

MISSION STATEMENT

Miami International University of Art & Design is a multi-campus, career-oriented institution that provides students with academic preparation and practical skills through programs in the applied arts and design industries. The institution prepares its undergraduate students for entry-level positions and its graduate students for advancement in their chosen fields. The University is dedicated to fostering a culture that encourages creativity, research, and learning-centered endeavors.

COURSE SYLLABUS

Course Number: CA1101
Course Title: 2D Animation Principles
Class Meetings: 8AM - noon Tuesday
Session / Year: Winter 2012
Instructor Name: Krishna M. Sadasivam
Email Address: ksadasivam@aii.edu, krishna.at.ait@gmail.com (preferred)
Telephone: 813-393-5220 (Alex Buffalo)
Office Hours: see <http://www.sivamstudios.com/ait> for course assignments, rubrics and office hours

Course Description: In this course, students begin production of their digital portfolio. Through class activities, students organize their work to reflect and enhance their individual strengths in computer animation.

Course Length: 11 weeks
Contact Hours: 44 hours
Credit Values: 3 credits
Estimated Homework: 8 hours per week

Quarter Credit Hour Definition: A quarter credit hour is an amount of work presented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each for 10-12 weeks, or the equivalent amount of work over a different amount of time; or
2. At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, studio work, and other academic work leading to the award of credit hours.

Learning Objectives:

Upon successful completion of the course, the student will:

- ***Integrate straight-ahead animation, pose-to-pose, follow-through and overlapping action into a 2D animation***
- ***Integrate slow-in and slow-out, arcs, secondary action and timing into a 2D animation***
- ***Integrate exaggeration, weight, depth, balance, and appeal into a 2D animation***
- ***Develop an animation that utilizes cycles, anticipation, squash and stretch***
- ***Demonstrate an understanding of shape, weight, and space***
- ***Generate drawings that depict gesture and motion***

Apply industry-standard capture techniques, such as image scanning, video capture and pencil test in the creation of 2D animation

- ***Create, capture, manipulate and edit images using digital processes***
- ***Utilize the pencil test system to create 2D animation***

Course Prerequisite(s): CA1000, CA1601

Text(s): *Timing for Animation Second Edition, Harold Whitaker and John Halas,*
ISBN 978-0-240-52160-2

Materials and Supplies: Wacom Cintiq stylus, 9" x 12" sketchbook, pencils, DVD case, DVD-R and an open mind.

Instructor website: <http://www.sivamstudios.com/ait>

Technology Needed: an external data drive (for data backup)

Grading Scale: All assignments must have clear criteria and objectives. All students shall be treated equitably. It will be every student's right to know his or her grade at any reasonable time he or she requests it. The criteria for determining a student's grade shall be based on a percentage of total points, as follows:

93 – 100%	= A
90 – 92%	= A-
87 – 89%	= B+
83 – 86%	= B
80 – 82%	= B-
77 – 79%	= C+
73 – 76%	= C
70 – 72%	= C-
65 – 69%	= D+
60 – 64%	= D
0 – 59%	= F

**Student Evaluation /
Grading Policies:**

Refer to instructor’s website: <http://www.sivamstudios.com/ait> for course assignments and grading rubrics

PROJECTS: 70%

Bouncing Ball Animation	100
Obstacle Course with Squirrel Ball Animation	100
Character Model Sheets	100
Flour Sack Animation	100
Emotional Walk Animation	100
Vertical Lift Animation	100
Lateral Weight Animation	100
Sword in the Stone thumbnail and keys	60
Sword in the Stone animation	200
DVD containing all animations	100

QUIZZES AND EXAMS: 20%

ATTENDANCE: 10%

**Electronic Submission of
Assignments:**

Any assignments submitted to the instructor as electronic attachments to an email are the responsibility of the student. Instructor will acknowledge the receipt of the email to the student within 24 hours of receiving it. If the student does not receive an acknowledgement within 24 hours it is the students responsibility to contact the instructor, otherwise it is assumed that the assignment has not been sent.

Students with Disabilities:

The University provides accommodations to qualified students with disabilities. The Student Affairs Department assists qualified students with disabilities in acquiring reasonable and appropriate accommodations and in supporting equal access to services, programs and activities at the University.

