

Syllabus

Fall 2015

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Meeting Times: Monday / Wednesday
8:00 PM - 10:30 PM

SCAD®

The University for Creative Careers®

School of Digital Media, Department of Interactive Dsgn/Game Develop, Atlanta

ITGM 220 - Core Principles: Programming

Section: A02 CRN: 13254

SCAD Mission:

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:

Students develop the core principles of programming interactivity through object-oriented programming techniques using visual scripting tools and hand-coded scripting languages. Experiential learning enables students to develop applications and projects that include complex interactive websites, experimental interactive work and online games.

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

1. Students will design and build basic interactive applications and games using scripting languages.
2. Students will learn the core principles of programming interactivity in basic applications and games.
3. Students will learn to create a design treatment using flowcharts, wireframes and comprehensive layouts.

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 create original dynamic interactive applications and games using a scripting language.
2. Students will use object-oriented programming to design and implement original game concepts and interactive applications through testing and prototyping.
3. Students will create elaborate design treatments based on original ideas for interactive projects and games.

Schedule of Classes:

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

Class 1: Mon, September 14, 2015	Pre-Assignment: Reading posted on Announcements. "Hour of Code." Pre - Test. Lecture: Who am I? What have I made? What's the point of programming? DIVE INTO PROCESSING GAME 1: Tower of Hanoi (in Processing) Variables, If/Then/Else, Loops, Arrays Mouse Input Documentaton, Drawing, Responding to Input Exercise 1: add a move counter (text) add 2 more rings to the puzzle
Class 2: Wed, September 16, 2015	GAME 2: Matching Game (in Processing) State, Classes (let's make a button), first UI Screen, 2D Arrays Exercise 2: add images to the tiles add a guess counter and a game over state with a button that returns you to the opening screen Bonus 1: add a difficulty toggle (6x6 board) to the main menu that changes the layout
Class 3: Mon, September 21, 2015	GAME 3: Pong (in Processing) Run Loop, Keyboard Input, Dumb AI Exercise 3: add "light tails" to the ball. make it so the ball speeds up with every hit. make it so the winner of each point gets a bigger paddle and the loser gets a smaller paddle.
Class 4: Wed, September 23, 2015	GAME 4: Chess (in Processing) JSON. Data-driven game development. "Rules-based" development. Load data from disk at startup. Change data = change gameplay. Exercise 4: detect when castling is possible and make button to let you castle (hint: you can edit the initial layout so you don't have to play into this state) detect when a player is in check or check-mate and show something onscreen to let players know add a game over screen that shows which player has won Bonus 2: create a gameplay variant. maybe black has 3 queens and white has all pawns. maybe bishops and rooks can only move up to 3 spaces (like a knight). maybe the pieces respawn on the back row. ROC: Assigned on blackboard.
Class 5: Mon, September 28, 2015	Game 5: Chess (in Flash) Flash is Dead. But what is it? Display tree, UI authoring. Intro to Flash Builder. MouseInput in Flash Project 1: rebuild another one of the Processing examples in Flash (Tower of Hanoi, Matching, Pong). You must have a menu, a gameplay screen, and a game over screen. See grading rubric for further detail.
Class 6: Wed, September 30, 2015	Problem solving sessions. How tell where the problems are. Group critique. Individual evaluation of code status. Class skills review session.

Class 7: Mon, October 5, 2015	<p>Exercise 1/2/3/4 all due!</p> <p>Game 6: Match-3 Tweens/Animation. Visual f/x.</p> <p>Exercise 5: change the match-3 from replace-in-place to gravity (using states). add a powerup (of your choice) with a visual effect</p> <p>Bonus 3: Will be posted on Blackboard.</p> <p>ROC: Assigned on blackboard.</p>
Class 8: Wed, October 7, 2015	<p>How did project one prepare you for homework 5? Finding parallels.</p> <p>Game test and code swap.</p> <p>WOC assignment announced. (Due class 18)</p>
Class 9: Mon, October 12, 2015	<p>Game 7: SCADtris Debugging. Run loops in Flash. User-level events.</p> <p>Exercise 6: add "leveling up" with a progressive scoring mechanic (http://tetris.wikia.com/wiki/Scoring) and speed-up add softdrop (down arrow) and hard-drop (up arrow) and a small buffer time to slide pieces</p> <p>Sigh up for mid term conferences.</p>
Class 10: Wed, October 14, 2015	<p>How does project one correlate to exercises five and six?</p> <p>The common patter across mutiple languages. Skills review & quiz.</p>
Class 11: Mon, October 19, 2015	<p>UNITY! WOOOOO</p> <p>Exercise 5/6 due.</p> <p>Game 8: Shufflegolf. C#. Texture atlases. Using a physics engine. Concept of a 2D "camera."</p> <p>Exercise 7: change shufflegolf into Desert Golfing (side-scroller). make at least 3 levels</p> <p>Announce Project 2: Make a game! In the environment of your choice. Present ideas on a scale from easy->harder. Easy doesn't mean worse grade. Must have at least 3 screens. Must get idea approved.</p>
Class 12: Wed, October 21, 2015	<p>Project 2 ideas due.</p> <p>Unity setup.</p> <p>Project 1 - last chance to indentify problems to solve.</p> <p>Exercise 7: Whiteboarding project 2 ideas.</p> <p>ROC: Assigned on blackboard.</p>
Class 13: Mon, October 26, 2015	<p>Project 1 due.</p> <p>Game 9: Endless Runner Obstacles/gameplay. Character animation.</p> <p>Exercise 8: replace my uggo character with two of your own. add a character select screen between the menu and gameplay.</p> <p>Bonus: replace the environment art</p>

