

Instructional Terminology

Digital Animation 10.0304.00



This **Instructional Terminology** defines entry-level industry terms identified by the program's Technical Standards, Measurement Criteria, and Instructional Framework. This resource is designed for use in classroom and laboratory environments to ensure students are introduced to the essential occupational terminology relevant to their program. It supports the consistent use of terms and definitions in curriculum, instruction, and assessment, and corresponds with the Technical Standards endorsed on July 13, 2020.

1,2,3

3D modeling - The process of using specialized software to create digital objects and/or characters

A

Animatic - A rough animation used by animators to give some idea about the timing of a sequence

Animation - The art of creating the illusion of motion with a series of still images

Anticipation - An action that prepares the audience for a main movement

Appeal - The quality that makes a design or character attractive and interesting

Arcs - Curved paths that natural movements follow

Art test - A small assignment given by a potential employer to gauge an applicant's skill level

Aspect ratio - The relationship between the width and height of a screen or image

Asset lists - Inventories of files, images, sounds, or models used in a project

B

Balance - The distribution of visual weight in a composition

Bird's-eye view - A camera angle that looks straight down from above

Bone - An object placed inside the skeleton of a character rig that represents an anatomical bone

Boolean - An object created by combining two objects using mathematical operators such as subtraction or intersection

Box modeling - Building a complex 3D model by starting with a simple cube or box

C

Camera angle - The specific location at which a camera is placed to take a shot

Camera move - A movement of a 3D camera, often analogous to real-world cinematography

Camera path - The route a virtual camera follows in a scene

Canted angle - A tilted camera angle that creates unease or tension

Character rig - A set of objects and controls that control the position and rotations of bones in a rig to make a character move

Character sheet - A detailed illustration of the overall design of a character, including color palette and multiple angles

Chiaroscuro - The use of strong light and shadow to define a light source and indicate form

Chroma keying - Replacing a solid background color with another image or video

Close-up - A camera shot that focuses tightly on a subject

Color - The visual quality created by the wavelengths of light reflecting off a surface

Color palette - A chosen group of colors for a design or project

Color psychology - The study of how colors affect emotions and behavior

Compositing - Combining different visual elements into a single image or sequence

Compositing software - Programs used to merge images, video, or effects

Composition - The arrangement of elements in a visual work

Compression - Reducing file size while keeping as much quality as possible

Computer basics - Essential knowledge for using and operating a computer

Concept art - Artwork created to show the visual development of assets for a project

Constraint - A controller that can help to limit an object's position, rotation, or scale through a binding relationship with another object

Contract - A written agreement between two parties intended to be enforceable by law that creates a duty for each to do or not do something

Contrast - A strong difference between two elements, such as light and dark

Control vertex - A point that helps to define the shape of a NURBS curve or surface

Copyright - A law that protects ownership of creative works

Cover letter - A one-page letter submitted as part of a job application to briefly summarize your professional background

Crane shot - A high camera shot that moves in any direction using a crane-like motion to expand the viewer's perspective

Crunch time - A labor-intensive and compulsory period of overtime work near the deadline of a project

Customer service - Helping users or clients with questions and problems

D

Demo reel - A collection of short clips that showcases an artist's abilities to potential employers

Depth of Field (DoF) - The range of distance in a shot that appears sharp

Diamond junction - An edge configuration that allows the decrease of polycount when joining one body part to another

Digital sculpting - Shaping 3D models using tools or software that mimic clay

Directional light - Light that shines from a single direction

Displacement map - A black and white image used to generate surface detail that modifies the underlying geometry of a model

Dolly shot - A camera movement that moves smoothly forward or backward, mimicking a camera on a cart/dolly

E

Edge - The line connecting two faces on a polygon object

Edge flow - The path of connected edges over a 3D model's surface

Edge loop - A set of connected edges across a surface

Edit point - A point that lies directly on a curve or a surface that can change the shape of the geometry

Editing - Selecting, cutting, and arranging clips or images to create a finished piece

Efficient meshes - 3D models built with the right amount of detail for performance

Emphasis - The part of a design that draws the most attention

Exaggeration - Making movements or designs more extreme for effect

Exposure sheets - Charts that guide the timing of animation frames

Expression sheet - A drawing of various poses and facial expressions illustrating how the character conveys emotion

External drive - A portable device for storing files outside a computer

Extreme close up - A shot that shows very fine detail on an object or a part of the face

Extreme long shot - A shot that shows a subject from a very far distance

Eye-level - A camera angle placed at the viewer's natural height

F

Face - The flat area between edges and vertices on a polygon object

Falloff - The way the intensity of a light diminishes with distance from its source