Students who seek reasonable accommodations should notify the Dean of Student Affairs of their specific limitations and, if known, their specific requested accommodations. Students will be asked to supply medical documentation of the need of accommodation. Classroom accommodations are not retroactive, but are effective only upon the student sharing approved accommodations with the instructor. Therefore, students are encouraged to request accommodations as early as feasible with the Dean of Student Services to allow for time to gather the necessary documentation. If you have a concern or complaint in this regard, please contact the Dean of Student Affairs. Complaints will be handled in accordance with the University's Student Grievance Procedure for Internal Complaints of Discrimination and Harassment.

Course Attendance:

The University expects students to attend all scheduled meetings of each course. Students should be prepared to start the quarter on the first day of classes and to add/drop courses early in the first week of the quarter to minimize absences. Absences accrue against the student even if the student was not originally registered for the class but adds it after the start of classes.

Students who do not attend any of their classes during the Add/Drop will be withdrawn from the University. They must contact the Assistant Director of Readmissions to return.

Students must attend a minimum of nine classes per course in order to receive a passing grade in the course. Attending less than nine classes or 36 hours of course instruction will result in course failure unless the Dean of Academic Affairs determines that there are acceptable extenuating circumstances. Students should be prepared with written documentation of circumstances beyond their control that contributed to the absences for consideration by the Dean. If the student is allowed to remain in the class and receive a grade there will need to be a description of appropriate make up work from the respective Instructor. Please note that a student can withdraw from any class through the ninth week without receiving an "F." Course withdrawal forms must be submitted to the Registrar's Office by the close of business on Monday of week 9 in order to receive a "W" grade. Holidays and official class cancellations do not count as absences.

REQUIREMENTS

- 1. Attend all class meetings, arrive on time, and stay for the duration of the class.**
- 2. Faculty policies regarding attendance, tardiness arriving to class and returning from breaks, or leaving class early can be found in the course syllabus.**
- 3. Students who violate the attendance policy will *fail* the course.**

**Consecutive Days
Absence Policy**

A student who is withdrawn for failure to attend any classes within a consecutive ten calendar day period may be permitted to apply for readmission into the subsequent quarter.

Students who miss ten consecutive calendar days may be withdrawn from the University and will receive W's for all courses, if the withdrawal occurs before the end of the ninth week of the quarter, or WF's for all

courses, if the withdrawal occurs after the end of the ninth week of the quarter. Students who have been withdrawn due to violation of the consecutive absence policy but are still in good academic standing will be able to return the following quarter through the readmissions process. Students who have been withdrawn and the withdrawal results in a violation of the satisfactory academic progress policy (SAPP) must follow the procedure for appealing academic termination. See Satisfactory Academic Progress section.

Academic Honesty:

The University does not tolerate plagiarism, cheating, copying or academic dishonesty in any form. Academic integrity policies apply to both the giver and receiver of information. Students who witness any act of academic dishonesty should report the incident to a faculty member, their Chair, or to another member of the University staff or administration immediately.

Saving Work:

It is the student's responsibility to save his or her work. The student should save and verify multiple copies prior to leaving the classroom. The teacher is in no way responsible for work saved on the hard drives, nor is he or she required to give an extension on work improperly saved. Local and network drives at the University, including all computers in the labs, will be purged regularly and should never be used by students for long-term storage. These drives are available for student use during class and lab sessions, but all data will be deleted on a daily basis. Students are expected to backup all work. Loss, theft, and computer failure are not acceptable excuses for not saving work.

Reminders:

Students wishing to withdraw from a course must do so before week nine. Students wishing to drop a course without penalty must do so the first week of class.

Library:

The Libraries on each campus are one of the most important resources available to students while attending the University. The Library supports learning and encourages intellectual curiosity among students and faculty. The Library staff works in cooperation with faculty to help students develop into the ability to find, evaluate, and use information in order to become lifelong learners. To fulfill this mission, the Library develops and maintains a quality collection of books, periodicals, audiovisual materials, and online databases. The Library provides access to remote resources through Internet access and cooperative agreements with other libraries.

Addendum

IMPORTANT INFORMATION:

When is the First Portfolio Review?

The First Portfolio Review takes place during your third or fourth quarter. The first review will take place week 10 of the CA1400 2D Animation course. Your Portfolio will be reviewed by your CA1400 Instructor, Academic Chair, and/or additional Instructors from your program. An email will be sent to you with your results within a week of your review.



