

# DRAF 291: LEARNING MAYA TRANSITIONS

## Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2023
Credits:	3
Total Contact Hours:	90
Lecture Hours :	36
Lab Hours:	54
Hours Arranged:	0
Outside of Class Hours:	72
Prerequisite:	DRAF 290.
Transferable to CSU:	Yes
Transferable to UC:	No
Grading Method:	Standard Letter

## Catalog Course Description

Explores how modeling, animating and rendering using CAD, and other 3D interfaces transition into Maya. This course builds an advanced foundation using animation and special effects. The course uses the two different sections of the Learning Maya Transitions book to provide the student with an overview of the Maya environment and how it can be applied to their work. 36 lecture hours, 54 lab hours.

## Course Objectives

- model a character using CV pulling, lattices and skeleton joints
- animate using various Set Key techniques then edit the quality of the animation using the Graph Editor and the Dope Sheet
- build Shading Groups using various types of texture maps
- create particle effects that are integrated into an animated scene
- render single frames and animated sequences
- use Maya's MEL (Maya embedded language) programming language to build simple functions and custom user interface controls
- learn how to integrate these various elements to model, animate and render a complete scene from start to finish
- create skeleton joints and bind the character's skin to the skeleton.

## Major Course Content

1. Modeling a Character: Building Salty
  - a. Layers
  - b. Selection modes and selections masks
  - c. CV edits
  - d. Skeleton joints
  - e. Binding the character's skin to the skeleton
  - f. Developing a shading group for the seal skin
2. Adding Facial Details Part One
  - a. Building an eyeball hierarchy
  - b. Aim constraint
  - c. Lattice and cluster deformers
  - d. Adding an attribute to a node
  - e. Driven key
3. Adding Facial Details Part Two
  - a. Building the whiskers
  - b. Parenting the parts into the skeleton
4. Animating the Character
  - a. Spline and single IK chains
  - b. Setting keys
  - c. Point constraints
5. Animating Salty
  - a. Constraints for the bouncing ball
  - b. Soft body dynamics for the seal's whiskers
6. Building the Set
  - a. Modeling curves and surfaces
  - b. Colored lights
  - c. Positioning lights
  - d. Animating the camera
7. Texture Mapping
  - a. Texture mapping effects
  - b. Layering shaders
  - c. Working with shading groups – node connections
8. Raytracing
  - a. Raytrace rendering set up
  - b. Surface tessellation
  - c. Batch rendering
  - d. Rendering tips and techniques
9. Blinking with MEL
  - a. What is an MEL command?
  - b. Building and manipulating objects with MEL
  - c. Creating a MEL function
  - d. Creating a custom user interface window
10. Procedural Animation
  - a. Lofting a surface
  - b. Curves on surfaces
  - c. Keyframe animation
  - d. Motion path animation
  - e. Connecting attributes

## Lab Content

The Lab Content is applied from the Lecture content. It also explores how modeling, animating and rendering using CAD, and other 3D interfaces transition into Maya.

1. Modeling a Character: Building Salty
  - a. Creating Layers
  - b. Selection modes and selections masks
  - c. CV edits
  - d. Creating Skeleton joints
  - e. Binding the character's skin to the skeleton
  - f. Developing a shading group for the seal skin
2. Adding Facial Details Part One
  - a. Building an eyeball hierarchy
  - b. Aim constraint
  - c. Creating Lattice and cluster deformers
  - d. Adding an attribute to a node
  - e. Creating a Driven key
3. Adding Facial Details Part Two

- a. Building the whiskers
- b. Parenting the parts into the skeleton
4. Animating the Character
  - a. Creating Spline and single IK chains
  - b. Setting keys
  - c. Creating Point constraints
5. Animating Salty
  - a. Creating Constraints for the bouncing ball
  - b. Creating Soft body dynamics for the seal's whiskers
6. Building the Set
  - a. Modeling curves and surfaces
  - b. Creating Colored lights
  - c. Positioning lights
  - d. Animating the camera
7. Texture Mapping
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## Instruction Type(s)

Lab, Lecture

## Suggested Reading Other Than Required Textbook

Leonardo Da Vinci's works on perspective and lighting.

## Examples of Required Writing Assignments

Lab reports and class assignments.

## Examples of Outside Assignments

Students will draw animation and 3D projects. Students will explore 3D lighting and shading projects. Students will develop a final project. Students will be required to complete the following types of assignments outside of the regular class time: draw, study, answer questions, practice skills, read required materials, solve problems, write essays, research papers, lab reports, and journals. Students will also observe activities related to course content, participate in activities related to course content.