Field of View (FOV) - How much of a scene a camera lens can capture

File extensions - Letters at the end of a file name that show its type

File type - The format that tells how a file stores information

Fill light - A softer light that reduces shadows in a scene

Follow through and overlapping action - Motion that initiates in one part of the body and sequences to the next, or moves in reaction to the main motion of the body

Forces - Simulated energy, such as gravity, wind, or push, applied in animation

Form - A 3D shape that has depth as well as width and height

Forward Kinematics (FK) - Creating motion by rotating higher in the joint chain to affect joints farther down the chain

Frame - One image in an animation

Frame rate - The number of frames shown per second in animation or video

Free and fair use - Rules that allow limited use of copyrighted material

Freelance - To pursue contract-based employment with multiple clients based on individual and often short-term projects

G

Gesture drawing - Quick sketches that capture movement and posture

Graph editor - A tool representing the interpolation of keyframes that can be used to adjust animation without setting new keyframes

Greenscreen - A solid green background replaced with another image

H

Hardware - The physical parts of a computer system

High angle - A camera shot from above looking downward

High Dynamic Range Image (HDRI) - A photo file that captures a wide range of light levels

Human proportions - The standard size relationships of the human body

I

IK handle - A control used for inverse kinematics in rigging

Inbetweening - The generation of intermediate frames between keyframes

Inclusion - Making sure designs and workplaces welcome everyone

Interpolation - The way the movement of an object changes between keyframes

Inverse kinematics (IK) - Creating motion by rotating lower joints in the joint chain to affect joints farther up the chain

Isoparm - A line on a NURBS surface that defines its shape

J

Joints - Points of articulation between the bones in a character rig

K

Key light - The main light source in a scene

Keyframe - A frame that marks the start or end of a movement

Kit-bashing - Making new models by combining parts from others

L

Layer transparency - Adjusting how see-through a layer appears

Licensing - Permission to use software, music, or artwork legally

Light source - The origin of light in a scene

Light types - Different kinds of light, such as point, spot, or directional

Lighting - The arrangement of lights in a scene

Line - A mark that shows direction, edges, or outlines

Long shot - A shot that shows the full subject and surroundings

M

Mask - A shape used to modify layer attributes, effects, and properties

Match moving - Matching computer graphics to the movement of a real camera

Material - A set of attributes that determine the way a surface reacts to light

Matte - A layer or channel that removes parts of an image to reveal layers underneath

Medium shot - A shot that shows a subject from about the waist up

Microphone - A device that captures sound

Mirroring - Copying one side of a model or motion onto the other

Model sheet - Drawings of a character in the 'A' or 'T' pose that modelers use for reference when building a 3D character

Modifiers - Tools that change or add effects to 3D models

Monetization - Earning money from creative work

Motion blur - The blurring of certain in between frames in a render to make fast movement appear smoother and more realistic

Motion capture - Recording real movement to apply to digital models

Motion path - A curve that an object can be attached to that directs the movement of that object

Motion tracking - Recording the movement of one object and applying that data to the movement of another

Movement - The visual flow through an image

N

Naming conventions - Standard rules for naming files or objects

Node-based system - A system where multiple nodes connect to build assets or effects

Non-linear deformers - Tools that bend or twist objects in complex ways

Normal - A line that indicates the direction a surface is facing

Normal map - An image that uses surface normal data to create the illusion of detail on a low-poly model

NURBS curve - A vector-based curve used for creating smooth, organic 3D shapes

NURBS surface - A smooth surface made from vector-based curves

O

Omni light - A light source that shines in all directions

Over the shoulder - A camera shot framed from behind a person's shoulder

P

Painting weights - Adjusting how much influence joints have on mesh surfaces

Pan - A camera movement that rotates left or right

Particle systems - A large number of very small points whose behavior is determined using simulated physics to create natural effects such as sparks or rain

Patch - A four-sided surface between the isoparms on a NURBS surface

Pattern - A repeated design element

Perspective - A drawing method that uses parallel lines that converge at vanishing points to show depth and space

Phong - A shading method that makes surfaces look smooth and shiny

Physically Based Rendering (PBR) - A method of rendering that simulates real-world lighting

Pivot - The rotation point of an object

Plagiarism - Using someone else's work without credit

Platform specifications - The technical details needed for software or hardware

Point - A location in space with no size, used in design or 3D work

Polygon - A flat geometry element formed by connecting three or more vertices

Polygon count - The number of flat surfaces in a 3D model

Portfolio - An edited collection of an artist's best work intended to showcase their skills, style, and methods to potential employers

Post-production - Work done after filming/rendering, comparable to editing and effects

