Syllabus

Spring 2021

Malcolm Kesson

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Meeting Times: Monday / Wednesday

5:00 PM - 7:30 PM

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: 34081

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 Winter 2021 quarter paying particular attention to the different communication styles of the students. https://sdm.scad.edu/faculty/mkesson/vsfx705/wip/best/winter21/index.html
Class 1: Mon, March 22, 2021	• check that all required software has been installed • check the PATH's for Jave, Python and ffmpeg are correct • vsfx705.zip • configuring the Cutter text editor • editing, uploading & testing student web pages • CUSTOMIZATIONS.zip additional information customization • check the RenderManForMaya plugin loads properly in Maya • establishing a common directory structure
Class 2: Wed, March 24, 2021	• rechecking the installation of the required software • accessing python documentation • executing python using Cutter • introduction to python datatypes and built-in functions
Class 3: Mon, March 29, 2021	• using external modules • "for" loops and "if" tests • custom procedures • writing data files • using particles rather than small spheres • introduction to the first scripting challenge
Class 4: Wed, March 31, 2021	• continue the introduction to the first scripting challenge • writing a Pixar RenderMan particle RIB file • importing a RIB file into Maya • Note the Particles assignment is due session 7
Class 5: Mon, April 05, 2021	This class will be deliverd on Friday 22nd Jan - MLK Make up Day.

Class 6: Wed, April 07, 2021	Because the previous class has been moved to Friday 22nd Jan this class is, in effect, Class 5. Topics • development of the technical breakdown. • The topic for the Friday make up class will be, • introduction to using python in Maya
Class 7: Mon, April 12, 2021	• preparation for the 2nd assignment - the matrix • creating geometry - transform & shapes node names • grouping geometry • duplicating & instancing geometry and groups of geometries • writing functions that return the name of a group • getting the xyz positions of polymesh vertices • using polymesh vertices to position other surfaces • Collect 4 inspiration images that will guide the development of your Matrix design. •
Class 8: Wed, April 14, 2021	• students will present the inspiration images they intend to use to guide the design of their Matrix project. • secondary geometry • addressing specific issues and challenges • ensuring the student functions allow adequate shape control
Class 9: Mon, April 19, 2021	• addressing specific issues and challenges
Class 10: Wed, April 21, 2021	• lighting and look development the student matrix designs • ensure their technical breakdown are ready for review - session 12.
Class 11: Mon, April 26, 2021	• lighting and look development the student matrix designs • development of the students technical breakdowns
Class 12: Wed, April 28, 2021	• Final Review the Matrix Assignment. • python classes • classes and inheritance • PyQt and PySide2 • creating a UI window using PyQt5 • laying out QWidgets using QHBoxLayout and QVBoxLayout • using QPushButton - connecting a button to an action

Class 13: Mon, May 03, 2021	• implementing a UI in Maya using PySide2 • using sliders, • storyboarding (previsualization) a UI for the students Matrix. • Students will prepare detailed drawings of the design for thier Matrix UI.
Class 14: Wed, May 05, 2021	• Each student will present their previsualization drawing of their intended design of their Matrix UI. • using QComboBox, • using tabbed panels for more sophisticated UI designs, • helping students to layout the widgets for their Matrix UI.
Class 15: Mon, May 10, 2021	• continued development of the Matrix UI.
Class 16: Wed, May 12, 2021	• continued development of the Matrix UI. • preparing the technical breakdown of the Matrix UI assignment.
Class 17: Mon, May 17, 2021	• finalize the technical breakdown of the Matrix UI assignment
Class 18: Wed, May 19, 2021	• Final Review of the technical breakdowns of the students Matrix UI. • continue rendering the matrix animations
Class 19: Mon, May 24, 2021	• Preparing the technical breakdown of the Matrix Animation assignment.
Class 20: Wed, May 26, 2021	• **Final Review** the Matrix Animation assignment.

Grading Opportunities:

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

Assignment	Weight
Preparation of portfolio web pages	15%
Python Challenge: Particles [due session 6]	20%
Python Assignment: Matrix [due session 11]	20%
Python Assignment: Maya User Interface [due session 18]	25%
Matrix Animation [due session 20]	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):

Field Trips will be provided via Blackboard Announcements prior to the 1st Day of Class

Extra Help Session(s):

TBA

University-wide extended learning opportunities

Extended learning opportunities are designed to enrich and expand students' course-based learning experiences. Attend at least three (3) of the following 10 university-wide extended learning opportunities (i.e., Guests & Gusto, Bee Well, SCADextra and SCADamp workshops, or SCAD signature events) either on-ground or virtually to further explore your discipline, discover new information, and deepen academic engagement.

Academic Skills Workshop Series

Savannah
3/26/21
4:00pm - 6:00pm
Introduction To Unreal Engine
Charles Shami https://scad.zoom.us/meeting/register/tJAqfuGspjkpG9LSanAt1vZLWN7lUki8Vnka
Montgomery Hall room 111
Students will be introduced to the fundamentals of the Unreal Game Engine user interface, the settings, and game engine components. Students will be more familiar with the Unreal Engine workflow.

Savannah
4/2/21
10:00am - 12:00pm
Career Development: Professionalism Dos and Don'ts Adriana
https://scad.zoom.us/meeting/register/tJwkce2tqjgtH9RPgIMlE30UaTcS5uiHNiWB
In this workshop , students will learn tips and advice regarding professionalism- from dos and don’ts in interviews- to techniques on how to prepare. Give a good first impression and stay calm in an interview.

Savannah
SCAD GamingFest 2021
April 9-10, 2021
Team up with game design and digital media pros.

