COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Introduction to 3D Modeling
COURSE NUMBER	MMVP 0160
DIVISION	Career and Technical Education
DEPARTMENT	MMVP
CIP CODE	24.0101
CREDIT HOURS	4
CREDIT HOUR BREAKDOWN	Class: 2 Lab: 4
PREREQUISITES	None
COREQUISITES	None

COURSE DESCRIPTION
The fundamentals of digital 3D animation will be studied including modeling, endomorph creation, animating using key frame and graph editing and rendering for multiple output. Lighting and camera work and surfacing will be reviewed and practically employed in a project format.

PROGRAM LEARNING OUTCOMES

1. The student will define the hardware and interactive requirements that comprise multimedia
2. The student will compare and contrast technical developments in multimedia and their impact on society
3. The student will create digital audio, digital still images and video images that exemplify the elements and principles of professional level asset acquisition
4. The student will edit original digital content including audio, video and still images
5. The student will create original content by applying the elements and principles of aesthetics and design
6. The student will demonstrate the ethical use of video, audio and copyright law to their creation of media.
7. The student will evaluate the time, scope and medium requirements of multiple projects and create a plan that will result in the on-time completion
8. The student will analyze the scope and medium requirements of multimedia projects, project a completion date and submit the finished work by that date

TEXTBOOKS
http://kckccbookstore.com/

METHOD OF INSTRUCTION
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations,

projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE
I.   An Introduction to the World of 3D
   A. 3D Space
   B. Understanding the 3D Pipline
II. The LightWave Suite
   A. Modeler
   B. Layout
III. Basic Skills: Modeling
   A. Vertices
   B. Polygons
   C. Edges
   D. Normals
   E. Planar vs. Non-planar
   F. Statistics Panel
   G. Grouping
   H. Selection
   I. Primitives
   J. Text
   K. Modification
   L. Multiplication
   M. Construction
   N. Detail
IV. Basic Skills: CG Filmmaking
   A. New Camera Technologies
   B. Lightwave's camera
   C. Print Quality
   D. Camera Effects
   E. Perspective Camera Type
   F. Orthographic camera Type
   G. Advanced Camera Type
   H. Surface Baking Camera Type
   I. Tracking
   J. Animation
V. Basic Skills: Lighting
   A. Lighting Terminology
   B. Lighting Intensity
   C. Lighting Type
   D. Ray Tracing
   E. Falloff
   F. Rendering
VI. Basic Skills: Surfacing
   A. Surfacing System Components
   B. Surface Basics
   C. Surface Editor
   D. Copying and Pasting

E. Primary Attributes
F. Still Life
G. Textures
H. Layer Types
I. Blending Modes
J. Layer Opacity
K. Adding and Removing Layers
L. Working with layers
M. Procedural Textures
N. Gradients
O. Shaders
VII. **Basic Skills: Rendering**
A. What is rendering?
B. Initiating a Render
C. The Render Stutus Window
D. Image viewer
E. Render globals Window
F. The effects Panel
G. Visor

COURSE LEARNING OUTCOMES AND COMPETENCIES
Upon successful completion of this course, the student will:

A. Identify the components of the LightWave interface and the 3D pipline.
1. Define the components of 3D space
2. Identify the components of LightWave menu interface
3. Explain the 3D creation process as presented as the 3D pipline

B. Demonstrate use of basic modeling tools
4. Create and manipulate vertices
5. Create and manipulate polygons
6. Create and manipulate normals
7. Utilize the Statistics Panel to make selections
8. Create and modify geometry using primitives
9. Create 3Dimensional text

C. Demonstrate basic CG filmmaking skills
10. Identify new camera technologies
11. Identify the controls of the LightWave camera
12. Differentiate orthographic and perspective camera
13. Apply camera controls to surface baking
14. Demonstrate camera tracking
15. Create and modify camera based animation.

D. Demonstrate basic CG Lighting skills
16. Define key Lighting Terminology
17. Adjust Lighting Intensity

18. Modify Lighting Type
19. Modify Ray Tracing
20. Modify Falloff

E. Demonstrate basic surfacing skills
21. Modify Surfaces with the editor
22. Copy and Paste surfaces
23. Identify Primary Attributes of surfaces
24. Identify Layer Types
25. Identify layer Blending Modes
26. Create and modify procedural Textures
27. Apply Gradients and Shaders

F. Demonstrate basic rendering skills
28. Describe the function of rendering
29. Initiate a Render
30. Monitor render progress with the Render Status Window
31. Apply appropriate setting to the Render Globals Window
32. Identify the components of The Effects Panel

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES
Student progress is evaluated through both formative and summative assessment methods.
Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES
Student Handbook
https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf

College Catalog
https://www.kckcc.edu/academics/catalog/index.html

College Policies and Statements
https://www.kckcc.edu/about/policies-statements/index.html

Accessibility and Accommodations
https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html.