

Syllabus

Winter 2020

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Meeting Times: Tuesday / Thursday

2:00 PM - 4:30 PM

SCAD[®]

The University for Creative Careers[®]

School of Digital Media, Department of Visual Effects, Savannah

VSFX 160 - Introduction to Visual Effects Programming Section: 03 CRN: 23812

SCAD Mission:

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

Course Description:

In this programming course, students are introduced to workstation text editing, LINUX/UNIX file management, the LINUX/UNIX environment, LINUX/UNIX shell scripting and basic object-oriented programming. Prerequisite(s): DIGI 130.

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

1. Students will learn creative problem solving and critical thinking skills that can be used to create a variety of visual effects solutions. 2. Students will gain a foundation in the Linux operating system at an intermediate level. 3. Students will develop skills in writing code to create visual effects for specific purposes. 4. Students will learn fundamental concepts common to all programming languages prevalent in the visual effects industry.

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 apply critical thinking and creative problem-solving techniques to identify and eliminate errors in their code.
2. Students will use command line arguments to navigate and accomplish tasks in Linux and to write Linux shell scripts.
3. Students will write original, technically competent and efficient code that accomplishes their intended purpose.
4. Students will write code to achieve specific 3-D effects as well as to write useful production tools.

5. Students will demonstrate competency with fundamental programming concepts by writing robust scripts in more than one programming language.
6. Students will demonstrate basic proficiency in programming languages that are prevalent in the visual effects industry.

Schedule of Classes:

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

Pre-quarter assignment	<p>Review the best technical breakdowns, images and animation of the Winter 2019 quarter paying particular attention to the different communication styles of the students.</p> <p>https://sdm.scad.edu/faculty/mkesson/vsfx160/wip/best/winter2019/index.html</p>
Class 1: Tue, January 07, 2020	<p>Topics</p> <ul style="list-style-type: none"> ● Montgomery Hall evacuation procedure ● what is plagiarism ● installing customization scripts ● accessing mel documentation ● running scripts - script window ● sourcing a mel script ● executing mel using Cutter ● commands & flags (creation, query & edit modes). ● Before session 2: <ol style="list-style-type: none"> 1 Read chapters 3 & 5 of Mel Fundamentals, 2 Review the tutorial Cutter: Integration with Maya
Class 2: Thu, January 09, 2020	<p>Topics</p> <ul style="list-style-type: none"> ● introduction to datatypes ● "for" loops and "if" tests ● datatypes in more detail ● local & global variables ● custom procedures <p>Refer to quick reference for examples of using datatypes, conditionals, looping statements & procedures.</p> <p>Before the next session:</p> <ol style="list-style-type: none"> 1 Read chapters 6, 7 & 8 of Mel Fundamentals bbeeffoorree session 3. 2 Complete the mel matrix assignment ready for session 7.
Class 3: Tue, January 14, 2020	<p>Topics</p> <ul style="list-style-type: none"> ● mel quick references I II ● organizing source code into multiple scripts ● coding style - intantation, naming conventions & comments using groups, ● duplicates and instances ● setting and getting attribute values

<p>Class 4: Thu, January 16, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> • referring to the web for inspiration, • developing the code for the matrix assignment.
<p>Class 5: Tue, January 21, 2020</p>	<p>Please note change of date due to MLK being observed on Monday 21st January.</p> <p>Topics</p> <ul style="list-style-type: none"> • finalizing the look of the matrix.
<p>Class 6: Thu, January 23, 2020</p>	<p>Please note change of date.</p> <p>Topics</p> <ul style="list-style-type: none"> • development of the technical breakdown, • webpage page layout, • communication style - images not words!
<p>Class 7: Tue, January 28, 2020</p>	<p>Review the mel matrix technical breakdowns.</p> <p>Topics</p> <ul style="list-style-type: none"> • preparing the scene for animation, • using RenderMan's (local) batch rendering system, • batch rendering via the render farm.
<p>Class 8: Thu, January 30, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> • using Disney's denoising technology, • finalizing the animation • the final review of the Matrix Animation assignment will be session 9.
<p>Class 9: Tue, February 04, 2020</p>	<p>Final review the mel matrix animations.</p> <p>Topics</p> <ul style="list-style-type: none"> • 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
<p>Class 10: Thu, February 06, 2020</p>	<p>Topics - 3D Noise and other effects</p> <ul style="list-style-type: none"> • implementing a proc • using if <code>__name__ == "__main__"</code>: • loops & conditionls • converting a MEL proc to a python proc