Pre-production - Planning and preparation before production starts

Primitive - A simple three-dimensional form used as the basis for geometry modeling

Procedural texture - A texture that is generated mathematically instead of using an external image

Production - The phase where actual work is created or filmed

Q

Quality control - Checking that work meets required standards

R

Rack focus - Shifting DoF focus from one subject to another in the same shot

Radial edge flow - An edge configuration in which edges lead out from a center point or edge loop

Ray tracing - A rendering method that follows light rays as they reflect around the scene

Real-time rendering - Instantly generating images as they are created

Rendering - The process of creating the final image or animation

Representation - How an idea, object, or person is shown in media

Repurposing assets - Reusing files or designs for a new project

Resolution - The number of pixels in an image or screen

Resume - A formal document outlining a person's professional skills, qualifications, and experience

Rhythm - A pattern of repeated movement or design

Rigging - Building a skeleton with constraints, controllers, and kinematic systems, and linking it to the mesh to control a 3D model

Rigid body dynamics - Movement of objects that do not deform upon collision using simulated physics

Rim light - A light placed behind a subject to create a glowing outline

Rotation - Changes to the angle of a joint

Rule of thirds - A design guideline that divides an image into nine parts to locate the best positions for a focal point

S

Scanner - Device that captures physical images in digital form

Seamless texture - A texture image that can repeat without showing edges

Secondary action - The movement of smaller objects in the scene in reaction to the main action

Set Driven Keys (SDKs) - Animation controls that use one attribute to control another

Setting keyframes - Marking points that define changes in animation

Shader - A node containing texture information used to assign the texture information to the model

Shader networks - Linked shaders that control surface looks

Shader types - Different shaders used for effects such as light or texture

Shading - The use of light and dark to show depth and/or form

Shape - A flat, enclosed space defined by lines or edges

Silhouette sketches - A series of drawings, filled in with a solid dark color, used to explore various character design ideas

Simulations - Computer-based recreations of real-world effects based on physics

Skeleton - The rig structure used to define and control the motion of a model during animation

Skinning/binding - Attaching a 3D mesh to a skeleton for animation

Slow in and slow out - Animation that starts slowly before speeding up and ends slowly after fast movement

Software - Programs used to create, edit, or animate

Solid drawing - Creating animation that holds its form, volume, and proportions accurately

Space - The area around, between, or inside objects

Span - The space between the points on a NURBS curve

Specularity - The reflectivity and shininess of a material

Spill suppressor - A tool that reduces color spill in greenscreen effects

Spotlight - A light source that shines in a cone shape

Squash and stretch - Exaggerated elasticity in animation that shows weight and impact

Staging - The arrangement of elements in a scene to create a clear narrative

Storyboard - A sequence of drawings showing how a film will unfold

Straight ahead and pose to pose - An approach to animation that varies based on whether the artist starts from the beginning or plans out keyframes ahead of time

Symmetrical - Balanced the same on both sides

T

Tablet - A device with a pen for drawing digitally

Tangents - Handles on keys in the Graph Editor that allow an animator to manipulate the curves between keys

Texture - The surface look or feel of an object

Texture pinching – When UVs are too far apart in the UV map, creating a compressed look to the texture image

Texture stretching – When UVs are too close together in the UV map, creating a stretched look to the texture image

Texturing - Adding surface details to 3D models

Three-point lighting - A standard lighting setup using a key, fill, and rim light to illuminate a subject

Thumbnails - Small sketches for brainstorming ideas quickly

Tiling - Duplicating an image or texture across a surface

Tilt - A camera move that angles up or down

Timeline - The display showing the timing of the keyframes in a sequence of animation

Timing - The spacing of keyframes to control speed of movements

Trademark - A symbol or word legally protecting a brand

U

Uncanny valley - An unsettling feeling in response to not-quite-human looking figures or characters

Unity - The sense that all parts of a design belong together

Up and over junction - An edge configuration that redirects part of your edge flow when one body part branches off from another

UV unwrapping - The process of flattening a model's UVs into a 2D space so that textures can be accurately applied

UVs - The coordinate system used for assigning textures to polygonal models

V

Value - The lightness or darkness of a color

Variety - The use of differences to make design interesting

Vertex - The point at the corner of intersecting edges on a polygon object

Visual development - Art that explores the style and look of a project

Visual effects - Computer-generated imagery added to film or video

W

Wireframe - A simple grid of lines used to represent the geometric structure of a 3D model

Worm's eye view - A view of an object from below, used to make an object look oversized and give the viewer a sense of smallness

X

X-loops - An edge configuration made up of two U-shaped rows of faces that intersect each other over a joint

Y

Z

Zoom - A camera move that changes the lens to magnify or shrink the view