CS 175: Scripting Languages

Contact Information
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Course Prerequisite(s): CS116 or CS120

Course Description
This course covers the concepts and implementation strategies for using high-level scripting languages in game development. Students will focus on object-oriented programming, high-level English like structure, speed of development, and ease of use. The course includes a survey of commercial languages, as well as proprietary scripting languages from industry applications. Students will examine the process of conceptualizing syntax for a game-based scripting language and examine how such a language is compiled and interpreted by a game engine. Using the syntax they have created, they will create a number of scripts that could be used in a game. Additionally, the class will cover such relevant topics as data-driven technology, modular coding, function calls, and procedures.

Learning outcomes
- Understanding and using an Object Oriented Programming Language
- Understand the use of objects and classes
- Exposure to engine architecture
- Apply the course concepts to implement various algorithms to solve problems in games
- Exposure to advanced topics in ActionScript

References (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.

Class schedule
Classes will be held in Al-Khwarizmi. The class schedule is as follows:
Tuesday: 10:00 am – 11:20 am
Thursday: 10:00 am – 11:20 am

Tentative Weekly breakdown of topics:

Week	Topic
1	Intro to CS175 + Recap on CS116
2	**Classes 1 –** Definition, Packages, Constructors, this keyword, attributes, etc
3	**Classes 2 –** public vs private variables, inheritance, linking classes to symbols, etc
4	**Classes 3 –** Overriding functions, Polymorphism, class attributes, etc
5	**Input Manager –** class for capturing user input
6	**Game State Manager –** class for controlling the game states
7	**Display Programming –** display lists, DisplayObjects **+** **ObjectManager –** class for managing all game objects (adding, updating, removing, etc...)
8 -10	**Box2D Physics Library**
11	**Particle Systems**
12 - 14	**Working on final project** **+** **Random topics:** • **More on Functions –** default parameters, variable arguments, function objects, nested functions, etc • **Working with embedded sound** • **More on Types –** type conversions, type checking, static types, etc

Workload
During the semester there will be several short quizzes and a final project. There will be several programming assignments to work on outside of class. These are not large and you will usually have one to two weeks to complete them (although they generally take no more than a few hours to complete). In addition to attending the lectures, you should plan to spend at least 6 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 CS175, the appropriate filename would be **cs175_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 all in lowercase, exactly as described above.

Grading
Grades will be derived from homework assignments and exams. The detailed weightings and letter grades are as such:

Breakdown:

- Assignments 60%
- Quizzes 10%
- Final project 30%

Grading Scale

A 93-100%
A- 90-92%
B+ 87-89%
B 83-86%
B- 80-82%
C+ 77-79%
C 73-76%
C- 68-72
D 60-67%
F <59%

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%)

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.

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.

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
Cheating, or academic dishonesty in any form, will not be tolerated in this course. Penalties for cheating may include receiving a zero on an assignment, or a failing grade in the course, or even expulsion from DigiPen. It is permissible to discuss assignments (not solutions) with other students in the class, but the solutions must be recognizably your own. For further details, please consult the DigiPen Academic Integrity Policy.

Disabled Student Services
Students with physical, psychological or learning disabilities that affect their ability to perform major life activities associated with this class may be eligible for reasonable accommodations under the Americans with Disabilities Act. If you have a documented disability please contact the Disability Support Services office to arrange for accommodations for this class.

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.