When is the Second Portfolio Review?

The Second Portfolio Review takes place during your sixth or seventh quarter. The second review will take place week 10 of the CA2200 Computer Modeling III course. Your Portfolio will be reviewed by your CA2200 Instructor, Academic Chair, and/or additional Instructors from your program. An email will be sent to you with your results within a week of your review.

When is the Third Portfolio Review?

The Third Portfolio Review takes place during your tenth or eleventh quarter. The third review will take place week 10 of the CA4221 Demo Reel Production course. Your Portfolio will be reviewed by your CA4221 Instructor, Academic Chair, and/or additional Instructors from your program. An email will be sent to you with your results within a week of your review.

When is the Final Portfolio Review?

The Final Portfolio Review takes place during your final quarter. The final review will take place week 10 of the CA4222 Demo Reel Presentation course. Your Portfolio will be reviewed by your CA4222 Instructor, Academic Chair, and/or additional Instructors from your program. An email will be sent to you with your results within a week of your review.

WEEKLY CLASS TOPICS AND ASSIGNMENTS

CLASS SCHEDULE:

Week 1:

Topics:

Pre-Test on the 12 Principles of Animation
2D Animation Pipeline
Basic Unit of Time in Animation
Animation and Properties of Matter
Movement and Caricature
Cause and Effect
Newton's Law of Motion
Straight ahead vs. Pose-to-Pose animation
Timing for Animation and Spacing of Drawings
Understanding timing charts
Keyframes / Breakdown positions / In-betweens
Using Flash / Sketchbook Pro as the 2D Animation Pipeline (create tutorial handout)

Drawing Tips:

Ways to Create Space and Depth
Capturing on Ones versus Twos

Principles Covered:

Timing
Straight ahead animation vs. Pose to Pose
Slow-in / Slow-Out (Ease-in / Ease Out)
Staging
Arcs
Squash and Stretch

In-class demos:

1. Tire Roll: Straight Ahead (Spacing and Timing)
2. Two balls falling down:

1. Cannon Ball
2. Rubber Ball
3. The Bouncing Ball
4. Understanding Arcs
5. Drawing with Form: Drawing a Head Rotation
6. Breaking any character down into Simple Shapes
7. Creating a 5-Point Turn-Around using Form

Homework:

Study for Quiz 1

Bouncing Ball Animation

Sketchbook assignment:

Pick your favorite cartoon character and draw a 5-point turn-around on an 11" x 17" sheet of paper. (animationmeat.com)

Week 2:

Critique: *Bouncing Ball Animation*

Quiz: 12 Principles of Animation: Define 6 principles

Review: Squash and Stretch, Arcs, Timing, Slow-in / Slow-Out / Straight Ahead vs. Pose-in-Pose

Hold Times / Moving Holds

How Long to Hold?

Extremes, Passing Positions and Breakdown Poses

Overlapping action and follow-through

Anticipation

Exaggeration

Using an Exposure Sheet for Pre-Planning

Principles Covered:

Anticipation

Arcs
Squash-n-Stretch
Timing
Exaggeration
Follow-Through
Overlapping Action

Drawing Tips:

Avoiding Tangents
Line of Action
Simplifying Anatomy for Animation

In-class demos:

The Pendulum (Extremes and Breakdowns)
The Wave Principle and Follow Through
The Rattling Car and Overlapping Action
Timing an Oscillating Movement

Homework:

Ball Obstacle Course with the Squirrel Ball

Sketchbook assignment:

Take 10 photos of a person in action and draw a highly exaggerated version using an 80 year old Superman.
Attach the photos to your sketchbook - showing the photo vs. the drawing.

Week 3:

Critique: *Ball Obstacle Course with Squirrel Ball*
Quiz: 12 Principles of Animation: Define 6 principles

A Formal Approach to Character Design
The Clear Silhouette
Drawing Hands and Feet for Animation
The Figure 8 approach
Line of Action
What is Appeal?
Solid Drawing and Weight
Using Exaggeration (Thinking Verbs, Not Nouns)

Drawing and Caricature
T-Shapes in Action (Head Design)
The Five Shapes and How it Informs Character Head Design
Conveying Age through silhouette and posing
Loosening Up (Fixing Stiff Drawing Syndrome)
Attitude Poses

In class demo:

