial endeavors.

ANI 231 is a prerequisite for this class.

ANI 380 | ANIMATION PROJECT BLUELIGHT | 4 quarter hours (Undergraduate)

Production of an animated digital motion picture written by students or faculty within the School of Cinematic Arts. Students will work as crew under supervision of faculty members heading each of the various production areas. The goal is to work towards a completed animated digital motion picture suitable for festivals or distribution.

ANI 382 | DIGITAL PUPPET ANIMATION | 4 quarter hours (Undergraduate)

This class will introduce advanced production pipelines and techniques of 2D digital puppeting, with a focus on industry-standard software such as After Effects, Animate, and Harmony. Students will learn the evolution of puppet animation throughout history, the basics of visual design, rigging, and animating specific to 2D puppeted characters. Lectures and creative projects will give students the practical knowledge to create an organized workflow. Resulting in the ability to work independently and collaboratively to create well designed and animated 2D puppet animation.

ANI 201 (or ANI 101) is a prerequisite for this class.

ANI 390 | TOPICS IN ANIMATION | 4 quarter hours (Undergraduate)

Advanced study in animation focusing on a specific area each quarter. May be repeated for credit.

ANI 101 or ANI 201 or consent of the instructor is a prerequisite for this class.

ANI 391 | TOPICS IN ANIMATION WORKSHOP | 2-2.5 quarter hours (Undergraduate)

Specialized hands-on two-credit workshop instruction focusing on a specific advanced animation topic each quarter. May be repeated for credit.

ANI 201 (or ANI 101) is a prerequisite for this class.

ANI 392 | TOPICS IN 3D ANIMATION WORKSHOP | 2-2.5 quarter hours (Undergraduate)

Specialized hands-on two-credit workshop instruction focusing on a specific advanced 3D animation topic each quarter. May be repeated for credit.

ANI 230 is a prerequisite for this class.

**ANI 393 | TOPICS IN 3D ANIMATION | 4 quarter hours
(Undergraduate)**

Advanced study in 3D animation focusing on a specific area each quarter. May be repeated for credit.

ANI 230 or consent of the instructor is a prerequisite for this class.

**ANI 394 | ANIMATION PROJECT I | 4 quarter hours
(Undergraduate)**

This production-based course is the first half of a two-course sequence that provides the student with an Animation capstone experience. These courses connect the student's Animation coursework with their overall Liberal Studies coursework through three components: class lectures and discussions, independent analysis and reflection, and the creation of a significant animation project. Students will employ the knowledge they have learned and the skills they have acquired in all their Animation courses to date to produce a significant animation project. The course sequence is designed to be taken in two consecutive quarters.

ANI 341 or (ANI 340 and a concentration in Storyboarding and Character Design) or (ANI 342 and a concentration in Game Art or Visual Effects Animation, or major in CS+ANI) or (ANI 340 or ANI 342 and a concentration in Motion Graphics)

**ANI 395 | ANIMATION PROJECT II | 4 quarter hours
(Undergraduate)**

Continuation of ANI 394. This production-based course is the second half of a two-course sequence that provides the student with an Animation capstone experience. These courses connect the student's Animation coursework with their overall Liberal Studies coursework through three components: class lectures and discussions, independent analysis and reflection, and the creation of a significant animation project. Students will employ the knowledge they have learned and the skills they have acquired in all their Animation courses to date to produce a significant animation project. The course sequence is designed to be taken in two consecutive quarters.

ANI 394 is a prerequisite for this class.

**ANI 396 | ANIMATION CAPSTONE WORKSHOP | 2-2.25 quarter hours
(Undergraduate)**

This course allows students additional time to work with faculty on their Animation Capstone projects. Students will employ the knowledge they have learned and the skills they have acquired in all their Animation courses to date to produce a significant animation project. The course is only available to students enrolled in Animation Capstone courses ANI 394 and ANI 395. PREREQUISITE(S): Must be concurrently enrolled in ANI 394 or ANI 395.

ANI 394 or ANI 395 is a co-requisite for this class.

**ANI 399 | INDEPENDENT STUDY | 1-8 quarter hours
(Undergraduate)**

Independent study form and consent of instructor required. PREREQUISITE(S): Consent of dean. (Variable credit)

**ANI 402 | 3D AUTO-RIGGING WORKSHOP | 2-2.25 quarter hours
(Graduate)**

In this course students will learn the use of Advanced Skeleton, one of the most comprehensive and advanced auto-riggers available in order to create professional level character rigs quickly and effectively. Topics covered will include biped, quadruped, and custom rigs as well as custom controls, facial rigging, and blendshapes. Students who already have completed character models will be able to use the workshop to prepare them for use in 3D production.

ANI 423 or equivalent experience in Maya is a prerequisite for this course.

