

## MIAMI INTERNATIONAL UNIVERSITY OF ART & DESIGN

### 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:** CA3201  
**Course Title:** Texture II: Shading Networks  
**Class Meetings:** Tuesdays 1:00 - 5:00 PM  
**Session / Year:** Winter 2012  
**Instructor Name:** Juan Borrero, MFA Computer Animation  
**Email Address:** jborrero@aia.edu  
**Telephone:** N/A  
**Office Hours:** N/A

#### Course Title

**Course Description:** This advanced course focuses on the creation of computer generated textures and shaders for 3D models. Students will investigate advanced techniques in simulating complex characteristics of light on surface using advanced texture shading networks. Students will create experimental and application specific shaders (example: skin shader)

**Course Length:** 11 weeks

**Contact Hours:** 4 hours

**Credit Values:** 3 credits

#### **Learning Objectives:**

Upon successful completion of the course, the student will:

1. Learn advanced shading networks
2. Customize Lighting Setups for cameras and materials
3. Apply Rendering Techniques using Shading Networks
4. Control Cameras and Depth of field
5. Create advanced procedural texturing
6. Work With Render Global Functions
7. Manage Render Passes and Layers
8. Experience optimizing techniques for render time

**Course Prerequisite(s):** Chair Approval Required

**Text(s):** N/A

**Materials and Supplies:** Notebook, Writing Materials

**Estimated Homework:** 10 hours per week

**Technology Needed:** Autodesk Maya, Adobe Photoshop, Nuke

**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:** The following assignments, projects, and exams fulfill the learning objectives for this course:

Assignment	Possible Points
Participation	25
Assignments	20
Midterm	25
Final Project	30
Total Points	100

Actual points awarded for quality will be determined by:

1. Aesthetics, i.e., artistic quality
2. Originality and creativity
3. Attention to project parameters
4. Professional images of materials

**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 student's 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 their success at the University. The University is committed to providing qualified students with a disability an equal opportunity to access the benefits, rights and privileges of University services, programs and activities in compliance with The Americans with Disabilities Act and Section 504 of the Rehabilitation Act

of 1973. Students who believe they are in need of accommodations should contact the Student Affairs Department regarding the documentation necessary relating to your accommodations. 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 Friday 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.

**Syllabus Changes:**

Changes to the Syllabus are at the discretion of the instructor, and it is the student's responsibility to stay informed of these changes.

**Resources:**

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 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.

Wellness Program

The University provides confidential counseling free of charge to students in accordance with Florida Statute 491.0147 of the Board of Clinical Social Work, Marriage and Family, Therapy and Mental Health Counseling.

## WEEKLY CLASS TOPICS AND ASSIGNMENTS

### WEEK 1 1/10/2012

<b>Overview:</b>	Knowledge Base Review
<b>Weekly Objective:</b>	Proejcts assignment and class structure
<b>Lecture:</b>	<b>Overview of Hypershade and UV editor. UV placement methods</b>
<b>Lab:</b>	Overview Photoshop: Channel Masking, Layer Sets, Resolution
<b>Reading Assignment and/or Homework:</b>	Prepare Project Scene, Folders and Textures

### WEEK 2 1/17/2012

<b>Overview:</b>	Shaders and Render Engines
<b>Weekly Objective:</b>	Learn shading networks and texture management
<b>Lecture:</b>	Connecting Utilities in high end shading networks and Dirt mapping
<b>Lab:</b>	Texturing Workshop: Materials and Surfaces. 3D Paint Tool
<b>Reading Assignment and/or Homework:</b>	Enhance your scene basic textures and prepare asset texture networks

### WEEK 3 1/24/2012

<b>Overview:</b>	Mental Ray Lighting
<b>Weekly Objective:</b>	Apply light systems and project settings
<b>Lecture:</b>	Mental Ray Engine and Lighting Techniques
<b>Lab:</b>	Lighting Overview: 3-point lighting, HDRI, Final Gathering and Global Illumination
<b>Reading Assignment and/or Homework:</b>	Prepare project lighting and test renders

### WEEK 4 1/31/2012

<b>Overview:</b>	Environment Lighting
<b>Weekly Objective:</b>	Apply environment techniques to enhance render quality
<b>Lecture:</b>	Ray Diffused Lights, Real Life Environmental Fog and Volumetric Effects
<b>Lab:</b>	Simulating Global Illumination and Image Based Lighting

**Reading Assignment and/or Homework:** Review Rendering Help Documentation and apply to Midterm Project

**WEEK 5** **2/7/2012**

**Overview:** Render Layers and Passes

**Weekly Objective:** Asset and Render Review

**Lecture:** Camera set up and controls and Render Global properties

**Lab:** Multi-pass rendering using render layers passes

**Reading Assignment and/or Homework:** Finalize Renders and Look Development for Class Midterm Presentation

**WEEK 6** **2/14/2012**

**Overview:** Midterm Project Presentation

**Weekly Objective:** Project Assessment

**Lecture:** Reflections and Refractions Maps with Depth Blur

**Lab:** File Referencing. Rendering Flags and Reference Objects

**Reading Assignment and/or Homework:** Tweak Settings and Renders from Class Critique

**WEEK 7** **2/21/2012**

**Overview:** Quality Vs. Speed Renders

**Weekly Objective:** Apply Render Optimization techniques

**Lecture:** Optimizing render time and managing lights and shading networks

**Lab:** Rendering environment effects by using layer passes

**Reading Assignment and/or Homework:** Prepare Render Layers and Passes

**WEEK 8** **2/28/2012**

**Overview:** Organic Shaders and Reality Match

**Weekly Objective:** Finalize Lighting and Asset Shaders

**Lecture:** Sub Surface Scatter and Converting file textures, baking shadows and camera mapping overview

**Lab:** Project Workshop  
**Reading Assignment and/or Homework:** Finalize Shaders, Settings, Renders and Engine Presets for Mental Ray

**WEEK 9** **3/6/2012**

**Overview:** Compositing Techniques  
**Weekly Objective:** Learn Nuke workflows using render passes  
**Lecture:** Rendering in Production Pipeline and managing Render Data  
**Lab:** Rendering and Retouching render sequences using Nuke and Photoshop  
**Reading Assignment and/or Homework:** Create project renders and Nuke scripts

**WEEK 10** **3/13/2012**

**Overview:** Final Composite  
**Weekly Objective:** Final Composite tweaks and effects  
**Lecture:** Class Workshop on File Formats, Effects, Color Corrections  
**Lab:** Using Plug-ins and Rendering Systems for Multiple Render Jobs and Color Corrections  
**Reading Assignment and/or Homework:** Finalize Renders and Passes Composite for Final Project Presentation

**WEEK 11** **3/20/2012**

**Overview:** Final Project Due  
**Weekly Objective:** Class Final Critique  
**Lecture:** N/A  
**Lab:** N/A  
**Reading Assignment and/or Homework:** N/A