Creating a Model Sheet for an existing cartoon character (Wile E. Coyote)
-Character Construction Sheet
-5 Point Turn-Around
-6 action poses

Homework:

Create a Character Model Sheet packet for instructor selected character

Sketchbook assignment:

Create a 5 point turn around of Slappy the Squirrel

Week 4:

Critique: *Character Model Sheets*
Quiz: 12 Principles of Animation: Define 6 principles

Background layout design
Staging Your Characters (Screen-Safe)
-Composition
-Geography (180 degree rule)
-The Economy of Staging

Understanding Drag and Its Impact on Overlapping Action as applied to Head Turns
Acting in Animation - getting inspired performance from your character.
Timing to Suggest Weight and Force

In class demo:

Background Layout Design

The Flapping Flag
Head Takes
The Head Turn
The Elongated Inbetween
Thumbnailing a sequence / Story beats / Keyframes
Scoring audio with an Exposure Sheet
Working with the Flour Sack

Homework:

Flour Sack Animation (animated to audio) - using exposure sheets

Sketchbook assignment:

Take an inanimate object and anthropomorphize the character. Draw 6 full "body" expression poses.

Week 5:

Critique: *Flour Sack Animation*

Quiz: 12 Principles of Animation: Define 6 principles

Timing the Bi-Ped
Twinning and how Overlapping Action solves it.
Cushions (Not Just for Pillows)
Breaking Joints - with Hands and Legs
Tackling the Emotional Walk

In class demos:

Cushions (The hand punch)
Twinning and How Overlapping Action Solves it
Breaking Joints with Hands and Legs
The Emotional Walk

Homework:

The Emotional Walk

Sketchbook assignment:



Pick 5 different characters (fat, skinny, athletic, and elderly) and draw them in at least 3 different run poses each based on their motivation: fear, anger, and excitement)

Week 6:

Critique: *The Emotional Walk*

Quiz: 12 Principles of Animation: Define 6 principles

Thinking Time and Anticipation
Squash and Stretch in facial take
Squash and Stretch in a jumping character
The Squash and Stretch Accordion
Grabbing a prop (using drag)

In class demos:

Thinking time demo
Squash and Stretch in a facial take
Squash and Stretch in a jumping character
The Squash and Stretch Accordion
Grabbing a Prop (using Drag)

Homework:

Vertical Lift Animation: With the supplied biped character, have him show thinking time and anticipate before attempting to lift an object.

Sketchbook assignment:

Draw at least 50 expressive hands in your sketchbook, studying hands drawn by Milt Kahl and Glenn Keane. Practice drawing hands from every angle.

Week 7:

Critique: *Vertical Lift Animation*

Quiz: 12 Principles of Animation: Define 6 principles

Overlapping action from pose to pose
Overlap on body actions
Overlapping action on head movements

In class demos:

Conceiving overlap from pose-to-pose
Overlapping action: coming to a screeching stop
Overlapping action on head movements
Managing Your Weight
Anticipation and Weight

Homework:

Pushing The Lateral Weight: Have the supplied character push the supplied heavy object in the horizontal direction.

Sketchbook assignment:

Draw key poses for three different types of lifts (one that is effortless, one that is medium sized, one that is impossibly heavy) using a frail old man.

Week 8:

Critique: *Lateral Weight Animation*
Quiz: 12 Principles of Animation: Define 6 principles

"Thwacks and Stars"
Dust Clouds
Vibrations

In-class demos:

Thwacks and Stars
Dust Clouds
The Multiple Smear
The Vine Swing

Homework:

The Sword in the Stone Project Thumbnails and keyframes due

Sketchbook assignment:

Draw an additional 20 expressive hand gestures, this time incorporating ten full body characters and dramatic poses.

Week 9:

Critique: *The Sword in the Stone Project* Thumbnails and keyframes

Quiz: 12 Principles of Animation: Define 6 principles

Sketchbooks Due

In-class work time *Sword in the Stone Project*

Homework:

Completed Animation *Sword in the Stone Project*

Week 10:

1st draft Critique: *Sword in the Stone Project*

Quiz: 12 Principles of Animation: Define 6 principles

Homework:

Week 11:

Final Critique: Sword in the Stone Project

Final Animation Demo Reel on DVD due.

Post-Test: 12 Principles of Animation

NOTE: Syllabus contents and schedule may be subject to change at the instructor's discretion.

