

**Arts, AV Technology and Communications Career Cluster  
Advanced Animation, Game and APP Design  
Course Number: 48.42300**

**Course Description**

In this course students will continue working in 2-D and 3-D environments by importing 3-D models while working in 3-D space morphing, and inverse kinematics. While learning the basics of Game and APP design, the students will acquire knowledge of human and animal animations, apply the aesthetic and technical aspects of animation of characters, and analyze the physics and physicalization of action, weight, and timing. The course advances students' knowledge of sound integration into animated products; by focusing on skills that include lip-syncing, voice overs, and synchronization. Portfolio development will include animation reels and other products. Students will learn the processes of post-production and will work both independently and in small production teams to manage the production pipeline for a 3-D project. In the final phases of the project completion, students will work collaboratively to meet deadlines and will be expected to produce an animated final project that reflects competency with editing, rendering, updating reel, and self-promotional support items. Students may also develop a working game or app as a final project. Through the exploration of projects, students will continue to work independently and collaboratively to develop content delivery, story and technical mastery. The prerequisite for this course is Principles and Concepts of Animation.

**Course Standard 1**

**AAVTC-AAGAD-1**

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

**Standard: Demonstrate employability skills required by business and industry.**

The following elements should be integrated throughout the content of this course.

**1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.**

<b>Person-to-Person Etiquette</b>	<b>Telephone and Email Etiquette</b>	<b>Cell Phone and Internet Etiquette</b>	<b>Communicating At Work</b>	<b>Listening</b>
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

**Georgia Department of Education**

<b>Nonverbal Communication</b>	<b>Written Communication</b>	<b>Speaking</b>	<b>Applications and Effective Résumés</b>
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

**1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.**

<b>Teamwork and Problem Solving</b>	<b>Meeting Etiquette</b>
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

**1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.**

<b>Problem Solving</b>	<b>Customer Service</b>	<b>The Application Process</b>	<b>Interviewing Skills</b>	<b>Finding the Right Job</b>
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

**1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.**

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

**1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.**

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

**1.6 Present a professional image through appearance, behavior and language.**

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

**Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:**

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

**Course Standard 2**

**AAVTC-AAGAD-2**

**Demonstrate following safety procedures when working with computer and TV equipment.**

- 2.1 Categorize general safety rules for operation of equipment and learning activities specific to film, computer, and TV.
- 2.2 Apply concepts of safe practices when working on assignments.
- 2.3 Recognize and practice safe and secure transportation of equipment.
- 2.4 Identify and apply concepts of safe handling of art media and tools.

**Course Standard 3**

**AAVTC-AAGAD-3**

**Demonstrate an understanding of the history of animation and the evolution of 2-D to 3-D animation.**

- 3.1 Review and distinguish concepts of animation history.
- 3.2 Recognize and practice safe and secure transportation of equipment of the transition from using drawings to digital media.
- 3.3 Review an understanding of flip books, pegs and light and how they apply to animation.
- 3.4 Identify and assess the role and influence of new technologies on contemporary artwork.
- 3.5 Differentiate past, present, and future technological advances as they relate to an animation.
- 3.6 Report key influences on the origin and evolution of art, technology, media, and performance (e.g., the influence of historical styles on contemporary idioms).

**Course Standard 4**

**AAVTC-AAGAD-4**

**Demonstrate applying trade terminology in an appropriate manner.**

- 4.1 Identify and utilize trade terminology in the media production lab.
- 4.2 Identify and utilize trade abbreviations and acronyms as appropriate.

**Course Standard 5**

**AAVTC-AAGAD-5**

**Demonstrate the use of effective professional communication skills (oral, written, and digital) and practices that enable positive customer relationships.**

- 5.1 Assess the importance of all customers to a business.
- 5.2 Identify organization's products and services.
- 5.3 State the influence of instructional technology on business.
- 5.4 Show how technology can be used to create a solution to business challenge and present to customer in professional business format.
- 5.5 Apply concepts ability to assist customers in a professional manner.
- 5.6 Apply actively listen to customers.
- 5.7 Investigate, interpret, and synthesize customers' individual needs.

