Syllabus

Winter 2020

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Building/Room: MONTGO 223

Meeting Times: Monday / Wednesday

08:00 AM - 10:30 AM

SCAD®

The University for Creative Careers®

School of Digital Media, Department of Visual Effects, Savannah

VSFX 705 - Programming Concepts for Visual Effects

Section: 01 CRN: 20970

SCAD Mission:

SCAD prepares talented students for creative professions through engaged teaching and learning in a positively oriented university environment.

Course Description:

Students gain introductory knowledge of the LINUX/UNIX environment and how it relates to text editing and file management. In addition, the foundations of programming languages are covered utilizing LINUX/UNIX shell scripting, PERL, MEL, C++ or similar programming. Prerequisite(s): None.

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

1. Students will develop the concepts and skills to enable students to modify, combine and write scripts that achieve specific production tasks. 2. Students will gain a sound understanding of procedural programming using the 'C' language and object oriented methodologies using 'C++'.

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 write scripts to automate file filtering and batch mode tasks.
2. Students will write scripts for a GUI application that reads and responds to command line inputs.
3. Students will create an application that performs color space conversions.
4. Students will create an application that outputs a 3D scene description.

Schedule of Classes:

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

Pre-quarter assignment	Review the best technical breakdowns, images and animation of the Fall 2018 quarter paying particular attention to the different communication styles of the students. https://sdm.scad.edu/faculty/mkesson/vsfx705/wip/best/fall18/index.html
Class 1: **Mon, January 06, 2020**	• REVIEW PRE-CLASS ASSIGNMENT Montgomery hall evacuation procedure. Mel Topics • accessing mel documentation • running scripts - script window • sourcing a mel script • executing mel using Cutter • commands & flags (creation, query & edit modes) • introduction to datatypes Due: Session 4. Assignment: Read chapters 3 & 5 of Mel Fundamentals,
Class 2: **Wed, January 08, 2020**	Mel Topics • "for" loops and "if" tests • datatypes in more detail • local & global variables • custom procedures Refer to quick reference for examples of using datatypes, conditionals, looping statements & procedures. Complete the mel matrix assignment ready for session 7.
Class 3: **Mon, January 13, 2020**	Mel Topics • mel quick references I II • organizing source code into library files • coding style - intentation, naming conventions & comments • using groups, • duplicates and instances • setting and getting attribute values Assignment: Re-code the matrix project so that it is divided into procs. Note the final review of this assignment is session 7.

Class 4: **Wed, January 15, 2020**	Mel Topics • developing the code for the matrix assignment.
Class 5: **Mon, January 20, 2020**	Mel Topics • finalizing the look of the matrix • using Disney's denoising technology
Class 6: **Wed, January 22, 2020**	Documentation Topics • development of the technical breakdown.
Class 7: **Mon, January 27, 2020**	**Review** the mel matrix technical breakdowns. **Topics** • preparing the scene for animation, • using RenderMan's batch rendering system • batch rendering via python
Class 8: **Wed, January 29, 2020**	Topics • finalizing the animation • the final review of the Matrix Animation assignment will be session 9
Class 9: **Mon, February 03, 2020**	**Review** the mel matrix animations. **Mel Topics** • differences between static and dynamic user interfaces, • creating/querying ui widgets, • use of global variables, • the Matrix UI assignment.
Class 10: **Wed, February 05, 2020**	Mel Topics • use of callback procs for interactive UI widgets, • look-dev of the object created/modified by the UI. • the final review of the UI assignment will be session 13.
Class 11: **Mon, February 10, 2020**	Mel Topics • continued development of the UI
Class 12: **Wed, February 12, 2020**	Documentation Topics • development of the technical breakdown