**ANI 411 | 3D PRINTING WORKSHOP | 2-2.25 quarter hours
(Graduate)**

3D printers have become an indispensable tool for artists, manufactures, and designers for quick physical realization of everything from character models to product designs. In this workshop students will get a complete introduction to 3D printing. Students will learn the basics of FDM, SLA, and SLS printing including assembly, calibration, slicing, model preparation, and materials. Various techniques in modeling will be covered from organic sculpting in Zbrush to accurately engineered models in Fusion. Personal projects and experimentation are encouraged.

ANI 423 or equivalent 3D modeling experience is a prerequisite for this course.

**ANI 420 | HAND-DRAWN ANIMATION | 4 quarter hours
(Graduate)**

This course is devoted to the complex aspects and techniques of classical drawn animation required to create convincing movement, frame to frame consistency, and character acting. Beginning with a review of the fundamentals and progressing to more complicated techniques, students will learn how to create unique and technically accomplished drawn animation as well as methods for its eventual clean-up, inking and coloring. Contemporary uses of digital technology to enhance production will be emphasized.

ANI 421 or ANI 321 is a prerequisite for this course.

**ANI 421 | ANIMATION MECHANICS | 4 quarter hours
(Graduate)**

Students in this course will rigorously investigate the foundational aspects of animation through traditional and digital methods. Basic principles, including timing, spacing and the abstraction of movement, will be analyzed and questioned through experimentation. Students will experience how the process of making work can be used to generate emergent ideas, and be challenged to push the art form beyond the accepted conventions. PREREQUISITE(S): None.

**ANI 422 | ANIMATION HISTORY & PRACTICE | 4 quarter hours
(Graduate)**

The history of animation is explored with a focus on inspiring the students' own work. Students will be involved in an intense study of animation throughout history and around the world, and are required to view a large amount of work outside of class. Animations will be grouped by time period, theme, and/or technique. Through writing and group discussions they will examine the significance of the technique and subject matter. They will put this study into practice by creating short animated films based on their reactions to the films.

ANI 421 or ANI 321 is a prerequisite for this course.

**ANI 423 | 3D ANIMATION SURVEY | 4 quarter hours
(Graduate)**

This course is intended as an intensive overview for graduate students with NO prior 3D experience. Topics include polygonal modeling tools, texturing, principles of 3D animation, basic rigging, camera, lighting and rendering. Animation graduate students with proof of previous 3D experience should consult their advisor to substitute any Major Elective for this course. PREREQUISITE(S): None.

**ANI 425 | STORYBOARDING I | 4 quarter hours
(Graduate)**

This class focuses on storyboarding and animatics as key pre-production tools for animation, film, and game development projects. Areas of focus include narrative development, drawing, performance, and editing. Students will apply these techniques to create an animatic: a comprehensive time-based draft for a short film.

**ANI 426 | VISUAL CONCEPT DEVELOPMENT | 4 quarter hours
(Graduate)**

This course focuses on visual development and styles guides for animation, cinema, and game projects. Coursework involves character design, environmental design, prop design, lighting, color, texture and layout. Students will practice visual research, drawing, and an array of digital tools to build the skills necessary to create an immersive world with a cohesive look and feel. PREREQUISITE(S): None.

**ANI 427 | HAND-DRAWN CHARACTER ANIMATION | 4 quarter hours
(Graduate)**

In this course, students will be introduced to the traditional art of hand-drawn character performance. Topics covered will include acting, body mechanics, volume, weight, walk cycles, dialogue and facial expression.

ANI 421 is a prerequisite for this class.

**ANI 428 | ANIMATION FIGURE STUDY I | 4 quarter hours
(Graduate)**

This studio class will focus on the drawing of the figure for use in animation, storyboarding, and character design. Students will gain a solid foundation in posing, gesture, and anatomy, and will learn how to give a character a sense of emotion and purpose. Students will gain experience and improve their drawing technique through weekly assignments and in-class exercises, including drawing from a live model. In addition to the regular meetings with the instructor, this course will include an extra 90 minute figure study lab with model per week, supervised by a graduate assistant.

**ANI 429 | STORYBOARDING III | 4 quarter hours
(Graduate)**

This course elaborates on the skills from Storyboarding II. Students will develop advanced techniques for storyboarding, staging, pre-production, character development and performance to support their original narrative stories. Rigorous exercises will emphasize visually dynamic composition, figure drawing applied to storyboarding, editing, continuity and sophisticated use of camera. Students will complete a final advanced storyboard and animatic edited with sound, which can be used as a portfolio piece for any aspiring storyboard artist.

ANI 465 is a prerequisite for this class.

**ANI 430 | 3D CHARACTER ANIMATION | 4 quarter hours
(Graduate)**

This course explores the art and techniques for character performance in 3D. Students will study and employ fundamental principles for character animation beginning with the essentials of blocking and inbetweening, and continuing with core mechanics including walk cycles, expressions, and lip sync. Students are required to animate weekly shots culminating in a final lip synced character performance.

