VCIL-2040: 3D MOTION

Cuyahoga Community College

Viewing: VCIL-2040 : 3D Motion
Board of Trustees:
October 2019

Academic Term:
Fall 2020

Subject Code
VCIL - VC-Illustration

Course Number:
2040

Title:
3D Motion

Catalog Description:
Technical and aesthetic fundamentals of 3D motion design and 3D animation. Use of industry standard software to develop 3D animation for broadcast and Internet audience. Projects may include 3 Dimensional motion graphics and animation for information graphics, product visualization, instructional design and environmental visualization. Various topics including 3D modeling, key framing, timeline and camera animation. Introduces basic animation strategies to fulfill 3D motion graphics and visualization concepts.

Credit Hour(s):
3

Lecture Hour(s):
2
Lab Hour(s):
2

Requisites

Prerequisite and Corequisite
VCIL-1640 3D Design or concurrent enrollment; or departmental approval.

Outcomes
Course Outcome(s):
Develop 3D animation for broadcast and Internet audiences.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Describe various 3D animation tools and systems used by 3D visualization industry.
2. Research animation and motion graphics principles and practices.
3. Develop thumbnails, storyboards, other preproduction and planning strategies for 3D animation.
4. Identify technical requirements for development of motion graphics and animation projects.
5. Explain the relationship between traditional, 2D and 3D animation concepts.
6. Design 3D models for use in 3D motion graphics application.
7. Apply basic animation principles to move, rotate and scale objects, lights and cameras to achieve animation strategy.
8. Create keyframe animations of objects, lights and cameras.
9. Render animation according to required project specifications for postproduction or final output.

Methods of Evaluation:
1. Written assignments
2. Laboratory exercises
3. Case studies
4. Exams
5. Quizzes
6. Projects
7. Presentations
8. Portfolio

Course Content Outline:
1. Review of 3D modeling content creation
   a. Primitives
   b. Polygons
   c. Subsurface
   d. Splines
   e. Deformers
   f. Extrusion
2. Preproduction and concept (Design, Develop & Deploy)
   a. Audience, story and message
   b. Thumbnails, storyboards and animatics
   c. Animation roughs
3. Animation principles
   a. Squash and stretch
   b. Timing and motion
   c. Anticipation
   d. Staging
   e. Follow through
   f. Straight ahead action and pose-to-pose
   g. Ease In/Out
   h. Arc
   i. Exaggeration
   j. Secondary action
   k. Appeal
4. Keyframes
   a. Manual keyframe
   b. Auto keyframe
   c. Keyable attributes
5. Camera
   a. Free camera
   b. Target camera
   c. Focal length
   d. Field of view
   e. Safe field
   f. Action safe field
   g. Animating camera vs. animating object
6. Special effects
   a. Deformers
   b. Emitters
   c. Particles
   d. Effectors
   e. Motion blur
7. Timeline
   a. Frame per second (FPS)
   b. Managing wlements
   c. Animation curves
   d. Interpolation
8. Rendering

a. Render settings
b. Render path
c. Render format
d. Multipass render
e. Codec
f. Output

Resources

ArtStation.. Ballstiq Digital Inc, 2018. https://www.artstation.com

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CGSociety: Networking platform for professional digital artists. 2018. https://cgsociety.org

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C4D Cafe. . 2018. http://www.c4dcafe.com

Grey Scale Gorilla. 2018. https://greyscalegorilla.com

Tickoo, Sham. *CINEMA 4D 11 Workshop*. CADCIM Technologies; 6 edition , 2018.

Sketchfab. New York, NY: Sketchab, 2018. https://sketchfab.com

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The Polycount Newfeed. 2018. https://polycount.com

Resources Other

1. http://www.cgsociety.org
2. http://www.c4dcafe.com

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