The Art Institutes International Minnesota℠

Spring Quarter 2010 Syllabus

Course # Course Name:	**CA2439 Introduction to 3-D Animation**
Meeting Times and Location:	Mondays and Wednesdays, 11:00AM – 2:00PM, with appropriate breaks, Room 231
Instructor Name & Contact Information:	Steve Paul 612.965.1816 sdpaul@aii.edu My mailbox is in room 341, in the cubby under my last name.
Office Hours:	Mondays 2:00PM – 3PM, Room 303, and by appt.
Course Description:	Building on the skills acquired in 3D modeling, students learn to animate and apply the principles of animation in a computer environment. Students are also introduced to concept of rigging and setting up their model for animation. Prerequisite CA2429.
Course Length:	11 Weeks
Instructional Contact Hours:	60 (20-lecture, 40-lab)
Credit Value:	4 Credits

Course Competencies:

The student will:

Create and/or transform objects in a 3D environment

- ***Identify the fundamental animation features and function devices in the 3D animation software package used***
- ***Transform a 3D model using motion and time***

Apply traditional animation techniques to 3D animation

- ***Integrate the 12 Principles of Animation***
- ***Set up hierarchical relationships***
- ***Develop an animation that utilizes cycles***

Apply industry-standard storyboard and scripting techniques to animation

- ***Create a storyboard for a brief animation project***
- ***Produce animation based on the storyboard for the project***

Identify camera techniques in computer animation

- ***Apply basic camera and light techniques to 3D animation***

Analyze real world observation and apply to animation

- ***Utilize industry-standard blocking techniques in the pre-planning process***

Required Materials:

Recommended:
***Webster, Chris Animation: The Mechanics of Motion Focal Press, 2005, ISBN* 978-0240516660**

	Williams, Richard The Animators Survival Kit New York: Faber & Faber 2002 ISBN 0-571-20228-4
	***Johnston, Ollie and Thomas, Frank, The Illusion of Life: Disney Animation, Disney Editions, 1995, ISBN* 978-0786860708**
	***Whitaker, Harold and Halas, John, Timing for Animation, Focal Press, 1981----2006,* ISBN-13: 978-0240517148**
Technology Needed:	***Portable hard drive or similar backup device, access to a video camera, 3DS Max 2009, Photoshop CS3, properly equipped PC.***
Instructional Methods & Resources:	This course will challenge you to develop professionally-relevant knowledge and skills. Course information will be presented in many forms, including lecture, class discussion, demonstration, case studies, simulations, field projects, and studio or lab projects. Students will use library and community resources, including research and reference materials, gallery exhibitions, industry events, and guest speakers. Materials can be obtained from other libraries using the interlibrary loan program.
Estimated Homework Hours:	At least 4 hours per week. There is no way to anticipate how many hours it takes to come up with a great idea, so get your work done early. Procrastination will not help you!

STUDENT EVALUATION AND GRADING

Successful professionals require a supportive environment. In-class discussions and/or critiques of other students' work and ideas is a chance to help each other grow as conceptual and critical thinkers.

Student Evaluation:	***Course Activities***	***Points Available***
	Bouncing Balls	70 pts
	Crane, Claw and Balls	80 pts
	In-class exercises	150 pts
	Character Walk	250 pts
	SNAFU scene	300 pts
	Class participation	200 pts
		Total: 1000 pts

Points Distribution	**GRADING SCALE**	
Bouncing Balls 7%	**A**	**100 – 93%**
Crane, Claw and Balls 8%	**A-**	**92 – 90%**
In-class exercises 15%	**B+**	**89 – 87%**
Character Walk 25%	**B**	**86 – 83%**
SNAFU scene 30%	**B-**	**82 – 80%**
Class participation 20%	**C+**	**79 – 77%**
	C	**76 – 73%**
	C-	**72 – 70%**
	D+	**69 – 67%**
	D	**66 – 60%**
	F	**Below 60%**

MILESTONE: This is a milestone course for Animation students. This means students must earn a final grade of C or better to pass.

The academic programs at Art Institutes International-Minnesota are designed to prepare you for your future career. Your future will be wrought with deadlines and time clocks, so this class will require real world punctuality. If you are absent or late for class, you will not be able to make up points associated with in-class activities, including quizzes, tests, presentations, and critiques. Tardy students are responsible for making their presence known to the instructor at an appropriate time. (See the Attendance Policy below for more information.)

