

Syllabus

Fall 2009

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Middlesex

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Meeting Times: Tuesday / Thursday
5:00 PM - 7:30 PM

SCAD®

The University for Creative Careers®

School of Film, Dig Media, Perf, Department of Visual Effects, Savannah

VSFX 419, Section: 02 Programming Models and Shaders II

Mission of the College:

The Savannah College of Art and Design exists to prepare talented students for professional careers, emphasizing learning through individual attention in a positively oriented university environment.

Course Description:

This course explores programming concepts used to create 3-D lighting scenarios and environments with a focus on developing a personal aesthetic. Students apply these concepts to create code-based shaders, scripts and other procedures to develop aesthetically strong visuals for long formats. Prerequisite: VSFX 319.

Course Goals: The following course goals articulate the general objectives and purpose of this course:

To ensure students gain an understanding of the computer science that underpins the operation of modern 3D modeling and animation applications. To develop skills in methodologies that enable visual effects shots to be efficiently set up and executed using scripting/programming techniques that exploit the benefits of combining RenderMan, Maya and Pixar's mtor technologies. Students wishing to develop their understanding of the use of RenderMan and Houdini will be encouraged to do so. By not relying solely on the use of a graphical user interface, students develop a deeper understanding of the core computer graphics concepts that underpin the operation of software such as Maya.

Student Learning Outcomes: The following course outcomes indicate competencies and measurable skills that students develop as a result of completing this course:

1. Students will acquire and demonstrate knowledge of the use of MEL scripts that generate models and animations that exhibit the subtle variations of form and motion that mimic objects and actions found in real world.
2. Students will acquire and demonstrate knowledge of the use of SLIM templates that enable Maya artists to achieve greater artistic control over shading than could otherwise be realized using Maya's in built hypershade technology, documentation that enable

Course Materials:

Required Text(s):

Recommended Text(s):

Required Material(s):

Grading Opportunities:

Your overall course grade will be computed according to the following breakdown:

No Assignments have been entered

Grading Standards	Range
Letter grade: A = excellent	90 — 100 %
Letter grade: B = good	80 — 89 %
Letter grade: C = *	70 — 79 %
Letter grade: D = *	60 — 69%
Letter grade: F = failing	0 — 59%

*Refer to the student handbooks and departmental standards for minimal acceptance for passing grade.

Schedule of Classes:

Key events including assignments, projects due dates/exam dates:

Class 1:	Class 1 Tuesday, September 15: Discussion of assessment criteria and the web based portfolio. Creating a layered surface shader.
Class 2:	Class 2 Thursday, September 17: Overview of Pixars Slim interface. Review of Slim documentation; how to source Slim files; scripting the interface elements of a Slim editor The nature of Slim collections for arrays and composite groupings of data types. Slim templates assignment given (due Class 3).
Class 3:	Class 3 Tuesday, September 22: Introduction to writing displacement shaders and the technique of message passing between shaders. Shader I assignment given (due Class 4).
Class 4:	Class 4 Thursday, September 24: Studio session devoted to the water shader II assignment (due Class 5).
Class 5:	Class 5 Tuesday, September 29: Introduction to RSL raytracing – use of the trace() function. Shader III assignment given (due Class 7).

Class 6:	Class 6 Thursday, October 1: Advanced raytracing using the gather() and fresnel() functions. Discussion of the principles of refraction and their application in a surface shader.
Class 7:	Class 7 Tuesday, October 6: Studio session devoted to issues of combining refraction and reflection.
Class 8:	Class 8 Thursday, October 8: Studio session devoted to issues of combining refraction and reflection.
Class 9:	Class 9 Tuesday, October 13: Introduction to python. Evoking a script from the command line. Introduction to the basic python objects. Text handling assignment given (due Class 10).
Class 10:	Class 10 Thursday, October 15: Reading, writing and filtering text files with python. File filtering assignment given (due Class 11).
Class 11:	Class 11 Tuesday, October 20: Advanced text handling using regular expressions. Regular expression assignment given (due Class 13).
Class 12:	Class 12 Thursday, October 22: Studio session devoted to developing solutions to the regular expression assignment.
Class 13:	Class 13 Tuesday, October 27: Introduction to the basic concepts of writing Mel scripts. Mel Insertion assignment given (due Class 15).
Class 14:	Class 14 Thursday, October 29: Studio session devoted to developing solutions to the mel scripting assignment.
Class 15:	Class 15 Tuesday, November 3: Using python to write helper apps for RenderMan. Issues dealing with bounding boxes and screen space will be introduced. Helper app assignment given (due Class 16).
Class 16:	Class 16 Thursday, November 5: Introduction to RenderMan curves and curve types. Generating curves with python helper applications. Final project given (due class 19).
Class 17:	Class 17 Tuesday, November 10: Studio session devoted to developing solutions for the final project. Introduction to basic techniques of producing botanical branching.
Class 18:	Class 18 Thursday, November 12: Studio session devoted to developing solutions for the final project.
Class 19:	Class 19 Tuesday, November 17: Students will make individual presentations of the solutions they developed for their final project.
Class 20:	Class 20 Thursday, November 19: Final check of student web pages. Student feedback/appraisal of the course.