Class 14: Wed, October 28, 2015	Problem solving and group critique. Project two: what is working, what is not? <i>Note: Project 2 ideas must be approved by the end of this class.</i>
Class 15: Mon, November 2, 2015	Scripting! What is it good for? Let's learn ruby. Text and image manipulation demos. Progress check of exercises 7/8/9 and Project 2. Exercise 9: "data" mining with ruby. ROC: Assigned on blackboard.
Class 16: Wed, November 4, 2015	Javascript + photoshop scripting. Real world examples. Progress check of exercises 7/8/9/10 and Project 2 Exercise 10: make a photoshop script (what it does? super secret.)
Class 17: Mon, November 9, 2015	Homework 7/8 due Walk through Will's Ludum Dare projects and how they're built (3 are Flash, 3 are Unity) Individual and group critique for Project two progress check. Progress is graded.
Class 18: Wed, November 11, 2015	Walk through Dragon Army games -- show real-life examples of architecture and pipeline (using everything we've learned in class). Individual and group critique for Project two progress check. Progress is graded. WOC assignment due at the beginning of class printed and on blackboard.
Class 19: Mon, November 16, 2015	Exercises 9/10 due. Play testing of games.
Class 20: Wed, November 18, 2015	Present Project 2 in class. Post test. Discussion Question wrap up. Classroom Evaluation. Final play test and peer to peer user feedback.

Grading Opportunities:

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

Assignment	Weight
Exercises 1-10	40.00 percent
Project 1	20.00 percent
Project 2	30.00 percent
Class participation and professionalism	10.00 percent
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):

To augment the instruction of this course several field trips have been scheduled. Students must attend at least one of these field trips.

GENERATE (SCAD Atlanta's 24-Hour Art & Design Challenge)

October 2-3, 2015
<https://blog.scad.edu/generate/>

S.I.E.G.E. (Southern Interactive Entertainment and Game Expo)

ALL ITGM STUDENTS ARE STRONGLY ENCOURAGED TO PARTICIPATE
 October 9-11, 2015
 Atlanta Marriott Northwest at Galleria
<http://www.siegecon.net>

SCADfash - 1600 4C

Saturday, Oct. 3 10 a.m. Faculty, staff and student celebration

*This event is free and open to SCAD faculty, staff and students giving them an opportunity to celebrate the opening prior to the public opening at noon.

Extra Help Session(s):

Extra help sessions:

Thursday, October 15 & November 12
 8pm, room 103

[Date and time subject to change, watch blackboard for announcements]

Extended Learning Opportunities:

SCAD Museum of Art field trip

Friday, October 23, 2015
<http://www.scad.edu/event/2015-10-23-discover-your-next-inspiration-scad-museum-art-field-trip>
<http://www.scadmoa.org/>

SCAD Game Club

Friday afternoons in the Game Studies Lab, DMC
<https://www.facebook.com/groups/scadgameclub/>

Playtesting Sessions

Fridays at noon. (Time may change)

Professors Coffee Time

Come have a coffee, chat with professors, or find out what's going on in other majors!
 Fridays at 1pm, DMC 3rd floor lobby

SCAD Connect chats, lectures, and seminars

(available via MySCAD > Student Workspace > SCAD Connect)

Other Course Information:

Other Course Information:

Materials are distributed both in class and online. Discussion is considered part of a student's participation in the class.

Students are expected to demonstrate the ability to communicate, both electronically and verbally throughout the quarter. When we review student work, all students are expected to be engaged and give the presenter their undivided attention.

Per SCAD policy, students arriving more than fifteen minutes late will be marked absent.

Turn off your gadgets. No "goof-off" web surfing during class.

No food or uncovered beverages are permitted in the computer labs. Please respect this policy: eat in The Hub or on the DMC patio and snack in the common vending area on the third floor of the DMC.

Grading

Students whose work meets all criteria outlined for an assignment will receive a grade of C; students whose work meets all criteria and shows additional sophistication, thoughtfulness, research and creativity will receive a grade of B; students whose work meets all criteria and goes well beyond the expected in terms of sophistication, thoughtfulness, research and creativity will receive a grade of A; students whose work fails to meet all criteria outlined for an assignment will receive a grade of D or F.

In addition to the project work and reading, there are writing and public speaking requirements. These are mandatory for all students, and will factor into your grade.

Two points will be deducted for all typographic, spelling and grammatical errors in all writing assignments.

Late assignments will not be accepted. Exams must be taken at the announced time. No exceptions to either of these policies.

Lecture presentations will not be posted. It is your responsibility to take notes and remain attentive in class.

If you have questions or concerns about this or any other course policies stated in this syllabus, class assignments, email correspondence or announced in class, please speak with me in class, during office hours or via email as soon as possible so that we can discuss your concerns.

Course Materials:

Required Text(s):

Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction, by Daniel Shiffman, Morgan Kaufmann Publishers, ISBN-13 9780123736024 ISBN-10 0123736021

Recommended Text(s):

Form+Code in Design, Art, and Architecture, by Casey Reas and Chandler McWilliams, Princeton Architectural Press, ISBN 9781568989372

Required Material(s):

Materials for note-taking.

Materials for digital backups.

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 Monday following 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 and will remain open through Week 6. 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.