Class 13: **Mon, February 17, 2020**	**Fianl Review** the Mel UI assignment. **Topics.** • executing a python script from the command line • executing a python script from Cutter • accessing python documentation • Python: Quick Reference I • Python: Quick Tutorial • built-in datatypes
Class 14: **Wed, February 19, 2020**	Topics. • implementing a proc • using if __name__== "__main__": • loops & conditionls • writing files
Class 15: **Mon, February 24, 2020**	Topics. • python classes • class and instance variables • class and instance methods • complete the Python Helper App assignment ready for session 20
Class 16: **Wed, February 26, 2020**	Topics. • anatomy of a simple python helper app script • testing the script in a terminal • using the script with Maya and Pixar's RenderMan • how the script works with PRman • the use of Pixar's prman module and it's methods • extending the fuctionality of the script. •
Class 17: **Mon, March 02, 2020**	Topics • generating RenderMan points • generating points to form shapes
Class 18: **Wed, March 04, 2020**	Topics • A studio session devoted to the helper app assignment
Class 19: **Mon, March 09, 2020**	Documentation Topics • A studio session devoted to the helper app assignment
Class 20: **Wed, March 11, 2020**	**Review** the Python Helper App technical breakdowns. Feedback and student review of this course.

Grading Opportunities:

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

Assignment	Weight
Preparation of portfolio web pages	15%
Mel Matrix Assignment	20%
Mel: Matrix Animation	15%
Python: Implementing a User Interface	30%
Python: Helper App - Procedural Geometry	20%
Total Weight	**100 percent**

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

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

Course Information:

Field Trip(s):

Group exhibition
'LEATHER, LACE AND LUSTER'
SCAD - Museum of Art
Monday 5 Jan 8am
Monday 5 Jan 2pm

Kyra Schmidt
'EARTH, MATTER, PAPER'
SCAD - Museum of Art
Monday 20 Jan 8am

Extra Help Session(s):

Friday 31 Jan 8am room 223
Friday 14 Feb 8am room 223

Extended Learning Opportunities:

SCAD Career Fair 2020
Feb 21
Savannah Civic Center

VSFX Quarterlies Show SCAD Museum of Art January 17, 2020
4:30pm – 6:30 pm

Other Course Information

Review the "Selected Works" from the Fall quarter 2019.
https://sdm.scad.edu/faculty/mkesson/vsfx705/wip/best/fall19/index.html

Course Materials:

Required Text(s):

Learning Python
By Mark Lutz
O'Reilly
ISBN 10: 0-596-51398-4 | ISBN 13: 9780596513986

Recommended Text(s):

Python Scripting for Maya Artists (on-line)
Chad Vernon
http://www.chadvernon.com/blog/resources/python-scripting-for-maya-artists/

Required Material(s):

A notebook and pen.

University Policies:

Academic Integrity:
Under all circumstances, students are expected to be honest in their dealings with faculty, administrative staff and other 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 university 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 and participate in that class. Students are expected to attend and participate in all scheduled classes and examination periods. Absences in excess of four class periods per quarter, or 20 percent of the course, result in the student receiving a failing grade for the course. Tardiness, early departure or other time away from class in excess of 15 minutes per class session is considered absence for the class session.

The student's appearance and conduct should be appropriate and should contribute to the academic and professional atmosphere of SCAD. The university 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 university facilities.

Enrollment policies:
Students are responsible for assuring proper enrollment. See the SCAD 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.

Academic Support and Tutoring:
Academic support for students at all SCAD locations can be found in MySCAD, under the Student Workspace tab, Department Directory, Academic Resources.

Course Evaluations:
SCAD offers students the opportunity to evaluate all scheduled courses during each quarter term. Student feedback is essential to continuously improve academic services at SCAD. Evaluations will be available the end of each quarter at the beginning of Week 8 and must be completed online by the end of Week 10. A sample course evaluation for on-ground courses is available here.
In order to access course evaluations, the student should take the following steps:

1. Log on to MySCAD
2. Click on the Student Workspace Tab
3. Locate the Course Evaluations link under My Courses channel
4. This will bring up a page that says current surveys and lists all the courses that are currently available for evaluation.

For more information or questions, contact us at evaluations@scad.edu.

Student Surveys:
Students are strongly encouraged to provide feedback on their university experience through SCAD's institutional surveys. The SCAD Student Survey and the Noel-Levitz Student Satisfaction Inventory will both be administered in spring quarter. SCAD Student Survey will be emailed to every student's email account starting in Week 1. The Noel-Levitz Student Satisfaction Inventory will be administered on paper during Week 4 of spring quarter. SCAD's office of institutional effectiveness is responsible for gathering and delivering survey results to decision-makers on campus. For more information or questions, contact us at surveys@scad.edu.