Portfolio Requirements:

Students taking **Demo Reel Research** and **Demo Reel Production** will declare a specific focus in Demo Reel Research and provide a production schedule to accommodate their objectives. Projects will be due on **Week 4, Week 7** and **Week 11**. **Incomplete projects will be given the grade of ZERO**. Two incomplete projects will result in failure within the course.

Students are required to find a faculty mentor to sign off on their weekly progress.

Students are expected to show up on time. Students who are late to class on presentation days will not be allowed to present their work and take a ZERO on the project.

Hard Surface Modeling deliverables:

6 fully textured models (assets, buildings, mechanical objects) with process work from concept to final.

- 3 models will be complete in Demo Reel Research
- 3 will be completed in Demo Reel Production

Environment Modeling deliverables:

6 environments (interior / exterior) with process work (including references). The environments will be rendered as a fly-through along with individual stills.

- 3 environments will be completed in Demo Reel Research
- 3 environments will be completed in Demo Reel Production

Organic Modeling:

3 character models (fully lit and textured) in Demo Reel Research.
3 character models (fully lit and textured) in Demo Reel Production.

Models will be placed on an environmental dais or platform that compliments / matches the character's world.

GAD Character Animation:

9 unit animations using a pre-existing, properly rigged character. Each unit animation will include 3 cycles - an attack cycle, a death cycle and an idle cycle that matches the personality and attitude of the character (*optional*) one lip-synch.

- 5 unit animations will be completed for Demo Reel Research
- 4 unit animations will be completed for Demo Reel Production

MAA Character Animation:

6 Character Animation pieces with a focus on ACTING and personality, incorporating the 12 principles of animation will be required for Character Animators. The animations can be all 2D or all 3D or a mix of both, depending upon the focus of the student.

- 3 11 second animations will be completed for Demo Reel Research
- 3 11 second animations will be completed for Demo Reel Production

Character Designer:

9 character designs, with each character design including the following:

- a 5 point turn-around
- an expression sheet containing 6 expressions and 6 action poses (*Each pose / expression will be neatly labeled.*)
- All characters will have a color chart and will be fully inked (analog or digital).
- Each character will include a bio page.

Each sheet will measure 11" x 17" and will be **professionally mounted** on black matte, printed on heavy stock paper at 300dpi CMYK. The matte board will be labeled as to its contents. The dimensions of the matte will include a 3/4" border on the left, top and right side with a 1" border on the bottom.

- 5 full character designs will be completed in Demo Reel Research
- 4 full character designs will be completed in Demo Reel Production



Storyboard Artist:

A total of 6 Production boards will be required. Boards will showcase a variety of subject matter with specific focuses in the following areas:

atmosphere
dialogue
action
establishing shots

Boards will be fully inked and shaded and include captions. Each frame will measure 4" x 6" in size and occupy an approximately 11" x 17" space. Storyboards will be professionally mounted on black matte, printed at 300dpi CMYK. The matte board will be labeled as to its contents. The dimensions of the matte will include a 3/4" border on the left, top and right side with a 1" border on the bottom.

- 3 production storyboards will be completed in Demo Reel Research
- 3 production storyboards will be completed in Demo Reel Production (each board must have a *minimum* of 15 panels per board)

Technical Animator:

6 full rigs will be required for the technical animator. Rigs will be shown in a video format and show off the full extent of the rig in terms of its expressiveness and articulation.

- 3 rig demos will be completed in Demo Reel Research
- 3 rig demos will be completed in Demo Reel Production

PLEASE NOTE: contents of syllabus are subject to change at the instructor's discretion.

STUDENT / INSTRUCTOR CONTRACT

(DUE AT THE BEGINNING OF CLASS ON WEEK 2)

I, _____, affirm that I have received the syllabus for _____ for Winter Quarter 2012. Furthermore, I have read the content of this document and understand that I will be held accountable for the assignments and other required work for this class.

I confirm that I have received the following documents:

- CA1101 syllabus
- Class attendance policy
- Grading criteria
- Statement of Project dues dates and/or deadlines.
- Purchase requirements
- Overview of assignments and class schedule
- The website for the course assignments (<http://www.sivamstudios.com/ait>) and the instructor's contact information (krishna.at.ait@gmail.com)

Signature

Date