FILM6723 Games Arts III
Instructor: Professor Craig Caldwell, Ph.D. or Game Industry Professional
Email: craig.caldwell@utah.edu
Class Time: TH 6:00pm to 9:00pm
Class Location: Building #36, Gallery 9
Office: CIDAT 105A, 803-8668
Office Hr.: 2:30-3:30 (MW) and 4:30-5:30(TH)
Credit: 4 credit hours
No Pre-requisites
Web Site: http://fs.finearts.utah.edu/~ccaldwell
Grade Site: http://www.eClassInfo.com/home.asp?id=ccaldwell

BRIEF COURSE DESCRIPTION
Advanced studies in the production of video games. Production duties will be divided among team members specializing in art, code, or sound and will contribute to the collaborative creation of a video game. Video games present unique challenges for development, requiring interdisciplinary skill sets and efficient teamwork. Video games also present unique opportunities for building creative interactive art that is experienced.

COURSE CONTENT
Students from different disciplines will work together while creating an innovative multiplayer game. This will require development of skills in the following areas:

- Collaborative and independent work habits
- Conceptualizing and communicating
- Articulating constructive technical and aesthetic criticisms
- Prioritizing, delegating, and scheduling tasks among team members
- Building components and integrating them into larger systems
- Coding, illustrating, animating, sound engineering
- Testing, testing, testing, and testing

COURSE OBJECTIVES
Game Arts III is the third in a three-part sequence of the visual and temporal components that goes into game creation. The primary objective of this course is to give students the experience of working in a complex game development environment. This experience will illuminate the technical and artistic challenges that arise in the day-to-day event of making 3D games.

To this end the students will be working in Unity3D or Unreal game engines. This environment is a high-level game engine, with visual feedback and hierarchy organisation at its core. The key skills that students develop while working through this course offer a direct mapping to the skills needed when working in the proprietary game engines that they will encounter in industry. Students will develop skills in project management, file system organisation, asset optimisation, scripting with JavaScript in Unity3D and best practices for development of real-time visuals in games.

- Understanding of Project organization
- Command of File system structure
- Capabilities in using game engine (i.e. Unity, Unreal Engine etc.)
- Development expertise with the technical considerations for real-time visuals
- Setup and program simple animation state machines.
- Deal with level and terrain creation processes and considerations
COURSE METHODOLOGY

The instructor will ensure core members of a video game production team will be assembled for this course. Students will be introduced to techniques for game production and apply them to create a playable game. Production will progress from concept to prototype to playable game by the end of the course. Students will work in teams, complementing each other's skills by implementing different aspects of the game: code, art, and sound. The final game will be playable on the course arcade machine.

Examples will be given to illustrate various concepts and techniques, but students will learn primarily by creating, presenting, and discussing their own work. The class format will follow a general schedule of lecture, demonstration, class work, homework, presentation, critique, and discussion. Examples will be presented in lectures and demonstrations. Students will present their work in critique sessions, to facilitate discussion of their methods and results, and sharing of their findings.

Students will document all their work on individual web pages, which will be burned to CD-ROM by each team and turned in as part of the final project during finals week. Final games will be installed on the course arcade machine and posted on the course site. Game development teams will be credited by name.

Students are expected to work in groups as well as alone. The group projects represent an important part of the course in terms of encouraging and guiding students to contribute ideas, make decisions and to cooperate and communicate effectively with other team members. Additionally, the group projects provide an opportunity for students to enhance their professional skills in areas such as responsibility, flexibility and adaptability, and communicating effectively and harmoniously with colleagues.

ATTENDANCE AND CLASS PARTICIPATION:

Attendance is required at all lectures, tutorials, and studio classes. Class attendance is a part of the participation grade. Lack of attendance will lower the final grade.

COURSE EVALUATIONS METHODS AND CRITERIA

Evaluation will include written documents, images created, and visuals for the game. Quizzes may be given at anytime to test retention of previous weeks material.