ANI 423 or ANI 231 or equivalent 3D modeling experience is a prerequisite for this course.

**ANI 431 | ADVANCED 3D CHARACTER ANIMATION | 4 quarter hours
(Graduate)**

This course introduces advanced concepts in 3D character animation that are necessary for achieving professional quality results. Students will hone their skills through the study of advanced techniques for animating multiple characters, creating continuity, and building character through performance. An emphasis will be placed on the exploration of movement for developing personal style.

ANI 300 or ANI 430 is a prerequisite for this class.

**ANI 432 | 3D RIGGING | 4 quarter hours
(Graduate)**

Students will study the processes and techniques for creating professional quality character rigs. Following a professional production workflow, students will create character skeletons, learn aesthetic and technical considerations for skinning, learn techniques for optimal parametrization, and learn to construct character animation controls.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 433 | ADVANCED 3D RIGGING | 4 quarter hours
(Graduate)**

This course will teach students to rig organic and inorganic objects. Students will learn to rig a "stretchy spine" along with a more detailed facial set up for a character. Other topics will include inorganic object rigging, quadruped rigging and the use of 3D scripting in rigging.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 434 | VIRTUAL CINEMATOGRAPHY | 4 quarter hours
(Graduate)**

This course introduces real world cinematic techniques within a computer graphics environment. Emphasis is placed on camera movement, composition, pacing, lighting, and aesthetics.

ANI 423 is a prerequisite for this course.

**ANI 435 | 3D CHARACTER MODELING | 4 quarter hours
(Graduate)**

This course will instruct students in the process of 3D polygonal based character modeling. Students will learn professional techniques for building quad-based polygon meshes with an extra emphasis on proper topology to help prepare their model for rigging. Students will learn complete UV unwrapping for the entire figure as well as effective techniques for advanced texturing.

ANI 339 or ANI 439 is a prerequisite for this class.

**ANI 436 | 3D MODELING STUDIO | 4 quarter hours
(Graduate)**

Students in this course will broaden and improve their overall skill set by learning a range of modeling techniques. Students will complete several smaller projects that cover topics including speed modeling, efficient low-poly modeling, hard surface modeling, projection texturing, and advanced UV unwrapping techniques. The course will culminate in a final project in which the student will propose and complete an advanced model of their own design.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 437 | ENVIRONMENT MODELING | 4 quarter hours
(Graduate)**

This course covers the planning, production and implementation of environment models for games. The term "environment model" includes landscape, exterior architecture, interior architecture, and both organic and man-made props. Topics include visual art direction, setting mood, developing narrative and cinematic lighting strategies. After creating assets in a modeling program, students will implement them in a game engine editor to learn about game engine requirements, limitations and pipeline.

ANI 339 or ANI 439 is a prerequisite for this class.

**ANI 438 | 3D ORGANIC MODELING | 4 quarter hours
(Graduate)**

In this course students learn a variety of modeling tools specially geared toward creating highly detailed and complex organic models for games or films. Various sculpting and texturing techniques available in organic modeling will be discussed as well as proper UV and polygon modeling methods. Students will also gain an understanding of how to build proper human anatomy structures. Students will learn how to create a proper art pipeline between modeling, sculpting, texturing and rendering software packages.

ANI 339 or ANI 439 is a prerequisite for this class.

**ANI 439 | 3D MODELING AND SHADING | 4 quarter hours
(Graduate)**

In this course students will study the processes and techniques for creating 3D assets, texturing, and lighting in 3D. The procedures covered in this course include creating and preparing models for texturing, building and manipulating shading networks, laying out UVs, and painting textures. Topics in lighting will be approached from the foundation of traditional cinematography, focusing on driving both mood and story. In addition, students will utilize complementary skills in lighting and texturing to create high-quality renders to showcase their 3D assets and environments.

ANI 423 or ANI 231 or equivalent 3D modeling experience is a prerequisite for this course.

**ANI 440 | 2D ANIMATION PRODUCTION | 4 quarter hours
(Graduate)**

Students will create short 2D animated films. Students will be expected to exhibit sophisticated technique, storytelling, and content in their films, and will work to develop as creative artists through multiple critiques throughout the term. Students should show an awareness of how much work and time are required to complete their projects, and the ability to plan accordingly.

ANI 421 is a prerequisite for this class.

**ANI 442 | 3D ANIMATION PRODUCTION | 4 quarter hours
(Graduate)**

In this course, students will create animated films in 3D. Students will learn the essentials of 3D production including; creating 3D animatics, setting up production pipelines, and using efficient techniques for modeling, rigging, and animating. Workflows for both individual and collaborative projects will be introduced. Students will be expected to exhibit sophisticated technique, storytelling and content, and work to develop as creative artists through self-critique. The successful planning and completion of projects on time will be an essential focus of the course.