Homework and other preparatory work must be done before class meets and is due immediately at the beginning of class, unless the instructor publishes other requirements.

A WORD ON DEADLINES - Late work is not acceptable. In the business world, deadlines are rarely pushed back. Work submitted after deadline will earn 0 points. Your instructor may make an exception in cases of severe personal illness or death in the family. Technology, transportation, relationship, and childcare problems are not the basis for an exception.

Because group effort may be required, attendance is mandatory. Unexcused absences will result in a lower grade. Excused absences may be permitted, but students are expected to let the instructor know in advance. If you miss a particular class, it is also your responsibility to contact a peer (or peers) to get notes and any assigned work.

You may be evaluated individually and as a member of a team on a variety of learning experiences. Different testing methods afford you diverse opportunities to demonstrate your skills and knowledge, including field assignments, tests, presentations, papers, projects, quizzes and more. Final grades will be determined by scores on your individual assignments, assessments, and classroom participation. Your final grade may also be influenced by group-based activities.

If you disagree with a grade in this course, you may take these steps:

Step 1. Make an appointment with me to discuss your situation. Bring your graded work, the assignment sheet and this syllabus to the meeting. If you feel the issue is not fully addressed, proceed to

Step 2. Submit a written appeal to me, explaining why you believe your grade is wrong. You should justify your opinion with information from the assignment sheet and/or syllabus. If you feel the issue is not fully addressed, proceed to

Step 3. Make an appointment to discuss your concerns with your Academic Director. If you feel the issue is not fully addressed, proceed to

Step 4. Submit a written account to the Dean of Academic Affairs. The written account should indicate your name, phone number, and ID#, and discuss the steps you have taken to remedy the situation. The Dean may convene an appeals committee. Be prepared to produce your graded work, the assignment sheet and this syllabus.

ACADEMIC POLICIES

Discrimination Policy

It is AI Minnesota policy not to discriminate against qualified students with documented disabilities in its educational programs, activities, or services. If you have a disability-related need for adjustments or other accommodations in this class, please contact Becky Lothe, 612-656-6866, rlothe@aii.edu, or visit Becky in Pence room 209. Any accommodations will be authorized by Becky—no exceptions.

Attendance

Regular, on-time attendance is both courteous and professional. The Art Institutes International Minnesota expects students to demonstrate professionalism by attending all classes as scheduled, arriving on time, and remaining for the full duration of the class. Outside employment should not be scheduled during class hours.

Students should be aware that even if there is no “attendance” grade per se for a class, it is difficult to succeed in class without regular, on-time attendance. Individual faculty may determine the impact, if any, of absences on grades. The Art Institutes International Minnesota supports the attendance policy for each class as it is described in the syllabus. The full AiM attendance policy is found in the Student Handbook.

Academic Dishonesty

At the Art Institutes International Minnesota, plagiarism is a cumulative offense; each act of plagiarism is documented in the student’s academic record until degree completion. Violations of this policy will be handled in accordance with the disciplinary procedures outlines in the Student Code of Conduct Policy.

Examples of plagiarism include paraphrasing an original document or piece(s) of an original document and not citing the original author's name and publishing year, using direct quotes from an original document and not citing the original author's name and year, and using written documents, still or moving images, original ideas, research information, audio samples and music clips, and failing to cite the original author's name and publishing year.

Cheating is the action to deceive or alter the perception regarding the author or originator of student work and is a violation of the Student Code of Conduct. Cheating includes the duplication of written or electronic assignments, exams or documents either in whole or in part and submitted as an original piece of work; the exchange of answers with others either giving answers or receiving answers during an in-class assignment, test or exam, or take-home assignment or exam.

Typical disciplinary sanctions for a first offense of plagiarism or cheating includes automatic failure of the assignment/exam with no opportunity to re-do or make up the plagiarized/cheating work. Sanctions for the second offense include automatic failure of the course. Subsequent incidents will result is dismissal from the school. [From the 2008/09 AiM Student Handbook section on Academic Integrity, beginning on page 35.]

