CS176
Course Syllabus

Course Title
CS176: Advanced Scripting

Course Description
This course presents game implementation techniques and game architecture in a scripting language environment. Students will investigate concepts of game architecture such as game-system component separation and game flow, while learning about essential elements such as the game state manager, input-/output handler, and frame rate controller. Students will learn how to create several different types of classic games in a variety of the scripting languages most commonly used for professional games, learning the specific syntax and approaches of each language in the process. As part of their implementation, students will learn how to use the specific graphics, audio, interface, physics, and math APIs found in the scripting environments used. Students will survey concepts in space partitioning, particle systems, map editors, and other elements so that they are capable of creating working prototypes of 2D games.

Objectives and Outcomes
Upon successful completion of the course, students will learn:

- Foundational topics in programming interactive applications including simulations and games.
- Gaining programming experiences in AS3 and getting familiar with game engine architecture and design
- Ability to design and implement simple 2D games with special emphasis on:
    - Engine components
    - Basic collision-detection techniques and response
    - State machines
    - Applications of kinematics and dynamics in game physics
    - Particle systems
- Starting point for understanding technical literature and foundation for independent research related to game programming and development.
- Implementation of mathematical techniques including linear algebra.
- How to be more memory efficient by understanding the garbage collector behavior

Contact Information

Instructor:	Elie Abi Chahine
Office Hours:	Scheduling by appointment.
Email Address:	eabichahine@digipen.edu or echahine@digipen.edu
Course Home Page:	cs176f14.us at distance.digipen.edu/2014-fall (The website is accessible via student's DIT log-in credential)
Contact :	+425 629 5064

Section Day and Time Room

Section	Day and Time	Time	Room
CS176	Tuesday / Thursday	11:00pm – 12:20pm	DA VINCI

Textbook

- No textbook required

Reference (Optional)

- Programming ACTIONSCRIPT 3.0 (pdf given in class).
- Using ACTIONSCRIPT 3.0 Components (pdf given in class)
- Essential ActionScript 3.0, by Colin Moock; Published by O'Reilly Media / Adobe Dev Library, (ISBN: 0-596-52694-6)
- http://livedocs.adobe.com/flash/9.0/main/wwhelp/wwhimpl/js/html/wwhelp.htm

Course Materials

All course materials and activities, such as lecture notes, assignment, test practice, forums, announcements, calendar etc… will be available through distance.digipen.edu site.

Grading

Grades will be all derived from homework assignments and a final project. The detailed weightings and letter grades are as such:

Assignment 0	**Assigned Week 1**	**Due Week 2**	**10%**
Assignment 1	**Assigned Week 2**	**Due Week 3**	**10%**
Assignment 2	**Assigned Week 4**	**Due Week 5**	**10%**
Assignment 3	**Assigned Week 6**	**Due Week 7**	**10%**
Assignment 4	**Assigned Week 8**	**Due Week 9**	**10%**
Assignment 5	**Assigned Week 10**	**Due Week 11**	**10%**
Final Project	**Assigned Week 11**	**Due Week 14**	**40%**

Note: The above information is subject to change according to the pace of the class.

Grading Scale

A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D	60-69%
F	<59%

Late Policy

The due day/time will be published on the class website when each project is assigned.
No late submissions are allowed, you will get a zero grade if the assignment is not submitted before the due date.

Wildcards

Every student will have 2 wildcards. A wildcard will cost you 10% of your assignment grade and can be used for one of the options:

- get 2 extra days in order to continue working on the assignment
- the option to not comment an assignment
- the option to resubmit the assignment in the case of bad files naming or wrong files submitted

You will get an extra 2.5% on your final grade for every wildcard that you do not use.

Early Submission

You get bonus points for submitting the assignment before the due date (+3 points for every day). You need to get 80 or more on the assignment in order for those bonus points to be added.

Attendance is mandatory:

There are no makeup exams or quizzes. Also, for every lecture that is missed, you will lose two points from your final grade (e.g. a 90 becomes an 88). The only exceptions are if you notify me prior to your absence with a valid reason. (Sleeping, studying for another class, working on your game, etc., are not valid reasons for an absence.) Class participation will boost your grade if you are on the border. (e. g. It is possible to get an A- with an overall average of 88.5%)

Tentative Schedule (This is a guideline for the semester and is subject to change.)

Week	Topic
1	Recap on CS116 and CS175
2	GameState Manager, Input Manager, Object Manager and Collision Manager Recap
3	XML Manager
4	Tile-Based games
5-6	Tile-based collision
7-8	Simple Physics Manager
9-10	Particle Systems
11	Camera & HUD
12-14	**Final Project**
15	**END**

Workload

During the semester there will be several assignments and a final project. These are not very large assignments but require a good understanding of the topics covered in class. In addition to attending the lectures, you should plan to spend at least 8 hours per week reading, studying, and programming for this class.

Submitting Homework

Programming assignments will (obviously) use the Actionscript programming language. When submitting source files, you must adhere to the following guidelines: All files must be in a single ZIP archive (even if you are only submitting a single file). The name of the ZIP file must follow this naming convention:

<class_name>_<login>_<assignment number>.zip

For example, if a student with login name **`foo.bar`**, submits assignment #3 for course CS176, the appropriate filename would be **`cs176_foo.bar_3.zip`**. Do not put the course section number in the filename.

Note: The .zip file names are case-sensitive and must be in all lowercase, exactly as described above.

Disabled Student Services

If students have disabilities and will need formal accommodations in order to fully participate or effectively demonstration learning in this class, they should contact the Disability Support Services Office at (425)629-5015 or dss[at]digipen[dot]edu. The DSS Office welcomes the opportunity to meet with students to discuss how the accommodations will be implemented. Also, if you may need assistance in the event of an evacuation, please let the instructor know

Classroom Policy

Students are expected to behave professionally at all times with regards to classroom conduct and timely delivery of all assignments. Specific guidelines will accompany each assignment, along with a completion date. As this is mainly a learning environment, it is critical that the noise level remains at a minimum. Cell phones must be turned off at the beginning of class; cell phone use during class is not permitted. All work in this class must be retained until the end of the semester.

Academic Integrity Policy

Academic dishonesty in any form will not be tolerated in this course. Cheating, copying, plagiarizing, or any other form of academic dishonesty (including doing someone else's individual assignments) will result in, at the extreme minimum, a zero on the assignment in question, and could result in a failing grade in the course or even expulsion from DigiPen. Please keep in mind that discussing solutions to exams, quizzes, homework, etc. with students that haven't taken the exam or turned in the assignment is also prohibited. Ultimately, you are only wasting your time (and money) because if you can't master the fundamentals covered in this course, you have little hope of succeeding in other courses or as a programmer in the Real World.

From The "It-shouldn't-need-to-be-said-but…" Department

During class, all electronic devices must be turned OFF. This includes cell phones, pagers, PDAs, game consoles, digital cameras, laptop computers or any other devices. If you absolutely must have a cell phone on for an emergency situation, you must first clear it with me BEFORE class begins. In addition to showing up for class on time, other student responsibilities include proper behavior during class, learning the material, completing assignments correctly, submitting assignments properly and on time, studying for the exams, and participating in class by asking or answering questions during the lectures. Finally, all students are required to bring a pencil (or other writing instrument) and paper to class to take notes, quizzes, and perform other tasks.