ANI 425 or ANI 444 is a prerequisite for this class.

**ANI 443 | 3D ANIMATION FOR GAMES & CINEMATICS | 4 quarter hours
(Graduate)**

In this course students will learn how to apply their animation skills for real-time interactive game development while simultaneously improving their knowledge of body mechanics and animation techniques. Students will learn how to develop core playable-character game animations such as run cycles and attacks, as well as how to implement these animations into a game engine and adjust parameters to achieve a finalized performance. Additional focus will be on learning to create cinematic shots centered around driving story and introducing important gameplay concepts.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 444 | VISUAL DESIGN FOR GAMES | 4 quarter hours
(Graduate)**

The stages of development in the visual direction of a video game will be identified and detailed, and students will participate in the creation of the visual art direction of a product, giving special attention to the design of 3D models and animation. Visual Design for Games topics include: creating visual direction, concepting, art bibles, art production, and post-production strategies. Students will create proposals, create concepts, iteratively create artwork, and analyze competitive products.

ANI 446 or ANI 425 or ANI 105 or GD 105 or DES 141 or ART 105 (or equivalent 2D design experience) required for this class.

**ANI 445 | CHARACTER DESIGN | 4 quarter hours
(Graduate)**

Students will be introduced to various methods of creating interesting and original character designs for animated films and games, and then put these approaches into practical use. Methods of creative concepting will include drawing, collage, sculpture and 3D mock-ups. Fundamental visual design and color principles will be stressed, along with the basics of caricature. Students will utilize their character designs in an animated short.

ANI 321 OR ANI 421 is a prerequisite for this course.

**ANI 446 | GAME ART PIPELINE | 4 quarter hours
(Graduate)**

This course is an introduction to the game technical artist's job. Students learn how to design, engineer, and troubleshoot the game art production pipeline. They study good practices and successful strategies for streamlining at different stages of production process. Projects include analyzing problems and then spec'ing out solutions, creating a workflow for producing and exporting assets to several platforms/ engines, and creating instructional documentation.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 447 | ART FOR GAME MODS | 4 quarter hours
(Graduate)**

In this course, students will take an existing game in Unity and modify it to create a different visual experience when played. They will work on collaborative projects while building good working knowledge of 3d art pipeline, materials, lighting, and game performance. They will be expected to exhibit proficiency in analyzing and understanding how game assets are constructed, breaking down and replacing components of existing art with their own, and debugging visual issues related to the introduction of new game assets.

ANI 446 or ANI 444 is a prerequisite for this class.

**ANI 448 | ANIMATION FIGURE STUDY II | 4 quarter hours
(Graduate)**

This studio course utilizing a live model will build on the solid foundation for use in animation, storyboarding, and character design learned in Animation Figure Study I. Principles covered will include tilt and twist, flow, and rhythm in figure drawings. The composition of the poses will also be examined observing the graphic value of the figure in silhouettes. Students will gain a working knowledge of muscular and skeletal anatomy, and apply this in building human forms from both observation and imagination. In addition to the regular meetings with the instructor, this course will include an extra 90 minute figure study lab with model per week, supervised by a graduate assistant.

ANI 428 is a prerequisite for this class.

**ANI 449 | ADVANCED CHARACTER DESIGN | 4 quarter hours
(Graduate)**

This course builds upon the fundamental skills learned in Character Design. Students will participate in exercises and group critiques to hone their visual design skills in the creation of original character designs for animated films and games. The course will culminate in the creation of a character pitch bible and character animation that adheres to industry standards.

ANI 445 is a prerequisite for this class.

**ANI 450 | MOTION CAPTURE | 4 quarter hours
(Graduate)**

This course is a workshop focusing on realistic character motion obtained through motion capture. Students will learn the motion capture pipeline, including character skinning and mapping, planning and directing motion capture sessions, applying motion to a character and motion editing.

ANI 423 or ANI 231 or equivalent 3D modeling experience is a prerequisite for this course.

**ANI 451 | ADVANCED MOTION CAPTURE STUDIO | 4 quarter hours
(Graduate)**

This course will enable students with motion capture experience to advance their technical skills and gain experience with practical application in the motion capture studio. Emphasis will be placed on advanced skinning and mapping techniques as well as complex motion capture sessions involving sets, props, and multiple actors. Students will be required to plan, arrange, and direct their own sessions in the motion capture studio.

ANI 310 or ANI 450 is a prerequisite for this class.

