

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: CA3600
Course Title: Graphics Programming
Class Meetings: Tuesdays 6:00 - 10:00 PM
Session / Year: Winter 2011
Instructor Name: Juan Borrero, MFA
Email Address: jborrero@aia.edu
Telephone: N/A
Office Hours: N/A

Course Title

Course Description: This introductory course addresses the fundamentals of computer scripting for animation including programming, logic flow, problem analysis, and the application of a graphical user interface (GUI) to optimize production. Students are provided challenges to be solved through writing a coded set of instructions.

Course Length: 11 weeks

Contact Hours: 44 hours

Credit Values: 3 credits

Estimated Homework: 6 hours per week

Quarter Credit Hour Definition: A quarter credit hour is an amount of work represented 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 week 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:

1. Evaluate and apply MEL and Expression usage in every day work flow, including types of commands, variables, flags, functions, MEL procedures and scripts.

2. Select, develop and critique appropriate technical approaches to customize 3D models, animations, render tasks and dynamics using MEL.
3. Apply special effects to animations using different Maya plug-ins and through evaluating appropriate connections between Maya attributes.

Course Prerequisite(s): CA3201

Text(s): Recommended:
 MEL Scripting for Maya Animators, Second Edition. Mark R. Wilkins, Chris Kazmier. ISBN: 0-12-088793-2
 Complete Maya Programming: An Extensive Guide to MEL and C++ API. David Gould. ISBN-13: 978-1-55860-835-1 ISBN-10: 1-55860-835-4

Materials and Supplies: Notebook and/or Writing Materials
 CD-R or CD-RW
 DVD-R or DVD-RW
 Portable Hard drive or Flash drive
 1 folder to keep syllabi, assignments and notes in.

Technology Needed: Maya 2012 (64-bit)
 Text Editor: UltraEdit, Notepad++, Notepad, Wordpad, TextEdit
 Adobe Photoshop
 Microsoft Windows 7 Professional, Microsoft Windows Vista Business x64 Edition (SP2), Microsoft Windows XP Professional x64 Edition (SP2), Apple® Mac OS® X 10.6.5, Red Hat® Enterprise Linux® 5.5 WS, or Fedora™ 14 operating systems
 Windows and Linux: Intel Pentium 4, AMD Athlon processor with SSE3 instruction set support (or higher)
 Macintosh® computer: Macintosh computer with Intel-based 64-bit processor
 4 GB RAM (Minimum)
 10 GB free hard drive space
 Qualified hardware-accelerated OpenGL graphics card
 Three-button mouse with mouse driver software
 DVD-ROM drive
 HDD: IDE, SATA, SATA 2, SAS, SCSI
 Microsoft Internet Explorer 7.0 or higher, Apple Safari, Mozilla Firefox, and or Google Chrome web browsers

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	20
Assignments	25
Midterm	25
Final Project	30
Total	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 office 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 for 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 necessary documentation. If you have a concern or complaint in this regard, please contact the Dean of Student Affairs in Room. Complaints will be handled in accordance with the school's Internal Grievance Procedure for 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. The only exceptions to this policy are graduating seniors and university imposed closings for holidays. Attending fewer 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 nine 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 the 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 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.

WEEKLY CLASS TOPICS AND ASSIGNMENTS

WEEK 1	1/10/2012
Overview:	Class Introduction
Weekly Objective:	MEL Scripting Usage and Production Value
Lecture:	Discussion on MEL Scripting, commands and Expressions
Lecture:	Using the Script Editor, short cuts, Shelves and Expression Editor
Reading Assignment and/or Homework:	Review the Maya Scripting Help Documentations on class topics
WEEK 2	1/17/2012
Overview:	MEL Scripting Workflow
Weekly Objective:	Creating/Delete and optimize your scene objects Custom Attributes
Lecture:	Procedures and variables
Lecture:	Variable types and relationship to object attributes
Reading Assignment and/or Homework:	Review the Maya Scripting Help Documentations on class topics
WEEK 3	1/24/2012
Overview:	Teacher Out of Town - Substitute Provided Conditions and Loops
Weekly Objective:	Create automated tasks to operate on multiple objects
Lecture:	Condition and Loop statements in Scripting and Expressions
Lab:	Introduction to User Interface (UI) design and structure in MEL
Reading Assignment and/or Homework:	Review the Maya Scripting Help Documentations on class topics
WEEK 4	1/31/2012
Overview:	Teacher Out of Town - Substitute Provided Review and Design
Weekly Objective:	Review all topics covered so far and resolve knowledge base conflicts

Lecture: N/A
Task: MEL workshop 1 (Q & A)
Reading Assignment and/or Homework: Review the Maya Scripting Help Documentations on class topics

WEEK 5 **2/7/2012**

Overview: Pipeline Environment
Weekly Objective: Introduce Pipeline techniques to speed production time and organize assets
Lecture: Using posted scripts and additional tools for Maya to enhance work flow Scripts to Improve Maya's interface
Lab: Customized scripts for your animation, modeling and texturing needs
New tools and menus from the Internet
Reading Assignment and/or Homework: Prepare for Class Midterm Exam

WEEK 6 **2/14/2012**

Overview: Midterm Exam
Weekly Objective: Good Luck on your Midterm Exam. Study from your handouts, notes and Maya docs
Lecture: N/A
Lecture: N/A
Reading Assignment and/or Homework: Collaborate with project members on Final Script ideas and workflows

WEEK 7 **2/21/2012**

Overview: Interface Design
Weekly Objective: Start design phase on Final Script
Lecture: Building a Graphic User Interface (GUI) part I
Lecture: Creating Advanced Windows and Buttons inside Maya using MEL Scripting.
Reading Assignment and/or Homework: Create User Interface and Controls for Final Script

WEEK 8 **2/28/2012**

Overview: User Interaction With Tools

Weekly Objective: Finalize script interfaces and custom procedures workflows

Lecture: Building a Graphic User Interface (GUI) part II

Lecture: Connecting the GUI to your scene with Warning messages and prompts

Reading Assignment and/or Homework: Connect Custom Procedures to GUI controls

WEEK 9 **3/6/2012**

Overview: Expressions

Weekly Objective: Learn the use of expressions in project workflows

Lecture: Introduction to Functions

Customized attributes for particles

Creation and runtime expressions using variables

Lab: Advanced techniques using Mel Scripting, Customizing Maya using MEL
Using icons outside the icons folder and Global variables

Reading Assignment and/or Homework: Finalize you custom script procedures and GUI Connections

WEEK 10 **3/13/2012**

Overview: Script Revision

Weekly Objective: Source Code Assessment

Lecture: N/A

Lab: MEL Work Shop 2 (Q & A).

Reading Assignment and/or Homework: Finalize you custom script for Class Presentation

WEEK 11 **3/20/2012**

Overview: Final Script Presentation Due

Weekly Objective: Class Final Critique

Lecture: N/A

Lecture: N/A

**Reading Assignment
and/or Homework:** N/A