- Assignments 90%, more details will be given for each assignment: Images, Storyboards and Animatics etc.
- Participation and Quizzes 10%

Grading Scale: 93-100% = A, 90-92% = A-, 87-89% = B+, 83-86% = B, 80-82% = B-, 77-79% = C+, 73-76% = C, 70-72% = C-, 67-69% = D+, 63-66% = D, 60-62% = D-, Below 60% = E

The above grading scheme weighs final course grades according to the following priorities:

Criteria:
"E" is given for an assignment that fails to meet the mechanical or conceptual requirements of university work. Mechanical requirements would be matters such as turn-in times, length of assignment, grammatical concerns, focus of assignment, etc. Conceptual matters would revolve around the comprehension of ideas and relationships between ideas.
"D" is given for work, which meets the requirements established, but demonstrates significant problems either in conceptual formation or mechanical limits.
"C" work is marked by timely completion of the assignment, demonstrating a solid grasp of the material. "C" work shows me that you understand the material under consideration. "C" is the standard grade, and all assignments are made with this in mind.
"B" work is marked by a timely completion of the assignment, demonstrating not only a grasp of the material under consideration, but the ability to synthesize the material rather than simply repeat what you have learned. "B" work goes beyond minimum requirements outlined in the assignment, and represents work, which is above average.
"A" work constitutes superior handling of the mechanical and conceptual material covered in class. Not only will "A" work synthesize materials covered, but will also demonstrate a very high degree of clarity in expression, and an ability to contextualize ideas, execute assignments, explore implications, and/or raise meaningful questions.
Responsibilities and Expectations

University Policies

1. The Americans with Disabilities Act: The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

2. The Drop/Withdrawal policy is available on the University’s website and from Student Services. Briefly, you may drop a course during the first seven calendar days of the semester and withdraw (with a “W”) during the next five days without tuition charges (last day to withdraw at all is in mid-October). After that, withdrawal is possible only “in cases of compelling non-academic emergencies” through petition to the dean of your college.

3. The Student Code spells out specific rights of students in the classroom (http://www.admin.utah.edu/ppmanual/8/8-10.html). The code also specifies proscribed conduct, including cheating on exams, collusion, and plagiarism. Plagiarism is submitting someone else’s work as your own as well as quoting others without giving credit. I do not tolerate plagiarism in any form. Students found guilty of plagiarism will receive an “E” for the course.

Course Policies

1. Course Material: Throughout this semester, we will be watching relevant clips and sections of games. Any instances of the above will be relevant and appropriate to class discussion and learning. If you do not feel as though you wish to view certain media you will have the option to request an accommodation. Most likely, you will be assigned alternate material to view or experience and comment upon.

2. Attendance: Students are expected to fully participate in the class. Attendance of lectures, participation in discussion, as well as completion of all assignments are expected, and required for satisfactory competition of the course. Registered students must attend class in the first days of class in order to retain their spots in class. Students who do not attend class in the first week will forfeit their positions and may be dropped from the class.

3. Webpage You will need to regularly check our WebCT page on-line throughout the semester. To do this, go to www.webct.utah.edu and type in your student ID and password. On this page you will find our syllabus, assignments, handouts, and other materials. Rarely will you receive paper assignments and handouts in class; while we will go over all assignments in class, you are responsible for the WebCT material and for printing it out if you want a hard copy or if it needs to be turned into the instructor. Also, the syllabus and course calendar are subject to change based on the needs of the class. I will inform you of any changes and you will be able to find the updated changes on the WebCT syllabus.

4. You will also be accessing clips from the web. You will need to view clips through a high-speed connection such as cable or DSL, so begin to think about where you can do this (home, school, city library). Computer access at school and most libraries is free, but you may need to sign-up for a computer or wait for access – plan ahead!

5. Due Dates Are Firm All work is to be completed by the dates given in the syllabus or on the dates we have agreed to as a class. Papers are due at the beginning of class on the due date. Papers and assignments etc., submitted after the beginning of class on the due date can be given credit, but docked 10% of the total possible points beginning that day and each day after that it is late. Failure to complete all graded assignments will result in a substantially lower course grade and may result in a failing grade for the course. Prior arrangement to take an exam early or to modify our presentation schedules is possible in cases of a documented University-related or medical scheduling conflict, and as tests are scheduled in advance and are posted on this syllabus, it is the student’s responsibility to inform the instructor of any arrangements that need to be made.

6. Your Current E-mail Address Each student is asked to update and maintain a current email address on the University website. This will allow me to send class or individual emails via WebCT regarding assignments, any cancelled classes, changes in schedule, and other notices of importance. To update or add your current email address, go to the Campus Information System site (https://gate.acs.utah.edu), sign on with your uNID and password, click “My Student Profile,” and finally click “Change Email.”
Weekly Outline

Week 1:
Intro to Unity (Lecture): An overview in how to get around the Unity3D editing package
File system vs. project layout, What goes where, What does what.
Readings/Ref: unity Basics.