**ANI 452 | 3D SCRIPTING | 4 quarter hours
(Graduate)**

This is an introductory course in scripting for a 3D production environment. Students will learn and apply basic programming concepts in order to improve the productivity of animators and modelers. Using script, we will automate repetitive tasks, customize the interface, and create new tools. Students will gain a fundamental understanding of how a 3D animation package functions behind the interface.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 453 | ADVANCED 3D SCRIPTING | 4 quarter hours
(Graduate)**

This is an intermediate course in scripting for a 3D production environment. Students will go beyond the introductory course to learn more advanced scripting techniques and practices. Students will learn how to assess a problem/ opportunity in the production pipeline, spec out tools, build an effective tool and produce simple interfaces.

ANI 452 is a prerequisite for this class.

**ANI 454 | 3D LOOK DEVELOPMENT | 4 quarter hours
(Graduate)**

In this course, students will study the processes and techniques of look development for 3D characters and hard surface assets for production. A look development artist is part of the creative team in a film or game and is responsible for designing and developing the final look of the film or game. The procedures covered in this course include painting procedural and hand-painted texture maps for 3D characters and hard surface assets, various projection techniques for texture painting, and building shaders with procedural and hand-painted texture maps. In addition, students will learn the basics of grooming techniques to create exquisite-quality look development for a 3D character. Finally, this course will cover various modeling, shading, lighting, and rendering techniques to develop an interior space with a storytelling aspect.

**ANI 455 | STOP MOTION ANIMATION | 4 quarter hours
(Graduate)**

The principles of stop motion character animation in real space are the emphasis of this intermediate level course. Students are introduced to basic armature building, lighting and scene composition, and the designing and fabrication of characters with a variety of materials. Contemporary uses of digital technology to enhance stop motion production will be explored.

**ANI 456 | EXPERIMENTAL ANIMATION | 4 quarter hours
(Graduate)**

This course introduces strategies for an experimental approach to animation. Students will study how experimentation relates to both concept and technique, and examine the work of classic experimental animators. This is a production class that requires students to produce a series of short animations in a variety of processes and styles.

**ANI 457 | HYBRID ANIMATION | 4 quarter hours
(Graduate)**

This production course focuses on combining multiple animation techniques. Students will complete the assignments and final project using mixed media with the choice of animation techniques, content and form left to the individual or group. Topics include pixilation, rotoscoping, and creative use of green screen, among others.

ANI 421 or ANI 321 is a prerequisite for this course.

**ANI 458 | ADVANCED STOP MOTION ANIMATION | 4 quarter hours
(Graduate)**

In this course, students will build on their skills from Stop Motion Animation to create more ambitious projects. Techniques will cover complex puppets, detailed character performance to dialogue, 3D printing as applied to animation, lighting and motion control operation for camera moves. An emphasis will be placed on craftsmanship and effectively combining elements for stop motion filmmaking.

ANI 455 is a prerequisite for this class.

**ANI 460 | ANIMATION GRADUATE SEMINAR | 4 quarter hours
(Graduate)**

This seminar will explore the animator's role in contemporary culture, including careers in entertainment, art, game development and education. A combination of guest speakers, critical readings, animation analysis and group discussion will help students lay a foundation for their graduate study in the field.

**ANI 461 | MOTION GRAPHICS | 4 quarter hours
(Graduate)**

This course introduces effective communication using motion graphics; including its application in the areas of film titles, broadcast and commercial design, interactive media, and gaming. The combination of music, animation, graphic design and typography will be explored following the basic theories of dynamic composition and aesthetics. A focus and analysis on Motion Graphics History, including abstract film, modernist television, computer art, synesthesia, and film title design, will be coupled with animation and design exercises, and simulated concept "pitch" presentations. An emphasis is placed on gaining familiarity with contemporary styles and trends in professional motion graphics, as well as state-of-the-art software and tools. Readings and responses will be due each week in addition to practical projects. Projects will include: 3 short fundamental exercises, a concept development and pitch presentation, a film title design project, and a 7-10 page research paper.

**ANI 462 | TITLE DESIGN | 4 quarter hours
(Graduate)**

This course explores the relationship between film and typography through an analysis of title design production in film, television, animation, and games. By studying examples from film and television history and the creative process behind those productions, students will develop an understanding of how to interpret and use typography to create narrative exposition on screen. Students will gain an appreciation and skill for working with text, image, and sound within time-based media that will add value, clarity, and sophistication to multimedia projects.

**ANI 463 | 3D MOTION GRAPHICS | 4 quarter hours
(Graduate)**

This course builds on motion graphics fundamentals covered in ANI 461 Motion Graphics. In 3D Motion Graphics, students will work to develop a better understanding of how to develop a distinct visual style in both personal work and in work for clients. The course also focuses on gaining familiarity with contemporary styles and trends in professional motion graphics, and an awareness of Chicago-based motion graphics productions. Students will also give a 30 minute teaching presentation on an assigned topic.

