Course Description

Introduction to the continuing evolution of animation. The course investigates not only the creative and technological innovations that expand cinematic storytelling (Mickey Mouse to VFX, Simpsons to Anime, Games to VR) but also how the arts are an integral part (i.e. sound/music, art/design, cinematography/editing, acting/theatrical lighting etc.). This is a lower-division course designed for the non-major and major.

Course Objectives

Animation has evolved from simple cartoon drawings to 3D VFX. From the beginning, each new technological innovation in animation extended the creative possibilities for storytelling (animation was the first to use color film). This course exposes students to not only how animation synthesizes the arts (theatre, art, film, music, writing, movement etc.) but also the behind the scenes of the animation industry.

Animation previously was the domain of large studios with an army of artists; today we have access to more power on home computers then was used to make Jurassic World. This class will demystify the process so students have the option to begin animating on their own, to integrate animation techniques in their own future visual projects, or just to understand the creative and technical priorities behind the work. This lower-division course will focus on the creative underpinnings of the medium.

Course Methodology

Fundamental concepts and components of animation will be covered in lectures, clips of animation examples, viewings, and discussions. A series of presentations, demonstrations will explain how animation is created and how the animation pipeline for brings all the parts together. The web site contains full syllabus, articles and references for this course. Students will visit this site to acquire readings, outside movie clips, and additional background information to be used in the course lectures, discussions and tests.

Reading material and online clips will be provided through CANVAS. No required book.

Course Schedule

Module 1

General introduction - Presentation: syllabus and lecture. Definition of animation: What is Animation; technically, culturally, historically, artistically?

- Content draft: Screenings: Directors: Chuck Jones, Walt Disney, Clips from WB Studio, Disney Studio, Pixar Studio. Readings – “The Future of Character Animation” by Frank Thomas
Module 2
Introduction to the Animation Process. Drawing versus 3D Modeling, Timing - Keyframes versus Dynamics... How has the process changed and what are the tradeoffs between techniques in the Animation Process? Tools of the Trade. A primer on the work habits of a traditional hand-drawing artist vs. a contemporary 3D animator.

- Screenings: Early Animation before Disney, Disney in the 30s and 40s, WB animation, TV Animation in the 50s and 60s, Pixar, DreamWorks. Reading – “Natural Modes of Human Form and Motion” etc.

Module 3
The Performance of Animation (Principles: Timing versus Posing) - What makes animation convincing? The audience knows it's not real but when done right we go along for the ride. For example, timing is critical, it determines the weight, size, and speed of an object while the pose of the human body communicates a character's emotional state: this is fundamental. How do you create a great performance: this includes silhouette, line of action, straight vs. curves etc.

- Content: Screenings - Luxo Jr., Rabbit Seasoning (directed by Chuck Jones), etc.

Module 4
Skills of an Animator: (1) Story teller, (2) Graphic artist, (3) Cinematographer (composition and staging), (4) Acting, (5) Sound editing (music, dialogue, and sound effects), (6) Set designer (creating space through the application of light and color), (7) Film editor, the rhythm of the cutting, continuity etc., (8) Computer logic, integrating traditional 2D skills with the ever-changing computer interfaces and tools.

- Content draft: Screenings: Acting- Hold the Lion, Please (Bugs, Lion/WB), My Favorite Duck (Porky/Daffy/WB), Toy Story (Disney/Pixar). Reading – “Acting for Animators”

Module 5
Story - It’s all about story. What it always has been and always will be about. What are the most primary, elemental aspects of engaging an audience with story-telling? Stories in still images: how every picture tells a story. Story principles: Basic ideas. Finding stories. Testing stories. Story structure. Formulas to test; Field, McKee, Save the Cat, etc.

- Content Draft: Screenings - Readings TBD

Module 6
Film Structure in Animation: Discussion of staging, composition, rhythm, and continuity. This information is fundamental to the storyboarding process in animation. Storyboarding is a means of telling story, visually.

- Content draft - Screenings: Three Little Pigs, Incredibles, Up, Bambi, Cinderella, The LittleWhirlWind (Mickey/Disney), Out-Foxed (Droopy/MGM)

Module 7
Visual Concept Development (Pre-Production) Influence of Art and Theatre (i.e. Lighting, Color, Shading...) Most animation starts with concept art that is based on influences from either the cultural themes within the subject or traditional art styles that shapes the genre and final look of the film. Lighting in Animation is much more closely related to Theatre than live action film.

