3D Foundations Class Syllabus

Course Name: 3D Foundations

Instructor Information

Course Director: Marcus Scarsella
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Prerequisites

All classes in the CA program up to this point and the dedication to put forth as much effort as needed to succeed in the CA program and beyond.

Course Description

3D Foundations is designed to prepare students for the 3D production pipeline using Maya, Photoshop, and Shake. The course will adhere to a specific production timeline focused on a Final Animation Short. The course will examine multiple aspects of 3D, and support the student in pursuing specific areas of expertise that they find most rewarding.

Course Outcomes

Students will leave this course with a strong foundation in, and understanding of, computer animation and the Production Pipeline. They will have gone through each phase of the production pipeline by completing a 6 second animated short while working in a group environment. This will help students to learn how to competently work in Maya as well as develop the networking and social skills necessary to become a strong, reliable member of the Computer Animation Industry.

Course Materials

Books

"Digital Character Design and Painting" The Photoshop CS Edition

Other Materials

Maxell CDR Spindle – 25ct.

Course Outline

- Lecture 1 “Intro”
    - Class Introduction (All About 3DF)
        - Class Policies
        - What to expect from 3DF
        - What 3DF expects from you
    - The Industry
        - Production Pipeline
        - Main areas of focus in Computer Animation
        - Networking
        - Knowing what’s out there
    - Class Studios
        - Create Studio groups
        - Assign Studio leaders
        - Breakdown of Studio project
    - Maya Introduction
        - What is Maya
        - Projects and File directories
        - Maya navigation
- Lab 1
    - Lab Introduction
    - Work out story for Studio project
    - Maya Practical Exercise
- Lecture 2 “Preproduction/Modeling 1”
    - Preproduction
        - How important is it?
        - Reference images
        - Storyboards
        - Scripts
    - Polygon Basics
        - What is a Polygon?
        - Manipulating polygon components (changing shape)
        - Polygon tools
    - Prop Modeling
        - Finding Reference
        - Using Image Plans
        - The Modeling Process
    - Environment Modeling
        - Getting Started
        - Modeling for the shot
        - The Modeling Process

- Lab 2
    - Start modeling assets for Studio project
    - Work on Individual projects

- Lecture 3 “Modeling 2/Rigging 1”
    - Character modeling
        - Character Sheets/Reference
        - Default pose
        - Areas of deformation
        - The Modeling Process
    - Maya Hierarchies
        - Outliner & Hypergraph
        - Grouping & Parenting
    - Joint Basics “Rigging”
        - What is a joint?
        - Drawing joint chains
        - FK vs. IK

- Lab 3
    - Finish up prop models
    - Begin modeling your characters
    - Work on Individual projects

- Lecture 4 “Rigging 2”
    - Rigging your character
        - Laying out joints
        - Creating rig controls
        - Organizing hierarchy
        - Testing your rig
    - Making geometry move with a rig
        - Creating a Puppet style character
        - Binding

- Lab 4
    - Finish character model
    - Start laying out joints for rig
    - Work on Individual projects

- Lecture 5 “Animation 1”
    - Animation Basics
        - 12 Principals of Animation

        - Keyframes
        - Graph Editor
            - Curves & Tangents
    - Animatic
        - Scale & Timing
        - Keep it simple
        - Adjusting timing
            - Timeline
            - Graph Editor
        - Camera animation

- Lab 5

    - Finish rigging characters
    - Start on Animatic for Studio project
    - Work on Individual projects

- Lecture 6 “Animation 2/Texturing 1”

    - Character Animation
        - Act it out
        - Animation Styles
            - Pose to Pose
            - Straight Forward
        - Using the Graph Editor for adjustments
        - Playblast
    - Animation Tricks
        - Visibility Swap
    - UV Basics
        - What are UV’s?
        - UV Texture Editor
        - Laying out & Manipulating UV’s
        - Saving a UV layout

- Lab 6

    - Finish Animatics
    - Start on Character animations
    - Work on Individual projects

- Lecture 7 “Texturing 2/Rendering 1”

    - Photoshop
        - Photoshop navigation
        - Basic Tools
        - Working with Layers
        - Setting up for Texturing
    - Applying Textures in Maya

        - Materials
        - Hypershade
        - Applying Textured Materials to geometry
        - UV Tweaking
    - Rendering Basics
        - What is Rendering?
        - Render View & Render Settings
        - Fcheck

- Lab 7

    - Finish Character animation
    - Start UV Layout for character head
    - Work on Individual projects

- Lecture 8 “Rendering 2/Scene Finishing”

    - Bringing assets together
        - Importing & Exporting files
        - Layers
        - Scene optimizing
    - Lighting
        - Light types & Uses
        - Manipulating Lights
        - Basic 3 point light setup
    - Rendering
        - What is Rendering?
        - Mental Ray vs. Software
    - Rendering Studio Project
        - Render settings
        - Batch render
        - Fcheck
        - Trouble shooting renders

- Lab 8

    - Finish head texture
    - Start Assembling final scenes
    - Work on Individual projects

- Lecture 9 “Finalizing Studio Projects”

    - Final Cut Pro
        - What is Compositing?
        - Final Cut Pro navigation
        - Turning renders into a movie
            - Project settings
            - Sourcing Files