CLASSROOM COURTESIES AND PROFESSIONAL EXPECTATIONS

Collaboration and Communication

The learning environment should provide a business-like approach to getting the job done, so any behavior that would be deemed as inappropriate for the typical work environment will put the student at risk. Examples include disrespectful language, passive-aggressive behavior, lack of commitment to personal or team success, and any other behaviors that disrupt the learning environment for other students. Additionally each team member is responsible for the academic integrity of the group.

YOU MUST USE YOUR SCHOOL EMAIL ACCOUNT, or forward your school email to another personal account**.** You must be able to accept and respond to email on a daily basis.

Academic Resources

YOU ARE ACCOUNTABLE FOR REQUIRED ACADEMIC SKILLS. Successful students possess course-appropriate reading comprehension, critical thinking, research, writing, presentation, and communication skills. If you or your instructor determine that you have a need for additional resources beyond those offered in class, there are several options available to you.

- **The Academic Achievement Center** is located in room 320 (across from the Academic Advising office). The Academic Achievement Center houses peer tutors in program areas and general education.

- **The Interior Design Skills Center** houses Interior Design peer tutors and general education. The Skills Center is located in room 011, in the basement of the LaSalle building.

Peer tutors assist students with subject/content area academic support, as well as, study skills and organizational tips. Peer tutors are current AIM students in good academic standing-(a CGPA of 3.5) with a desire to assist others in their academic progress. All peer tutors receive mandatory tutor training.

Students (tutees) who seek academic support may visit each of the centers to receive tutoring assistance in a wide variety of subject areas. Each tutor schedule (located outside of the center door) identifies the tutor and their specific areas of expertise. Some Peer tutors also serve as Teaching Assistants, where their role is to work alongside an instructor during lab/group hours of a class.

- **Academic Advising** is located in room 316 in the LaSalle building. Academic Advisors are available to assist you in identifying areas or patterns of academic weaknesses, and to put into place any support resources a student may need.

You are also responsible for executing tutorial recommendations made by your instructors. Remember, your instructors and Academic staff are here to help you find the resources you need.

- **The Library** is located on the second floor in the LaSalle building. The library is open 79 hours per week and is currently processing an average of 5,000 circulation transactions per month. The collection is comprised of books, newspapers, journals and magazines, videos, DVDs, and CDs that support the curricula. The collection currently numbers over 23,000 volumes with and an additional 189 periodical subscriptions. Materials also include royalty-free music/sound effect CDs, art history and interior design slides, and copies of computer software manuals utilized within the College. Textbooks and reserve materials are available for in-house use, and many academic and industry databases are available, including WilsonWeb, Proquest, AccuNet / AP, Gettyimages, Electronic Library for Minnesota, Grove Art Online, Hoover's Online and Oxford Reference Online.

Student Life

The Student Affairs Office is located in room 209 in the Pence building. There you can find information, services and program that can help you to extend and integrate academic content and life experiences.

Community Resources

This course will engage community resources, including local libraries, galleries, exhibitions, guest speakers and industry tours. Your active participation is important and expected.

Addendums to the syllabus – All policies listed below are effective as of the date of this addendum, May 10, 2010

Classroom Environment

- **Disruptions to the learning environment will not be tolerated.**
- **When the instructor is talking, students are paying attention (this includes not working on projects, listening to music or surfing the web while the instructor is addressing the class).**
- **Cell phones will be turned off or silent. If an emergency call must be taken, the student must do so outside the classroom.**
- **Social networking such as Facebook, IM, or Twitter is not allowed during class activities. During work time students are expected to be working on the assignment for this class. Any student working on other class work or engaging in extensive discussion (more than 5 minutes) of activities will be asked to leave.**

Students not following any part of this policy may be removed from the class. Repeated disruptions may result in the student being removed from the class for the remainder of the quarter.

Class is divided into three 50 minute sections. There are two 10 minute breaks. In a class that meets from 11am – 2pm these breaks occur at 11:50 and 12:50. Class resumes at 12:00 and 1:00. Class is finished at 1:50. If you leave early, (except for short bathroom breaks), or return late, then you will be counted as absent for the time you miss, (see below). If attendance becomes a persistent issue, you will be asked to leave the class for the remainder of the quarter.

