SYLLABUS

DATE OF LAST REVIEW: 02/2013

CIP CODE: 10.0304

SEMESTER: Departmental Syllabus

COURSE TITLE: Introduction to 3D Modeling

COURSE NUMBER: MMVP0160

CREDIT HOURS: 4

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: Departmental Syllabus

EMAIL: KCKCC issued email accounts are the official means for electronically communicating with our students.

PREREQUISITES: None

REQUIRED TEXT AND MATERIALS: Please check with the KCKCC bookstore, http://www.kckccbookstore.com/, for the required texts for your particular class.

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.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on the content area. These include but are not limited to: lecture, multimedia, cooperative learning, labs and demonstrations, projects and presentations, speeches, debates and panels, conferencing, learning experiences outside the classroom and performance. 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 Pipeline

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 Status Window
D. Image viewer
E. Render globals Window
F. The effects Panel
G. Visor

EXPECTED LEARNER OUTCOMES:
A. Upon successful completion of the course the student will be able to identify the components of the LightWave interface and the 3D pipeline.
B. Upon successful completion of the course the student will be able to demonstrate use of basic modeling tools
C. Upon successful completion of the course the student will be able to demonstrate basic CG filmmaking skills
D. Upon successful completion of the course the student will be able to demonstrate basic CG Lighting skills
E. Upon successful completion of the course the student will be able to demonstrate basic surfacing skills
F. Upon successful completion of the course the student will be able to demonstrate basic rendering skills

COURSE COMPETENCIES:
The student will identify the components of the LightWave interface and the 3D pipeline.
1. The student will define the components of 3D space
2. The student will identify the components of LightWave menu interface
3. The student will explain the 3D creation process as presented as the 3D pipeline

The student will demonstrate use of basic modeling tools
4. The student will create and manipulate vertices
5. The student will create and manipulate polygons
6. The student will create and manipulate normals
7. The student will utilize the Statistics Panel to make selections
8. The student will create and modify geometry using primitives
9. The student will create 3Dimensional text

The student will demonstrate basic CG filmmaking skills
10. The student will identify new camera technologies
11. The student will identify the controls of the LightWave camera
12. The student will differentiate orthographic and perspective camera
13. The student will apply camera controls to surface baking
14. The student will demonstrate camera tracking
15. The student will create and modify camera based animation

The student will demonstrate basic CG Lighting skills
16. The student will define key Lighting Terminology
17. The student will adjust Lighting Intensity
18. The student will modify Lighting Type
19. The student will modify Ray Tracing
20. The student will modify Falloff

The student will demonstrate basic surfacing skills
21. The student will modify Surfaces with the editor
22. The student will copy and Paste surfaces
23. The student will identify Primary Attributes of surfaces
24. The student will identify Layer Types
25. The student will identify layer Blending Modes
26. The student will create and modify procedural Textures
27. The student will apply Gradients and Shaders

The student will demonstrate basic rendering skills
28. The student will describe the function of rendering
29. The student will initiate a Render
30. The student will monitor render progress with the Render Status Window
31. The student will apply appropriate setting to the Render Globals Window
32. The student will identify the components of The Effects Panel

ASSESSMENT OF LEARNER OUTCOMES:
1. Attendance and participation is required
2. Completion of all assigned projects
3. Completion of all quizzes
SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center at (913) 288-7670 V/TDD.