Course Information:

Field Trip(s):

Field trips will be scheduled outside of the regular class hours; these will be announced as the quarter progresses.

Extra Help Session(s):

These will be scheduled on a weekly basis outside of regular class hours.

Other Course Information:

College Policy:

Academic Integrity:

Under all circumstances, students are expected to be honest in their dealings with faculty, administrative staff and fellow students.

In class assignments, students must submit work that fairly and accurately reflects their level of accomplishment. Any work that is not a product of the student's own efforts is considered dishonest. Students must not engage in academic dishonesty; doing so can have serious consequences.

Academic dishonesty includes, but is not limited to, the following:

1. Cheating, which includes, but is not limited to, (a) the giving or receiving of any unauthorized assistance in producing assignments or taking quizzes, tests or examinations; (b) dependence on the aid of sources including technology beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments; (c) the acquisition, without permission, of tests or other academic material belonging to a member of the college faculty or staff; or (d) the use of unauthorized assistance in the preparation of works of art.
2. Plagiarism, which includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. Plagiarism also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.
3. Submission of the same work in two or more classes without prior written approval of the professors of the classes involved.
4. Submission of any work not actually produced by the student submitting the work without full and clear written acknowledgement of the actual author or creator of the work.

Attendance and Personal Conduct:

Only students who are properly registered for a course may attend that class. Students are expected to participate in all scheduled classes and examination periods. Absences in excess of four per quarter, or 20 percent of the course, result in a failing grade for the course. Tardiness, early departure or other time away from class in excess of 15 minutes is considered absence for the class period.

The student's appearance and conduct should be appropriate and should contribute to the academic and professional atmosphere of the college. The college reserves the right at its sole discretion to withdraw the privilege of enrollment from any student whose conduct is detrimental to the academic environment or to the well-being of other students, faculty or staff members, or to the college facilities.

***Flu-related absences:**

In an effort to reduce the spread of the H1N1 virus, the Savannah College of Art and Design is implementing various protocols suggested for colleges and universities by the Centers for Disease Control and Prevention.

Students who experience flu-like symptoms should not attempt to attend class until 24 hours after symptoms subside. Students who miss class due to the flu virus must contact their professors immediately, before class if possible but within 24 hours of the class meeting to discuss make up options if they are available.

Students should ensure that all absences are used wisely in case they become ill and need to miss class. Students who contract the flu virus may be granted leniency with the attendance policy, but must complete all required course assignments and attain all required learning outcomes. Individual circumstances will be reviewed on a case-by-case basis by the professor.

Enrollment policies:

Students are responsible for assuring proper enrollment. See the college catalog for information on add/drop, withdrawals, incompletes, and academic standing.

Midterm Conference(s):

Each student enrolled in the course will have a midterm conference scheduled outside of class time with the professor. Students are expected to keep this appointment.

Learning Support Resources and Academic and Safety Polices:

Information about SCAD learning support resources and academic and safety policies, including the Learning Assistance Center, the Jen Library, the Writing Center, SCAD Helpdesk, the Visual Resources Center, and Student Counseling and Disabilities Services can be found in the menu area of the Blackboard web site for this course.

Student Surveys:

The SCAD Student Survey and the Noel-Levitz Student Satisfaction Inventory will both be administered in Week 6 of spring quarter and online course evaluations will be available every quarter during weeks 8-10. SCAD's office of institutional research is responsible for gathering and delivering survey results to decision-makers on campus. For more information or questions, contact us at surveys@scad.edu.

Please refer to the college catalog or the student handbook for all college policies and procedures.