Additional Class Attendance Policies:

If you have missed 12 hours of class total, you will fail the class.
Percentage points will be deducted from your final grade for class time missed:

- **3 hours missed = 0% deduction**
- **6 hours missed = 10% deduction**
- **9 hours missed = 25% deduction**
- **12 hours missed = 40% deduction**

This includes time counted off for lateness. You must be present at the beginning of class.
Any time missed after the beginning of class will be counted in 15 minute increments. (for example -- 8:05 = 15 minutes late).The first hour of class is especially crucial in a project-based classroom. It is our opportunity to share technical skills, develop ideas, get feedback, share news and tips, and work together as a class. Though we may be more independent in the latter hours of a class, *I expect EVERYONE to attend the first hour from the beginning.*

Recommended Actions for Success

1. Make a class buddy on the first day who can provide notes if you are absent on a particular day.

2. Be detail-oriented. Sloppiness and mistakes will sink you quickly.

3. Have a positive attitude. How your instructor and your peers perceive you has an impact on your chances at success. A bad reputation will get around.

4. You have to talk like a computer animator if you're going to be one, so learn the language. You won't even make it through the job interview if you can't speak intelligently about your work and process. Know the proper singular form of the word vertices and know the difference between NURBS and NURMS.

5. Arguably the most important skill in 3D work is troubleshooting. In order to survive in this industry, you have to detect when something is not working right, determine the cause, and find a solution. The instructor is here to help, but you need to be self-directed in troubleshooting. Run through the following when you encounter a problem:

    a. How can I describe the problem using industry-standard language?

    b. What was I doing when I first noticed the problem? Does undoing that thing also undo the problem?

    c. What do I think are the most likely causes for this problem? This is one of the tougher questions to answer. Check your course notes. Google a short phrase that describes the problem (this is one of the reasons the first bullet point above is important). Navigate the help docs. Ask classmates if they have ideas.

    d. Once you find the answer, add it to your notes so you can refer back to it later. The next time you get stuck on the same problem, you'll know how to get around it quickly.

6. Find some way to improve with every project. Even if the overall idea of a particular project doesn't jazz you, there should be some way you can grow in some way useful to your career goal. Identify it and run with it. Keep in mind, on the job, you will usually be doing work handed to you by others and you won't always enjoy the work.

7. Learn how to break your tasks down into pieces, create a schedule (try making a Gantt chart in Microsoft Visio), manage your time, and meet deadlines. It will lead to greater success and less stress.

8. Check your school e-mail daily (or forward it to an account that you do check daily). If I need to give or get important information outside of class, I will e-mail you at your school account.

9. Assemble your work into a demo reel, online portfolio, and print portfolio NOW! There are lots of good reasons for this. First, it takes practice to get good at putting reels and portfolios together, so it's stupid to wait until late in the game. Second, you never know when a job opportunity will come along, and you need to be ready at a moment's notice to compete against other artists for the spot. The reel and portfolios are living documents, constantly being updated as you produce new and better work – next quarter, the old and mediocre stuff goes out, and the new and awesome stuff goes in. Rinse and repeat.

10. Start networking NOW! Many jobs in this industry are filled by word-of-mouth. Here are some ways to get recommended, besides just having talent, working hard, and having a good attitude:

    a. Join industry-related groups, such as the Minnesota Maya User Group, the After Effects User Group, and Independent Game Developers Association, and attend their meetings.

    b. Attend industry-related events such as the Minnesota Electronic Theater

    c. Post your work on industry forums so people can see it and give you feedback (some people have gotten job offers just from others viewing their posted work)

    d. Attend software training sessions (some are free)

    e. Call local companies for informational interviews and to get feedback on your work

    f. Start introducing yourself to people who love 3D modeling, or animation, or visual effects, just like you do (use social networking sites on the Internet as well as face-to-face social occasions)

By the way, don't expect Career Services to do your job search for you – they are there to assist, but you still carry the primary responsibility for finding work. Networking is key, and you can't wait until you graduate to start – do it now!

Weekly Course Schedule
This schedule is subject to change!

The instructor reserves the right to make changes to the syllabus and weekly breakdown. Students will be notified of any changes as soon as possible.