Please refer to the grading opportunities section of this syllabus to see how your participation in the above extended learning opportunities and your completion of related assignments contribute to your overall grade for this course.

Additional extended learning opportunities:

Savannah
4/16/21 10:00am - 12:00pm
Monster Madness! Character Design Workshop
Brian Bowes https://scad.zoom.us/meeting/register/tJErdeCtqj8iGN36toihwAqK0JeR9Gk_Vupt
Students will have the opportunity to develop a unique creature character with Professor Bowes. this hour long workshop we’ll work through thumbnails, research and development, and tight pencil sketches.

Atlanta
4/30/21 1:00pm - 3:00pm
Defining the Human Figure through Shadow Shapes
Thomas Dang Vu https://scad.zoom.us/meeting/register/tJEpcroom
567cmgpjMuGtMIt9HYng4z4mUMHkLICGyb
Learn about life drawing and how to focus on seeing shape rather than detail through personalized instruction. Applicable for students in all majors - especially for students majoring in fine arts, animation and sequential arts.
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Savannah - Equestrian Center
5/7/21 1:00pm - 3:00pm
Joe Regan https://scad.zoom.us/meeting/register/tJItdumrqT4vH9CaqK7MUsXRy2Apsq8RmeKu
Observational Drawing: Drawing Animals
Spend an afternoon with the horses at the SCAD Equestrian Center! Students will learn the classic art of drawing animals from observation and how to get accurate representation

with an animal in motion.
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Atlanta VIRTUAL
5/14/21 4:00pm - 6:00pm
Introduction to Color Theory
Stephen Thorpe https://scad.zoom.us/meeting/register/tJAkc-GprzkpGNH9NcrFKsr6gTU2TnnKPaeV
Introduction to the weird and wonderful world of color. We shall examine and explore how color is always influencing our thoughts, our decisions, our moods and how color and our eyes constantly deceive us.

Savannah - Gulfstream room 139b
5/21/21 1:00pm - 3:00pm
Sung Park https://scad.zoom.us/meeting/register/tJwtcu6qpzssE9M0F9fNLgNVKZeyRdOX8Trv
Designing for Artificial Intelligence
A hands-on workshop for designing and prototyping AI including vision recognition and VUX(Voice User Experience). Demonstration with voice interactive devices(Amazon Echo, Google Home) and a short lecture on how to design and then hands-on prototyping by students.

SCAD GamingFest 2021
April 9-10, 2021
Team up with game design and digital media pros.

Calling all SDM faculty, please add SCAD's virtual GamingFest, April 9-10 to your list of ELOs.
This year's event is going to be jam packed with topics that range into all our programs,
Animation, Visual Effects, Motion Media and Immersive Reality as well as Gaming.
Stay tuned for the announcement of the schedule of events and check it out.
You will find exciting presentations, innovative artists and designers, innovative technology,
and world class panels to recommend to your students.

Other Course Information

Review the "Selected Works" from the Winter quarter 2021.
https://sdm.scad.edu/faculty/mkesson/vsfx705/wip/best/winter21/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

https://www.chadvernon.com/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 Policy:
Students are expected to actively engage in courses to achieve the required learning outcomes. Absences in excess of 20 percent of the course (e.g., five absences for a 10-week course that meets twice per week) result in the student receiving a failing grade, unless the student withdraws from the course in accordance with the withdrawal policy. Absences due to late registration are included in the overall absences permitted for the course.

For on-ground courses, students are expected to attend and participate in all scheduled class periods. Tardiness, early departure, or other time away from class in excess of 15 minutes per class session is considered an absence for that class session.

Students enrolled in eLearning courses are required to check the online course site regularly and academically engage in the daily work of the course. At minimum, students should log in to the course and participate in academically related activities on two separate days per unit/week.

For students enrolled in real-time virtual courses (i.e., SCADnow), active participation in live lectures is the most beneficial form of academic engagement and the best way to demonstrate attendance. If students are unable to attend live lectures due to time zone or other individual challenges, they should demonstrate academic engagement and attendance by logging in to the course and participating in academically related activities on at least two separate days per unit/week.

SCAD faculty monitor and measure attendance for eLearning and SCADnow by documenting each student's weekly academic engagement. Academic engagement is defined as participating in live lectures, demos, or critiques; posting to discussion forums or blogs; submitting assignments; completing quizzes or examinations; attending extra help sessions, office hours, or midterm conferences; and/or corresponding with professors regarding course content via phone, email, text, etc.

Personal Conduct Policy:
Students' appearance and conduct should be appropriate and contribute to the academic and professional atmosphere of SCAD. Any student whose conduct is detrimental to the academic environment or to the well-

being of other students, faculty, staff members, or university facilities will be subject to disciplinary action, up to and including expulsion from the university.

Enrollment policies:
Students are responsible for assuring proper enrollment. See scad.edu 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:
Course evaluations offer students a dedicated opportunity to provide constructive feedback on each of their courses. Student feedback gathered through course evaluations is essential to continuously improving the SCAD academic experience. Evaluations are available to students each quarter during Weeks 8, 9, and 10 through MySCAD. For additional information, contact evaluations@scad.edu.

Student Surveys:
SCAD strongly encourages students to provide feedback on their university experience through institutional surveys. The SCAD Student Survey and the Ruffalo Noel Levitz Student Satisfaction Inventory are administered to students across locations each spring. The National Survey of Student Engagement is administered biennially in winter. Following survey administration, SCAD's institutional effectiveness department analyzes and reports results to various SCAD departments to inform data-driven enhancements. For additional information, contact surveys@scad.edu.