<p>Class 11: Tue, February 11, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> ● fixed directories for Maya python scripts ● mel procs and their "equivalent" python functions mel ● arrays and python lists
<p>Class 12: Thu, February 13, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> ● trouble shooting the process of porting MEL to python
<p>Class 13: Tue, February 18, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> ● preparation of the Mel to Python technical breakdown
<p>Class 14: Thu, February 20, 2020</p>	<p>Final review the Mel to Python assignment.</p> <p>Topics</p> <ul style="list-style-type: none"> ● python classes ● class methods and instance variables ● introduction to qt designer ● implementing a BASIC GUI with limited functionality ● have a "proof-of-concept" working implementation of the BASIC GUI ready for session 15. ●
<p>Class 15: Tue, February 25, 2020</p>	<p>Review the student's BASIC GUI implementations.</p> <p>Topics</p> <ul style="list-style-type: none"> ● pre-visualization of a Matrix GUI ● implementing the GUI ● complete the Python Maya UI assignment ready for session 19.
<p>Class 16: Thu, February 27, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> ● continued exploration of the subclasses of the PySide2 module
<p>Class 17: Tue, March 03, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> ● final trouble shooting of their GUI implementations
<p>Class 18: Thu, March 05, 2020</p>	<p>Topics</p> <ul style="list-style-type: none"> ● preparation of the technical breakdowns
<p>Class 19: Tue, March 10, 2020</p>	<p>Review of the Python Maya GUI technical breakdowns and final revisions/corrections.</p>

Class 20:
Thu, March 12,
2020

Final presentation and critique of the students web portfolios.

Grading Opportunities:

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

Assignment	Weight
Mel: Matrix - Transformations in 3D space	30%
Mel: Matrix Animation - Transformations in time.	20%
Mel to Python: Transforming Mel Code to Python	10%
Python: Maya Graphical User Interface - Transforming user experience.	30%
Professionalism - students are assessed on their professional conduct, including but not limited to: <ul style="list-style-type: none">• presentation skills• being prepared for dailies• participating in classroom discussions proper submission of exercises• attempting or completing in-class exercises	10%
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 11am

Kyra Schmidt
'EARTH, MATTER, PAPER'
SCAD - Museum of Art
Monday 20 Jan 11am

Extra Help Session(s):

Friday 31 Jan 11am room 223
Friday 14 Feb 11am room 223

Extended Learning Opportunities:

SCAD Alumni Mentor Visit: Hassan Taimur

Monday, January 27th, 9:00 a.m - 11:00 a.m., Location TBD

"Coffee, donuts and Inside VFX ": Over breakfast, Hassan will host an informal presentation about his experiences in the VFX industry and offer students tips on how to be successful in the industry.

Monday, January 27th, 4:00 p.m - 5:00 p.m, Location TBD

Reel review: Hassan will review student reels on a first come first serve basis, Each review session will last about 5 minutes. Students are advised to email a link to the reel they want reviewed to kburrell@scad.edu with subject "Alumni Mentor Reel Review Request: <first name Last name>"

Tuesday, January 28th, 9:00 a.m - 12:00 p.m., and 2:00 p.m - 4:00 p.m, Location TBD

"Simulated VFX Studio", under Hassan's supervision students will create a full CGI commercial based on actual brief from a client.

SCAD Career Fair 2020
Feb 21
Savannah Civic Center

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

Other Course Information

Review the "Selected Works" from the winter quarter 2019.

https://sdm.scad.edu/faculty/mkesson/vsfx160/wip/best/best_winter2019/index.html

Course Materials:

Required Text(s):

Professional MEL Solutions for Production
by Kevin Mannens and Ed Caspersen
ISBN 10: 1598220667

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.