        - Rendering
    - Compositing Basics
        - Rendering elements out of Maya
        - Basic layering operations
- Final prep for turn in
    - Folder structure
    - Submitting your work
    - Deadline
    - Read Me files

- Lab 9

    - Set Render settings
    - Begin Batch render
    - Work on Individual projects

- Lecture 10 “Other Realms of Maya”

    - Studio project/Work Submission Questions
    - Dynamics
    - Paint Effects
    - Cloth
    - Fluids

- Lab 10

    - Finish Batch render
    - Create final movie in shake
    - Finish up Individual projects
    - Create folder structure for submission
    - Submit your work

Assignment Weighting
This course has 4 main areas in which a student may earn their final grade. The areas, and values, are as follows:

1. Studio Project - 50%
2. Individual Projects - 30%
3. Test & Quizzes – 10%
4. Professionalism – 10%

The highest possible grade that can be earned in the course is a 100%.

Assignment	Points Possible
Studio Project	50 pts
Individual Projects	30 pts
Test & Quizzes	10 pts
Professionalism	10 pts
	Total 100 pts

Grading Scale

Letter Grade	Description	Qualitative Definition
A+	Superior	100-95
A	Excellent	90-94
B+	Great	85-89
B	Good	80-84
C	Average	79-73
D	Not Satisfactory	72-70
F	Failing	0-69

Assignment Expectations

Projects will be graded on predefined areas of focus, use of techniques demonstrated in class, and artistic consistency. All projects are to be turned in at the end of the month by a Deadline (time & date) specified by the Course Director or Associate Course Director. Projects will not be accepted after the specified turn in Deadline. Late projects will receive a grade of zero unless prior arrangements with the Course Director or Associate Course Director have been made. Any project that is not turned into the designated area/folder will not be accepted, and receive a grade of zero, again, unless previous arrangements have been made.

Course Policies

Attendance - This course consists of 80 lecture and lab hours. Missing over 10% (8 hours) will result in attendance failure.

Class and Lab - Students are required to wear, and have visible, their badges at all times. No food or drinks are permitted in class or lab. Maintain professionalism at all times. Derogatory language or actions directed toward or concerning a person's race, religion, sex, sexual orientation, or ethnic background of any kind will not be tolerated.

Work - Plagiarism of any kind will not be tolerated and will receive one of the following; a failing grade, a suspension, or academic termination from Full Sail Real World Education.

"Thinking Ahead"
Finals Department Acceptance Procedures

The Computer Animation Finals Department consists of Animation Pre-Production (ANP), Computer Animation Production (CAP), and Demo Reel Creation (DRC). In an effort to ensure the best possible results in the Finals Department, the following expectations have been defined.

A student is going to achieve a higher level of success if their final production work is in an area of discipline in which their artistic strengths / skills are the strongest. The first leg of the Finals Department (and the prerequisite to the other courses) is ANP. This course establishes the groundwork that will be used throughout the other two courses. In it imperative that students have a goal for ANP, and a plan to achieve that goal. To that end, the Finals Department staff has determined that a student must declare the area of discipline they intend to use on or before their first day in ANP. In order to be approved to work in a particular discipline, the student must have achieved a grade of 90% or better in their previous class that exemplified this discipline (Animation Production, Production Modeling, Art Creation for Games, Visual Effects, and Character Rigging). If so, they receive a green light and begin working on their project.

Students will not be allowed to take ANP until they have been approved to work in their selected discipline.

If a student chooses an area of discipline in which they have NOT achieved a grade of 90% or better (or if the student has not achieved a 90% or better grade in any area of discipline) there is an established process to attain approval. This process and approval must take place **PRIOR** to the first day of ANP:

1. Send a letter to two Course Directors in the department of artistic discipline, indicating interest and requesting an art review.
2. At the art review, samples of work must be submitted:
    a. Accepted artwork will be given the green light to officially proceed into the Finals Department.
    b. If artwork is not given the green light, or no work is available for review, students must successfully complete an art test.
3. The art test
    a. The department of discipline will assign the art test.
    b. ***The art test must be completed successfully (passed) prior to starting ANP (and must be completed at least one week prior).***
    c. Art tests that are not acceptable, may be repeated in an effort to receive approval.
    d. If student fails the art test multiple times, they may be required to use an “audit” option. The student will audit a course in their desired area of discipline. Grades in the audit will not count on the student’s official transcript, however, the Course Director will maintain a record of the grades.
        i. At the end of the month their progress is relayed from the Course Director of the specified class to ANP.
        ii. If the student’s work is satisfactory they will receive the green light to move forward.
        iii. If their work is unsatisfactory, they will repeat this process until they can consistently produce an acceptable caliber of work. (This is to allow the students to improve their artistic talent in the desired area.)

Once the student has been cleared to enter the Finals Department, either by receiving a 90% or better in the discipline class, or department approval, or passing the art test, that student would start ANP and be able to fully concentrate on the ANP work load. Through this process the Full Sail Animation Department will create a better prepared student for CAP, DRC, and ultimately the real world.

These changes will appear in each Course Director's manual/syllabus, and on power point presentation, which the Course Director will review at the beginning of each course.