ANI 461 is a prerequisite for this class.

**ANI 465 | STORYBOARDING II | 4 quarter hours
(Graduate)**

Students will elaborate on the skills from core storyboarding to create sophisticated pre-production for their own films, game cinematics and animations. Emphasis is placed on advanced story development, professional artistry and pre-visualization techniques such as converting a script to visual story reels or animatics. Students will complete the course with a fully-developed animatic for the story of their choosing.

ANI 425 is a prerequisite for this class.

**ANI 466 | CINEMA, ANIMATION AND ART | 4 quarter hours
(Graduate)**

This seminar course focuses on animation and cinema from the standpoint of Modern and Contemporary art. Students study the major styles and themes of historical experimental film and video, and relate these topics to contemporary animation and independent cinema practices. Emphasis is placed on theory and criticism, and how it informs experimental work. Students are expected to discuss work and theory in a seminar setting, and to engage the class material in several research papers.

**ANI 467 | MOTION DESIGN STUDIO | 4 quarter hours
(Graduate)**

This course focuses on advanced motion design projects within a studio based setting. Students will work alone and in small groups on personal and client-based projects. Demonstrations will concentrate on advanced 3D motion graphics with interactive photorealistic rendering. Students will also develop their portfolio sites and get advice on freelancing and finding work with studios.

ANI 463 is a prerequisite for this class.

**ANI 468 | ADVANCED CINEMA 4D & REDSHIFT WORKSHOP | 2-2.25
quarter hours
(Graduate)**

This course builds on the 3D motion graphics fundamentals covered in ANI 463: 3D Motion Graphics. This course will include demonstrations and workshops on advanced features and rendering techniques using Maxon Cinema 4D and Redshift, a production render engine used in the motion graphics and VFX industry. Students will follow industry design and production processes to create professional motion design and art. Topics will include: Using Mograph tools to drive Redshift parameters, shader building and compositing, Global Illumination principles and concepts, advanced lighting and texturing, camera attributes, compositing and optimization.

**ANI 470 | ACTING FOR ANIMATORS | 4 quarter hours
(Graduate)**

This is acting training designed specifically for the needs of animators, as opposed to stage actors. Utilizing lecture/discussion, examination/deconstruction of animated and live-action film clips, home assignments and a few simple in-class improvisations, this course provides the animator with the skills necessary to deliver dynamic animated character performance. Assessment measures include oral and written reflective analysis, short animated character sketches and class participation.

ANI 421 is a prerequisite for this class.

**ANI 471 | ANIMATED SERIES DEVELOPMENT | 4 quarter hours
(Graduate)**

This course covers the preparation and development of an animated series pitch bible. Students will explore and critique successful and unsuccessful series pitches, and become familiar with the variety of options. Topics covered will include the artist-run show, world building, cast character development and design, show visual design, sample stories, and possible venues. Students will develop their own original show concept, characters, and sample stories. By the end of the quarter students will produce and pitch a presentable show bible for their series, including character designs, storyboards, and a sample pitch animatic or short that might be presented for an open call by a network.

ANI 425 is a prerequisite for this class.

**ANI 478 | 3D DYNAMICS | 4 quarter hours
(Graduate)**

This course will provide an introduction to dynamic simulation and effects in 3D animation. Topics to be covered include hair and fur, fluid dynamics, smoke and fire, particles, and cloth. An emphasis will be placed on how these effects can enhance an idea or narrative, establish mood, or even be used as a basis for experimental animation. Students will use traditional animation and visual design principles as a basis for creating several small projects.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 479 | 3D COMPOSITING | 4 quarter hours
(Graduate)**

This course is designed to allow advanced compositors and animators to merge the 2D, 3D and/or live-action video worlds, drawing from a combination of techniques such as motion tracking, compositing, rotoscoping, hand-drawn, cut-out and 3D animation. The goals are to go beyond simply achieving technical proficiency, as we will also focus on learning principles of good animation in preparation for both artistic and commercial endeavors.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 480 | ANIMATION PROJECT BLUELIGHT | 4 quarter hours
(Graduate)**

Production of an animated digital motion picture written by students or faculty within the School of Cinematic Arts. Students will work as crew under supervision of faculty members heading each of the various production areas. The goal is to work towards a completed animated digital motion picture suitable for festivals or distribution.

**ANI 481 | SOUND DESIGN FOR ANIMATION | 4 quarter hours
(Graduate)**

This class will explore concepts and practical techniques students need in order to address many of the unique requirements associated with creating audio for animated films. Students will begin with an introduction to the aesthetics of film sound and audio production before moving on to build practical recording and mixing skills. Lectures, readings, and practical projects will give students a working knowledge of how to approach and create the immense range of styles of audio for animated films.

