# ART235 : 3-D Character Animation

## General Information

| | |
|---|---|
| **Author:** | • Roger Dickes |
| **Course Code (CB01) :** | ART235 |
| **Course Title (CB02) :** | 3-D Character Animation |
| **Department:** | ART |
| **Proposal Start:** | Fall 2024 |
| **TOP Code (CB03) :** | (0614.40) Animation |
| **CIP Code:** | (10.0304) Animation, Interactive Technology, Video Graphics, and Special Effects. |
| **SAM Code (CB09) :** | Clearly Occupational |
| **Distance Education Approved:** | No |
| **Will this course be taught asynchronously?:** | No |
| **Course Control Number (CB00) :** | CCC000559739 |
| **Curriculum Committee Approval Date:** | 02/28/2024 |
| **Board of Trustees Approval Date:** | 04/16/2024 |
| **Last Cyclical Review Date:** | 02/28/2024 |
| **Course Description and Course Note:** | ART 235 provides students with three dimensional (3-D) character animation training. Students will learn animation controls to pose a character in time using keyframes and breakdowns and animating to an audio/dialog track. Note: Current industry standard digital animation software (Maya) will be used. |
| **Justification:** | Mandatory Revision |
| **Academic Career:** | • Credit |

## Academic Senate Discipline

| | |
|---|---|
| **Primary Discipline:** | • Art |
| **Alternate Discipline:** | No value |
| **Alternate Discipline:** | No value |

## Course Development

**Basic Skill Status (CB08)**

Course is not a basic skills course.

☐ Allow Students to Gain Credit by Exam/Challenge

**Course Special Class Status (CB13)**

Course is not a special class.

**Pre-Collegiate Level (CB21)**

Not applicable.

**Grading Basis**

- Grade with Pass / No-Pass Option

**Course Support Course Status (CB26)**

Course is not a support course

## Transferability & Gen. Ed. Options

**General Education Status (CB25)**

Not Applicable

**Transferability**

Transferable to both UC and CSU

**Transferability Status**

Pending

## Units and Hours

### Summary

| | |
|---|---|
| **Minimum Credit Units (CB07)** | 3 |
| **Maximum Credit Units (CB06)** | 3 |
| **Total Course In-Class (Contact) Hours** | 72 |
| **Total Course Out-of-Class Hours** | 90 |
| **Total Student Learning Hours** | 162 |

### Credit / Non-Credit Options

**Course Type (CB04)**

Credit - Degree Applicable

**Noncredit Course Category (CB22)**

Credit Course.

**Noncredit Special Characteristics**

No Value

**Course Classification Code (CB11)**

Credit Course.

**Funding Agency Category (CB23)**

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

### Weekly Student Hours

| | In Class | Out of Class |
|---|---|---|
| Lecture Hours | 2 | 4 |
| Laboratory Hours | 0 | 0 |
| Studio Hours | 2 | 1 |

### Course Student Hours

| | |
|---|---|
| **Course Duration (Weeks)** | 18 |
| **Hours per unit divisor** | 54 |
| **Course In-Class (Contact) Hours** | |
| Lecture | 36 |
| Laboratory | 0 |
| Studio | 36 |
| **Total** | 72 |
| **Course Out-of-Class Hours** | |
| Lecture | 72 |
| Laboratory | 0 |
| Studio | 18 |
| **Total** | 90 |

## Time Commitment Notes for Students

No value

## Units and Hours - Weekly Specialty Hours

| Activity Name | Type | In Class | Out of Class |
|---|---|---|---|
| No Value | No Value | No Value | No Value |

## Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite: None.