- 5.8 Formulate a professional business image (e.g., appearance, voice, grammar, word usage, enunciation, nonverbal communication).

## Course Standard 6

### AAVTC-AAGAD-6

**Demonstrate using formal qualities of art (elements and principles) to create unified composition and communicate meaning.**

- 6.1 Uses a viewfinder to develop compositions.
- 6.2 Apply concepts of design to organize elements to communicate meaning and unified compositions concepts, such as activating negative space, visual weight, paths of movement, non-centered focal point, dominance and subordination of design elements, and variety within repetition.
- 6.3 Demonstrate using thumbnail sketches and visual/verbal notes to plan compositions.
- 6.4 Interpret and apply concepts, such as activating negative space, visual weight, paths of movement, non-centered focal point, and variety within repetition.
- 6.5 Differentiate the structural elements of the plot (e.g., subplots, parallel episodes, and climax), the plot's development, and the way in which conflicts are (or are not) addressed and resolved.

## Course Standard 7

### AAVTC-AAGAD-7

**Demonstrate using computational thinking procedures to analyze and solve problems.**

- 7.1 Apply concepts for identifying routine hardware and software problems current to everyday life.
- 7.2 Identify patterns of compatibility issues and describe operational problems caused by hardware errors.
- 7.3 Investigate how technology can be used to solve problems.
- 7.4 Draw conclusions of the software development process is used to solve problems.
- 7.5 Distinguish commonly used documentation tools for design specifications, including flowcharts and visual and textual storyboards.

## Course Standard 8

### AAVTC-AAGAD-8

**Develop in an independent production setting the direction of specialization for news, film, and graphics by effectively using tools for media production, development, and project management.**

- 8.1 Apply learned skills to conference with teacher and pitch production video concept.
- 8.2 Create finished production for distribution via desired delivery format.
- 8.3 Categorize and display the basic functions of media design software, such as key frame animation, two-dimensional design, and three-dimensional design.
- 8.4 Demonstrate using appropriate software to design and produce professional-quality images, documents, and presentations.
- 8.5 Analyze the purpose of the media to determine the appropriate file format and level of compression.
- 8.6 Analyze media and develop strategies that target the specific needs and desires of the audience.
- 8.7 Develop a logical explanation of the development and management process of a show (e.g., television programs, musicals, and radio programs).
- 8.8 Classify the basic design elements necessary to produce effective print, video, audio, and Web-based media.

- 8.9 Demonstrate use of technical skills (e.g., pagination, printing, folding, cutting, and binding) to produce publishable materials.
- 8.10 Apply the concepts of a high-quality craftsmanship to a product or presentation and continually refine and analyze over an extended period of time.

### Course Standard 9

#### AAVTC-AAGAD-9

##### **Demonstrate applying media, techniques, and processes in color painting.**

- 9.1 Apply concepts of color theory (hue, value, intensity) and color schemes (monochromatic, analogous, complementary, split-complementary, and triadic) to express emotion and create unity.
- 9.2 Distinguish primary, secondary, and tertiary hues.
- 9.3 Draw conclusions of how color communicates meaning in personal and famous artwork.
- 9.4 Demonstrate using the color relationships of monochromatic, warm/cool, complementary, analogous, and split-complementary to achieve visual unity and/or intent of work.
- 9.5 Apply concepts of the dark/light value quality of specific colors.
- 9.6 Distinguish and summarize of the intensity of color.
- 9.7 Apply concepts of tinting and shading by lightening and darkening color.
- 9.8 Distinguish and applies warm/cool versions of the same hue.
- 9.9 Explain and interpret observations of the impact of juxtaposing various colors.
- 9.10 Apply the concepts of conscious mark-making in painting.

### Course Standard 10

#### AAVTC-AAGAD-10

##### **Demonstrate the ability to specify color materials properly.**

- 10.1 Differentiate the ambient and diffuse color of an object.
- 10.2 Distinguish the specular, reflective, and luminosity material properties of objects.
- 10.3 Apply concepts of filters to an object.
- 10.4 Create models that represent their art in clay material.