**ANI 482 | DIGITAL PUPPET ANIMATION | 4 quarter hours
(Graduate)**

This class will introduce advanced production pipelines and techniques of 2D digital puppeting, with a focus on industry-standard software such as After Effects, Animate, and Harmony. Students will learn the evolution of puppet animation throughout history, the basics of visual design, rigging, and animating specific to 2D puppeted characters. Lectures and creative projects will give students the practical knowledge to create an organized workflow. Resulting in the ability to work independently and collaboratively to create well designed and animated 2D puppet animation.

ANI 421 is a prerequisite for this class.

**ANI 490 | TOPICS IN ANIMATION | 4 quarter hours
(Graduate)**

Advanced study in animation focusing on a specific area each quarter. May be repeated for credit.

**ANI 491 | TOPICS IN ANIMATION WORKSHOP | 2-2.5 quarter hours
(Graduate)**

Specialized hands-on two-credit workshop instruction focusing on a specific advanced animation topic each quarter. May be repeated for credit.

ANI 421 is a prerequisite for this class.

**ANI 492 | TOPICS IN 3D ANIMATION | 2-2.5 quarter hours
(Graduate)**

Specialized hands-on two-credit workshop instruction focusing on a specific advanced 3D animation topic each quarter. May be repeated for credit.

ANI 423 is a prerequisite for this course.

**ANI 493 | TOPICS IN 3D ANIMATION | 4 quarter hours
(Graduate)**

Advanced study in 3D animation focusing on a specific area each quarter. May be repeated for credit.

ANI 231 or ANI 423 or equivalent 3D experience is a prerequisite for this course.

**ANI 501 | MFA SHORT FILM I | 4 quarter hours
(Graduate)**

This course is part of a year-long project, and is continued in ANI 502 and 503. This series of courses will concentrate on facilitating the Animation MFA students' production of a short, independently animated project. The short film project serves as a preparation for the students' MFA thesis project in year two. The topics of idea generation, experimentation, problem solving, planning and time management, and the process of critical analysis will be applied to the student's work, with the choice of animation technique, content and form left to the individual. Special attention will be devoted to discovering and developing each student's personal voice. Technical demonstrations will be presented on an as-needed basis, depending on the nature of the students' projects. In addition to the course instructor, students will be assigned two faculty mentors who will also provide individual feedback and technical advice. This course must be taken consecutively with ANI 502 MFA Short Film II and ANI 503 MFA Short Film III. **PREREQUISITE(S):** Open to Animation MFA students only.

Status as an MFA Animation student is a prerequisite for this course

**ANI 502 | MFA SHORT FILM II | 4 quarter hours
(Graduate)**

This course is part of a year-long project, and is a continuation of ANI 501 and continued in ANI 503. This series of courses will concentrate on facilitating the Animation MFA students' production of a short, independently animated project. The short film project serves as a preparation for the students' MFA thesis project in year two. The topics of idea generation, experimentation, problem solving, planning and time management, and the process of critical analysis will be applied to the student's work, with the choice of animation technique, content and form left to the individual. Special attention will be devoted to discovering and developing each student's personal voice. Technical demonstrations will be presented on an as-needed basis, depending on the nature of the students' projects. In addition to the course instructor, students will be assigned two faculty mentors who will also provide individual feedback and technical advice. This course must be taken consecutively with ANI 501 MFA Short Film I and ANI 503 MFA Short Film III. Open to Animation MFA students only.

ANI 501 is a prerequisite for this course.

**ANI 503 | MFA SHORT FILM III | 4 quarter hours
(Graduate)**

This course is part of a year-long project, and is a continuation of ANI 501 and 502. This series of courses will concentrate on facilitating the Animation MFA students' production of a short, independently animated project. The short film project serves as a preparation for the students' MFA thesis project in year two. The topics of idea generation, experimentation, problem solving, planning and time management, and the process of critical analysis will be applied to the student's work, with the choice of animation technique, content and form left to the individual. Special attention will be devoted to discovering and developing each student's personal voice. Technical demonstrations will be presented on an as-needed basis, depending on the nature of the students' projects. In addition to the course instructor, students will be assigned two faculty mentors who will also provide individual feedback and technical advice. This course must be taken consecutively with ANI 501 MFA Short Film I and ANI 502 MFA Short Film II. Open to Animation MFA students only.

ANI 502 is a prerequisite for this class.

**ANI 540 | ANIMATED SHORT FILM PART I | 2 quarter hours
(Graduate)**

This course and its continuation, ANI 541, will concentrate on facilitating the graduate students' production of a short, independently animated project. The topics of idea generation, experimentation, problem solving, planning and time management, and the process of critical analysis will be applied to the students work, with the choice of animation technique, content and form left to the individual. We will have technical demonstrations on an as-needed basis, depending on the nature of your animations. This course must be taken consecutively with ANI 541 Animated Short Film Part II.