- Content Draft: Screenings: McClarin, Passion of Christ – Caravaggio, Peter Pan - Theatrical lighting, Cinderella influenced by the contemporary style. Mary Blair. Reading: “Lighting for Animation” by Sharon Callahan, Pixar
Module 8

Types and Techniques: Each technique lends itself to certain storytelling concepts: TV animation is primarily a verbal/oral storytelling format that permits outrageous scenarios while feature animation lends itself to more visual stories that permit deeper exploration of character and story. 2D Animation, Motion Graphics, Stop Motion

- Animated Shorts and Features in the 30s and 40s, TV, Features 90s and 00s The Simpsons, The Family Guy, South Park, Commercials, Film Festival shorts (i.e. Bill Plympton)

Module 9

Animation Genres and Studio Styles – Anime, Nickelodeon, Disney, WB, APA, Eastern Europe etc.

Each culture selects animation styles that best suit their ideas they best embody their values. Eastern European animation utilizes stop motion animation to communicate a darker, ominous view of life. Anime from Japan uses a stark, graphic quality that upholds and preserves the mysticism of their beliefs. Disney embodies a tradition of fairy tales.

- Content Draft: Screenings: Early Animation Techniques, Disney Full Style, Limited Style (Hanna Barbera) Anime Graphic Style, Akira, Spirited Away, Ghost in the Shell, Princess Mononoke, Perfect Blue, My Neighbor Totoro, Metropolis, etc.

Module 10

Sound in Animation: Dialogue, Sound Effects, and Music: Each component brings a different added layer of information that enhances the experience. Music shapes the emotion and mood. Music shapes the timing and rhythms to such an extent that to this day when overdone is called “MickeyMousing”. There are 3 sources: sound effects, music, and dialogue (spoken language). The purpose of sound is to clarify action being viewed and created an effect of realism.


Module 11

VFX (Visual Effects) and Compositing: Post-Production/VFX expands story possibilities.

- Content draft: Screen samples: Batman, Spiderman, Mummy, Men in Black, Jurassic Park, Clips from films on how compositing is achieved and the creative purposes to which it has been used: Mattes, Movies, Gladiator, Ridley Scott, Trip to the Moon - Georges Melies 1902, The Mummy - John Berton, Dinosaur – Disney, Green Screen, Motion Capture.

Module 12

Scientific Visualization (visualization or simulation of three dimensional phenomena, such as architectural, meteorological, medical, or biological systems) requires the creative insights of perception to clearly communicate.

- Content draft: Screenings: Siggraph visualizations.

Module 13

Games and Real-Time Technology - What are the basic technologies of real-time imagery, and how are they evolving? Using gaming assets and technology for “machinima” productions: Exactly how big is the game industry? How is this industry changing? What’s it like to work in a game studio?

Module 14

The Industry: then and now. The studios; who’s making animation and VFX? The production companies: large and small; Worldwide production; ready to travel?; Academia - it’s role, future, impact; The professional organizations: Visual Effects Society, ASIFA-Hollywood, SIGGRAPH, etc.; Marketing, Distribution, Agents, and hucksters.
Instructor Bio:

Craig Caldwell, USTAR Professor, Digital Media Cluster, University of Utah, and one of the founders of the Masters in Games Program Entertainment Arts & Engineering and DeTao Master at the Institute of Animation and Creative Content, SIVA Campus, Shanghai, China. Industry experience: Head of Creative Training at Electronic Arts, Tiburon Studio and 3D Technology Specialist, Walt Disney Feature Animation (Mulan, Tarzan, Chicken Little, Bolt, Meet the Robinsons), Burbank, CA. Academic background includes Head of the largest Film School in Australia at Griffith University. The Griffith Film School is known for its interdisciplinary program in Film, Animation, and Games. Previously was Chair of the Media Arts Department at University of Arizona and Associate Director, New Media Center. Presented at conferences such as Sundance, Mundos Digitales ’13–’18, SIGGRAPH-Asia ’14–’16, SIGGRAPH ’14,’16, FMX ’13–’18, GAFX ’17 (Bengaluru), Kre8tif! 2017 (Kuala Lumpur, Malaysia), and IS3 2017 (Seoul, Korea). He has presented his story workshop at Electronic Arts Studio, Salt Lake City, and Disney Interactive Studio. His book Story Structure and Development – A Guide for Animators, VFX Artists, Game Designers, and Virtual Reality; published 2017, CRC Publishers.