### Course Standard 11

#### AAVTC-AAGAD-11

##### **Demonstrate applying media, techniques, and processes in three-dimensional art.**

- 11.1 Modelize 2-D sketches into 3-D form.
- 11.2 Apply concepts of animation in 3-D media.
- 11.3 Compare and contrast sculpture-in-the-round, high relief, bas relief, and additive and subtractive processes.

### Course Standard 12

#### AAVTC-AAGAD-12

##### **Demonstrate construction of 2 D modeling.**

- 12.1 Create standard, extended and architectural primitives.
- 12.2 Modify object properties.

## Course Standard 13

### AAVTC-AAGAD-13

#### **Distinguish the basic functions of media design software, such as key frame animation, two-dimensional design, and three-dimensional design.**

- 13.1 Classify the tools needed to enable multimedia capabilities (e.g., still images, animated graphics, sound, and video) for Digital Media Projects.
- 13.2 Apply the concepts of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and in access guides to World Wide Web sites on the Internet).
- 13.3 Demonstrate using concepts to solve a visual arts problem that involves the effective use of elements of art and principles of design.
- 13.4 Critique and apply concepts of the manipulation of digital imagery (either still or video).

## Course Standard 14

### AAVTC-AAGAD-14

#### **Demonstrate applying the principles of Character Rigging, Cut-Out Animation, Inverse Kinematics, and Paths and Motion.**

- 14.1 Analyze and describe how the composition of a work of art is affected by the use of a particular principle of design.
- 14.2 Solve and explain a visual arts problem that involves the effective use of the elements of art and the principles of design.
- 14.3 Demonstrate developing and refining the manipulation of digital imagery (either still or video).
- 14.4 Analyze how irony, tone, mood, the author's style, and the tone of language achieve specific rhetorical and/or aesthetic purposes.
- 14.5 Analyze how technical design (e.g., color theory, lighting, graphics, typography, posters, sound, costumes, and makeup) contributes to a performance or presentation.
- 14.6 Construct the component steps and skills required to design, edit, and produce a production for audio, video, electronic, or printed presentation.
- 14.7 Create a variety of audio, visual, written, and electronic products and presentations using technology.
- 14.8 Distinguish and explain the writing processes, formats, and conventions used for various media.
- 14.9 Report and interpret observations of technical support related to various media and design arts.
- 14.10 Assess models, simulations, and other tests to determine optimal design solutions from a variety of options.
- 14.11 Formulate the elements involved in creating a media or performing arts production for video or electronic presentation.
- 14.12 Demonstrate using technical applications in the creative process, where appropriate.
- 14.13 Apply and explain the appropriate skills and vocabulary of the animation art form.
- 14.14 Categorize and analyze the elements of the animation art form.
- 14.15 Estimate and interpret digital applications appropriate to specific media and projects.
- 14.16 Interpret observations of how technology and the arts are interrelated in the development of presentations and productions.
- 14.17 Apply and explain appropriate problem-solving strategies and work-related critical thinking skills.
- 14.18 Compare and apply the elements of the art form to observe, perceive, and respond to a particular application.
- 14.19 Apply and interpret the concepts of research and analysis to the creation of content.

- 14.20 Construct and continually refine a high-quality product or presentation that proves commitment and craftsmanship of the medium.

### Course Standard 15

#### AAVTC-AAGAD-15

**Create a basic character head and lip-syncing animation that focuses on two dimensional sketches, preparation, and design of a digitally-created project and includes a short clip with audio.**

- 15.1 Design various drawings representing the lip syncing process to include head tilts and phrasing.
- 15.2 Collect and display the concepts of the lip syncing design process and illustrate the pre-planning of how will work.
- 15.3 Create and describe facial expressions and lip syncing using phonemes.
- 15.4 Apply concepts that industry experts utilize to create cohesive sound clips and character lip syncing.