## Entry Standards

**Entry Standards**

## Course Limitations

**Cross Listed or Equivalent Course**

## Specifications

**Methods of Instruction**

| | |
|---|---|
| **Methods of Instruction** | Lecture |
| **Methods of Instruction** | Laboratory |
| **Methods of Instruction** | Demonstrations |
| **Methods of Instruction** | Collaborative Learning |
| **Methods of Instruction** | Multimedia |

**Out of Class Assignments**

- Blocking out a character animation
- Creating key frames for facial animation and lip sync
- Creating key frames for body animation

| Methods of Evaluation | Rationale |
|---|---|
| Project/Portfolio | Projects and assignments |
| Exam/Quiz/Test | Midterm Exam |
| Exam/Quiz/Test | Final Exam |
| Project/Portfolio | Final Project |

**Textbook Rationale**

There is no textbook for this course. Any additional materials/handouts may be assigned by the instructor.

**Textbooks**

| Author | Title | Publisher | Date | ISBN |
|---|---|---|---|---|
| No Value | No Value | No Value | No Value | No Value |

**Other Instructional Materials (i.e. OER, handouts)**

No Value

**Materials Fee**

No value

## Learning Outcomes and Objectives

**Course Objectives**

Pose the skeleton of a 3-D character.

Create a simple character animation by key-framing two basic poses.

Animate a biped character walking using 4 poses and at least 4 key-frames.

Animate a biped character jumping using 7 poses and at least 7 key-frames.

Animate a biped character running using hierarchical key-frame animation technique.

Animate a biped character dancing using hierarchical key-frame animation technique.

Analyze biped motion and be able to recreate it using 3-D animation techniques.

**SLOs**

**Create a character or creature animation using 3-D animation techniques.** Expected Outcome Performance: 70.0

| | |
|---|---|
| *ILOs* Core ILOs | Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas. |
| | Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems. |

**Operate the character animation toolset in a 3-D animation software application.** Expected Outcome Performance: 70.0

| | |
|---|---|
| *ILOs* Core ILOs | Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems. |

## Additional SLO Information

**Does this proposal include revisions that might improve student attainment of course learning outcomes?**

No

**Is this proposal submitted in response to learning outcomes assessment data?**

No

**If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.**

No Value

**SLO Evidence**

No Value

## Course Content

Lecture Content

**Character Hierarchy and Control (5 hours)**

- The root locator
- Back and neck joints
- Arms
- Selection modification
- Set driven key and indirect controls
- Things not to do with joints

**Posing a Biped Character (5 hours)**

- The root locator
- Legs and knees
- Back joints and distribution of weight
- Arm joints
- Hand controls
- Neck joints

**Keyframe Animation (6 hours)**

- Definition of a key-frame
- The graph editor and dope sheet
- Maya Embedded Language (mel) scripts
- Key-frames
- Key-framing poses 6. Animation preview

**Analyzing Motion (5 hours)**

- Trajectory of pelvis
- Relationship of placement of feet to disposition of pelvis
- The “inside out” model of the kinetics of the upper body

**Problem Solving Key-frames problems (6 hours)**

- Posing
- Timing
- Motion arcs
- Animation problems
- Writing over key-frames
- Deleting and copying key-frames
- Editing curves

**Working with Audio (5 hours)**

- Importing audio
- Audio file types
- Viewing audio in timeline
- Animating in time with audio

**Animating Blendshapes (4 hours)**

- Pose-based facial animation
- Muscle-group based facial animation

- Blendshape animation
- Time with audio

**Total hours: 36**

Laboratory/Studio Content

**Character Hierarchy and Control (5 hours)**
- The root locator
- Back and neck joints
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- Things not to do with joints

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## Additional Information

**Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.**

No

GCC Major Requirements

No Value

**GCC General Education Graduation Requirements**

No Value

**Repeatability**

Not Repeatable

**Justification (if repeatable was chosen above)**

No Value

## Resources

**Did you contact your departmental library liaison?**

No

**If yes, who is your departmental library liason?**

No Value

**Did you contact the DEIA liaison?**

No

**Were there any DEIA changes made to this outline?**

No Value

**If yes, in what areas were these changes made:**

No Value

**Will any additional resources be needed for this course? (Click all that apply)**

- No

**If additional resources are needed, add a brief description and cost in the box provided.**

No Value