Week	Day 01	Day 02
01	Hour 1: Demonstration/Review of Animating in 3DS Max, use of modifiers, and Curve Editor. Bouncing Balls assignment given. Hours 2 & 3: work on creating a simple bouncing ball animation in 3DS Max.	Hour 1: Demonstration/discussion on incorporating squash & stretch, arcs, and timing in 3D. Rendering animation in 3DS Max. Hours 2 & 3: work on Bouncing Ball project.
02	Hour 1: Demonstration of the use of modifiers, constraints, trajectories, ghosting and key frame interpolation within 3DS Max. Using arcs, timing, ease in & out to achieve believable physics. Hours 2 & 3: work on finishing Bouncing Ball assignment.	Hour 1: Bouncing Ball assignment due, presentation of projects, group critique and discussion of problems and solutions. Hour 2: Introduction of the Crane and Balls project. Hour 3: Work on Crane project.
03	Hour 1: group discussion of meaning and incorporation of the principles of overlap and follow-through in 3D. Demonstration of Link Constraint, Hierarchy panel tools, basic Forward Kinematic rigging. Hours 2 & 3: work on Crane project.	Hour 1: Discussion of problems and solutions in linking and Forward Kinematics. Demonstration of various methods of animating a water balloon; using Stretch, FFD, Link Xform, and Skin modifiers Hours 2 & 3: work on Crane project.
04	Hour 1: Discussion on incorporating secondary action principles in 3D. Demonstration on the use of Space Warps in deforming mesh. Demonstration on creating manipulators and wiring parameters. Hours 2 & 3: Finish work on Crane project.	Hour 1: Crane project due. Small group peer critique, presentation of exemplary work to the larger group for feedback. Hour 2: Introduction of the IK Character Walk project. Demonstration of basic Inverse Kinematic leg rig. Hour 3: Work on creating a simple IK leg rig and develop a basic six step walk.

Week	Day 01	Day 02
05	Hour 1: Review of rigging bipedal legs with Inverse Kinematics. Demonstration of the deeper levels of working with Bones systems and IK. Using Helper objects and Controllers to add functionality to a rig. Three Walks in-class assignment given. Hours 2 & 3: Work on animating neutral, male and female walks using only the lower body.	Hour 1: Discussion of Acting & Character Intention in animation. Examination and analysis of "real world" footage of people walking. Discussion of the "20 Questions" of character through walk analysis. Hours 2 & 3: Introduction of the "Walking with Character, Upper Body" in-class assignment. Continued work on Three Walks.
06	Hour 1: Three Walks project due, small group peer critique, presentation of exemplary projects to the whole class for feedback and critique. Hour 2: Demonstration of rigging a simple Forward Kinematics system for the upper body. Hour 3: Work on incorporating, developing and refining the upper body into character walks.	Hour 1: Walking with Character, upper body project due. Small group peer critique, presentation of exemplars for whole class feedback. Hour 2: Demonstration of alternate methods of upper body rigging. Hour 3: Work on IK Character Walk project.
07	Hour 1: Discussion and demonstration of incorporating walking, weight transfer & Camera movement. Hours 2 & 3: Work on IK Character Walk project.	Hour 1: IK Character Walk project due, peer critique, exemplar presentation for entire class feedback. Hour 2: "SNAFU" project explained and given. Hour 3: Work on storyboards for "SNAFU"
08	Hour 1: Demonstration of rigging for mesh deformation bone influence. Hours 2 & 3: Begin staging of "SNAFU", finalize Character Walk revisions.	Hour 1: IK Character Walk project revision due. Small group peer critique. Presentation of "most improved" project from each group. Hour 2: Review and clarification of mesh deformation using Skin. Hour 3: Work on SNAFU.
09	Hour 1: Demonstration of wiring specialty rigs, bone influence weight distribution. Skinning in-class assignment given. Hours 2 & 3: Work on Skinning assignment and SNAFU.	Hour 1: Skinning assignment due, discussion and sharing of problems and solution insights. Hours 2 & 3: Work on SNAFU.

Week	Day 01	Day 02
10	Hour 1: Discussion of analyzing movement, acting and shot composition. Hours 2 & 3: Working on SNAFU.`	Hour 1: SNAFU rough draft due, small peer group critique. Large group presentation for feedback. Hours 2 & 3: Work on SNAFU.
11	Hours: 1-3: Individualized conferences	Hours 1 – 3: SNAFU project due, presentation, feedback and review.