### Course Standard 16

#### AAVTC-AAGAD-16

**Create a video to illustrate finding, recording, editing, and producing a portion of an animatic/animation into a digital production and demonstrate rendering/exporting media into a standalone file format (.mov/.m4v/.wmv/.avi) position.**

- 16.1 Interpret and evaluate the various ways in which events are presented and information is communicated by visual image makers (e.g., graphic artists, documentary filmmakers, illustrators, news photographers).
- 16.2 Demonstrate using concepts to design, edit, and produce a production for audio, video, electronic, or printed presentation.
- 16.3 Explain key points and frames that change the view orientation.
- 16.4 Illustrate how to set the view orientation through a camera, and then apply concepts to move the camera through key points.
- 16.5 Create one or more cameras to use to define a camera view.
- 16.6 Apply concepts of camera use to rotate, pan, and zoom in on the model to define the animation.
- 16.7 Use concepts of animation to show a sequence of camera view orientations through time.

### Course Standard 17

#### AAVTC-AAGAD-17

**Create mechanical, optical and computer generated illusions for movies, television shows and computer games using software graphics programs that apply concepts in Digital Media.**

- 17.1 Assemble, edit, and synchronize enlarged storyboard images with audio production in a movie time line.
- 17.2 Create two and three dimensional images and models that can be animated to do things human bodies can't accomplish and things that are unsafe for people to attempt.
- 17.3 Create effects that would be impractical to reproduce live to enhance a production, ex. building explosions.
- 17.4 Hypothesize how things would happen in real life into a screen image.
- 17.5 Change the green screen image or shape into another through a seamless transition for digital media productions.

## Course Standard 18

### AAVTC-AAGAD-18

**Create a portfolio, or e-portfolio, using a website that demonstrate skills, experience, and showcases work that would help obtain a job.**

- 18.1 Create and critique a resume
- 18.2 Obtain letters of recommendations and references.
- 18.3 List and explain job skills.
- 18.4 Demonstrate uploading video demo reels highlighting skill sets.

## Course Standard 19

### AAVTC-AAGAD-19

**Apply concepts of collaborating effectively in group media production.**

- 19.1 Use concepts of leadership to solve non-routine problems that benefit the common good of the group involved in a collaborative experience by utilizing the strengths of each individual in a group production.
- 19.2 Create collaboratively a studio or location segment in which each student produces and directs his/her designed project with other team members supporting the producer/director.
- 19.3 Demonstrate using teamwork and flexibility to collaboratively complete post-production tasks.

## Course Standard 20

### AAVTC-AAGAD-20

**Identify logistical, ethical, and legal Issues related to digital media and apply concepts to use of text, graphics, animation, sound, video, and digital images in digital products.**

- 20.1 Apply the privacy, legal and ethical issues of digital media ensuring to meet the W3C standards and web accessibility requirements for completed digital products including but not limited to copyright, digital rights management, piracy, trademark, open source, plagiarism, fair use, permission, creative commons license, etc.
- 20.2 Demonstrate appropriate legal and ethical behavior when using social media.
- 20.3 Identify violations of copyright and trademark.
- 20.4 Explain the major local, district, state, and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.
- 20.5 Explain the role of personal integrity and ethical behavior in the workplace.
- 20.6 Analyze the ways in which current laws and regulations enforce appropriate financial practices.

## Course Standard 21

### **AAVTC-AAGAD-21**

**Examine how related student organizations are integral parts of career and technology education courses through leadership development, school and community service projects and competitive events.**

- 21.1 Explain the purpose, mission, objectives, motto, colors, official dress and other distinguishing characteristics of SkillsUSA.
- 21.2 Explain how participation in SkillsUSA can promote lifelong responsibility for community service, professional growth and development.
- 21.3 Explore the impact and opportunities SkillsUSA can develop to bring business and industry together with education in a positive working relationship through innovative leadership and career development programs.
- 21.4 Explore the local, state, and national opportunities available to students through participation in SkillsUSA including but not limited to conferences, competitions, community service, philanthropy, and other SkillsUSA activities.