ANI 440 is a prerequisite for this class.

**ANI 541 | ANIMATED SHORT FILM PART II | 2 quarter hours
(Graduate)**

This course is a continuation of ANI 540 Animated Short Film Part I. Throughout the quarter students will continue working on their films, meeting with the instructor for advising, and other students for group critiques. Students will also learn effective post-production strategies as they near completion of their first film. This course must be taken consecutively with ANI 540.

ANI 540 is a prerequisite for this class.

**ANI 560 | GRADUATE TEACHING SEMINAR | 4 quarter hours
(Graduate)**

This seminar exposes students to effective methods and professional practices of teaching undergraduate and graduate students. A variety of approaches to course materials and projects will be introduced and discussed in detail. In addition to work in class, students will work closely with a faculty member in order to gain first-hand knowledge, including class observation, of practical aspects of creative and academic instruction. PREREQUISITE(S): none.

**ANI 599 | INDEPENDENT STUDY | 1-8 quarter hours
(Graduate)**

Independent study form. PREREQUISITE(S): Consent of dean and consent of instructor required. (Variable credit)

**ANI 601 | MFA THESIS PROJECT I | 4 quarter hours
(Graduate)**

This course is part of a year-long three course sequence, and is continued in ANI 602 and 603. This series of courses will concentrate on facilitating the Animation MFA students' production of their MFA thesis project. In addition to animated films, students are also encouraged to explore alternative animation solutions, including TV shows, installations, interactive/game projects, augmented/virtual reality, performance, and others. At the beginning of the quarter students will develop a thesis proposal, which must be approved by their MFA thesis committee and the course instructor before proceeding with production. Much of this course will consist of self-directed research and production by the student, supplemented by mentoring by the instructor and critique with the entire class. Students will also meet regularly with the members of their MFA thesis committee, who will provide individual feedback and technical advice. This course must be taken consecutively with ANI 602 MFA Thesis Project II and ANI 603 MFA Thesis Project III.

ANI 503 and status as an Animation MFA student are required for this class.

**ANI 602 | MFA THESIS PROJECT II | 4 quarter hours
(Graduate)**

This course is part of a year-long three course sequence, and is a continuation of ANI 601 and continued in ANI 603. This series of courses will concentrate on facilitating the Animation MFA students' production of their MFA thesis project. In addition to animated films, students are also encouraged to explore alternative animation solutions, including TV shows, installations, interactive/game projects, augmented/virtual reality, performance, and others. Much of this course will consist of self-directed research and production by the student, supplemented by mentoring by the instructor and critique with the entire class. Students will also meet regularly with the members of their MFA thesis committee, who will provide individual feedback and technical advice. This course must be taken consecutively with ANI 601 MFA Thesis Project I and ANI 603 MFA Thesis Project III.

ANI 601 and Animation MFA students only are required for this class.

**ANI 603 | MFA THESIS PROJECT III | 4 quarter hours
(Graduate)**

This course is part of a year-long three course sequence, and is a continuation of ANI 601 and ANI 602. This series of courses will concentrate on facilitating the Animation MFA students' production of their MFA thesis project. ANI 603 will prepare the student for the more self-directed completion phase of their MFA thesis project. In addition to animated films, students are also encouraged to explore alternative animation solutions, including TV shows, installations, interactive/game projects, augmented/virtual reality, performance, and others. Much of this course will consist of self-directed research and production by the student, supplemented by mentoring by the instructor and critique with the entire class. Students will also meet regularly with the members of their MFA thesis committee, who will provide individual feedback and technical advice. This course must be taken consecutively with ANI 601 MFA Thesis Project I and ANI 602 MFA Thesis Project II.

ANI 602 and Animation MFA students only are required for this class.

**ANI 639 | MFA PRE-THESIS | 4 quarter hours
(Graduate)**

In this course the MFA student will develop the concept and pre-production of their thesis animation through workshops, critiques and assignments. Students will create inspiration and concept art, write a treatment, create a storyboard and animatic as well as research design options to be used on their final film project in ANI 640 MFA Thesis Animation.

ANI 541**ANI 640 | MFA THESIS ANIMATION | 1 quarter hour
(Graduate)**

This course is a three quarter class that will concentrate on the graduate students' production, post-production and completion of their final thesis project. Students will have regular critique sessions with their three Thesis Advisors from the animation faculty. The student's project will be presented to the committee upon completion.

ANI 639 is a prerequisite for this class.

**ANI 701 | THESIS CONTINUATION | 0 quarter hours
(Graduate)**

Non-credit. Students admitted to MFA program who have completed all the required coursework and who are regularly using the facilities of the University for thesis production and/or post-production are required to be registered each quarter of the academic year until the thesis and defense have been completed.

ANI 603 or ANI 640 is a prerequisite for this class.