Week 2-3:
Assets: Props, Getting Art Assets into Unity from Maya, Unit scale and co-ordinate systems
Textures and UV'ing refresher, Exporting vs. Saving, Management of your data.
Best practices in authoring content
Readings/Ref: unity Workflow; unity Assets;

Week 3-4:
Assets: Terrain, environment and the sky.
Readings/Ref: unity Workflow; unity Assets; unity Terrain;

Week 5-6:
Scripting in Unity3D part 1 (Lecture): A quick refresher on course programming,
Functions and Classes. Readings/Ref: unity Scripting; unity Scripting;

Week 7:
Scripting in Unity3D part 2 (Lecture): The hierarchy model
Controlling objects; Setting up cause and effect; Watching for events
Readings/Ref: unity Scripting; unity Scripting; unity Animation;

Week 8-9:
Animation (Lecture): Setting up a state machine
Activating states; Setting up transitions between states; Taking control of animations through script
Readings/Ref: unity Scripting; unity Scripting; unity Animation;

Week 10:
Lights and the Camera (Lecture): Setting up a lighting Rig for a scene.
Exploring the options available to the camera; The Camera as an equal player in the game.
Readings/Ref: unity Terrain; unity Scripting;

Week 11:
FX (Lecture): Materials effects, Particle effects, Sounds
Readings/Ref: unity Particle;

Week 12:
Optimisation (Lecture): Getting the most out of the scene.
Using instancing for better scene control.
Readings/Ref: unity Optim; unity Tips;

Week 13:
Physics (Lecture): Forces, Constraints, Interactions, Gameplay uses

Week 14-16:
Final Game: Presentation of Gameplay.

Assessment Details

Assessment is according to the criteria specific to each item. All student work is to be submitted for assessment on or before the due date, and submitted at beginning of class time.

Students are required to submit all assessment items to qualify for a passing grade. Extensions will only be granted on the provision of a medical certificate or a letter from the student counsellor.

5.1 Assessment Summary
This is a summary of the assessment in the course. For detailed information on each assessment, see below.

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<thead>
<tr>
<th>Assessment Task</th>
<th>Due Date</th>
<th>Weighting</th>
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<tr>
<td>Project Game Re-Skin</td>
<td>Week 4</td>
<td>25%</td>
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<tr>
<td>Project 3 Interactions</td>
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<tr>
<td>Project The three OB level, part1</td>
<td>Week 12</td>
<td>25%</td>
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<td>Project The three OB level, part2</td>
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<td>25%</td>
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Game Re-Skin
Type: Project
Due Date: Week 4
Weight: 25%
Task Description:
Students will research existing "looks" for their version of the game. Paying attention not to break the existing functionality of the example game, students will rebuild the existing temporary assets into a finished piece that shows off their intended vision.

Criteria & Marking:
- Technical competency 40%
- Clarity of expression 50%
- Strength of Research 10%

Submission: Using the dropbox folders

3 Interactions
Type: Project
Due Date: Week 8
Weight: 25%
Task Description:
Construct a minimal level that will act as a backdrop for three distinct interactive events.
Examples:
- Teleport: a glowing blue cube sits on the ground. When placing objects into the region of the cube a power-up animation sequence begins. The object dematerializes into a clucking chicken.
- Turret: a gun turret does a slow sweep of the area searching for any intruders. If the player walks into the turrets region of fire it will begin tracking their movement. Get too close and the turret will fire fish at the player. (did I mention it was a fish gun)
- Pickup: collect the key and open the chest to find a new key and a little chest. (a gem would be too easy)

Criteria & Marking:
- Technical competency 50%
- Aesthetics of the look 30%
- Originality of interactions 20%

Submission: Using the dropbox folders

The three OB level, part 1 & 2
Type: Project
Due Date: Week 12 and Week 16
Weight: 40%
Task Description:
Create a finished game level that contains an object, an objective and an obstacle. These three ob’s can chain together to create simple but engaging game play. At least one of each ob must be present.
Example:
- The exit (objective) is on the roof above a giant pit of floating lava (obstacle). Use the chicken and the bucket (both objects) to finish the level.
- The princess (objective) is behind a locked door guarded by the two eyed Cyclops (obstacle) that can only be defeated by glasses of blindness (object).
- The Zelda version, get the key (object), defeat the monster (obstacle), open the door (objective)

Criteria & Marking:
- Technical competency 35%
- Aesthetics of the look 35%
- Quality of Level Design 20%
- Communication to the player 10%

Late submissions:
All assessment items will incur a penalty of 15% per week off the total result for that item not turned in on due date. Unless otherwise stated in the individual assessment criteria, assessment items must be submitted to the dropbox on the due date so that files can be assessed.