

**CSCI-529A Advanced Game Projects**

**Units: 4-1**

**Term—Day—Time: Fall – Thursdays 3:30pm to 7pm, Lab  
2:30pm Thursdays**

**Location:** EGG-108

**Instructor: Michael Zyda & St John Colón**

**Office:** EGG-209

**Office Hours:** 2:30pm Thursdays

**Contact Info:** zyda@usc.edu, scolon@usc.edu,

**Teaching Assistant:**

**Office:** EGG-205

**Office Hours:**

**Contact Info:** [Fotos Frangoudes - frangoud@usc.edu](mailto:Fotos.Frangoudes@usc.edu)

**IT Help:** GamePipe Laboratory Manager

**Hours of Service:**

**Contact Info:**

## Course Description

CS-529a is the first semester of the two-semester advanced game project class. Students bring their individual talents as designers, programmers, artists, writers, composers, producers, etc. together in cross-disciplinary teams. Mentors from industry and the faculty are integrated into the process from the start. Teams that need 3D art assets have access to additional student resources from the CSCI 281 Pipelines for Games class.

The deliverables created during Fall semester are the foundation for materials to be polished in the Spring semester (CS-529B).

Four projects will be chosen by a rigorous selection process to be produced in this class. The final decision as to what games will be built will be decided by the instructors for the class.

The main course goal is to develop a playable demonstration of the core design and the approved scoped features for the game. This game should be installable, intuitive and functional so that a player can pick up and play.

## Deliverables

- Game Design Document (at the mid-term class)
- First Playable Game level exe
- Zipped project on server
- Installer (if applicable)
- Project Properly Organized on Server Directory
- Game Poster (must have screenshots of gameplay)
- 10 Screenshots: Focusing on different stages or features
- Gameplay Video/Trailer - edited with credits
- Marketing website
- Demo at USC GamePipe Game & Tech Showcase

**Prerequisite(s):** CSCI-5xx Advanced Game Development or CTIN-488 Game Design Workshop or equivalent or permission of instructor.

## In Class

During class, each individual on the team must be prepared to discuss his/her work from the previous week. The team leader and producer on the team will give each student (including themselves) a new individualized assignment for the coming week. All assignments will be posted in writing on the project Google Spreadsheet found on the course website. Assignments will come from the team leader with assistance/approval from the professors. The order of the team visits with the professor will be determined randomly each week. Teams must be prepared to present at the beginning of each class. The producer on the team owns the document and is required to have updated the document prior to class by canvassing the team for status updates. Students should use this class time to ensure they agree with the assignments, as performance on the goals is a key component of the final grade (see evaluation section below).

After visits by the instructors the teams will have group work sessions and the professors will be available to circulate and advise each project on specific issues.

Class attendance is mandatory. This time is invaluable for teams to meet together and work on their projects production. Failure to attend the entire class will impact the class grade (see attendance policy below). We cannot stress enough the importance of being in class and part of your team for the entire class session.

## Grading Breakdown

Mid-term Weekly Deliverables	25
Mid-term Deliverables	15
Final Weekly Deliverables	25
Final First Playable	25
Final Presentation	10
Total:	100

Mid-term and Final Project/Presentation evaluation will be based on how well a project realizes the goals the team has set out for itself and the project. Ultimately, this course exists to empower students to bring their vision onto the screen. The more you put into the project, the closer it will be to what was envisioned.

For the Weekly Deliverables, the results of the Google spreadsheet mentioned above will be a key input. The professors will evaluate both the amount of tasks fully completed on time and also the complexity of the tasks.

**CS-529A** Advanced Games has been graded for the last several years the same way: As a team of students working together to finish a custom video game project. This teaches self-reliance and gives students a much-needed exposure to working within a team. The student leader (or leaders) are the ones doling out specific weekly assignments to their teammates, who in turn are responsible to ensure the fairness of their given assignment. This endeavors to simulate a real-world working environment of problem-solving and teamwork.

### Rubrics:

Our Weekly Deliverable grading rubric is:

a) Online color-coded schedule sheet: green=1, yellow = .5, red = 0.

The total is divided by the number of weeks. Strictly: 90%+ = A, 80+=B, 70+=C, 60+=D, and lesser numbers are an F.

b) Then the grade is affected by the following non-quantifiable criteria, in order of importance:

- green-colored task difficulty and completion quality
- final product quality per milestone descriptions
- code quality
- perceived effort

This system was planned as a series of checks and balances: The Team Leader decides the direction and assignments (in tandem with the Producer if there is one) to each team member. However each team member is also personally responsible to scrutinize their assignments as fair, as well as if the current color-grading of the online schedule is reflective of their work. It is emphasized throughout class that individual team members will have explicitly agreed to their weekly assignments before the end of each class -- whether agreeing outright, or working with the Lead/Producer to have them modified during class. This online scheduling sheet was devised so no one feels surprised by his or her grade -- anyone can view its progress throughout the semester. Team Leaders can receive a bump in their grade as is commensurate to the added pressure of leading a team; this does not divorce them of the responsibility of doing their job well for a good grade.

Because of the custom setup for each project, it is impossible to dictate a structure that applies to each so sternly that we have a mathematical category for attitude, help, efficacy of code, importance within the project, foresight, insight, honesty, friendliness and many other amorphous qualities that are crucial to working within a team but divorced from coding. This same issue works within any team-project oriented classes, such as CS 526 Advanced Mobile Devices and Game Consoles class.

The most important feature of this class is that it empowers the students. This class is where final-year students are exposed to working on teams with each other, and saddled with needing both technical skill as well as the emotional maturity to work within that group and accept responsibility for their actions -- as is much more the case within the post-graduate workplace we are preparing students for.

The Final First Playable will be graded upon the following criteria:

**Assets**

Art	How good the game looks, or how effective the visual style is. Nice artwork, excellent generated or geometric graphics, compelling visual effects, etc.
Animation	How good the animation looks and feels. Nice response to user input, visually pleasing, compelling physics, etc.
Sound	How good the game sounds, or how effective the sound design is. A catchy soundtrack, suitable sound effects given the look, voice overs, etc.
UX/UI	Is the User interface clear and effective? Does the UI match and enhance the aesthetic of the game?

**Concept**

Innovation	What was the overall level of creativity? Did the game present the unexpected? Things in a unique combination, or something so different it's notable.
Mood	Storytelling, emotion, and the vibe you get while playing.
Mechanics[3]	Are the gameplay mechanics sound? Is the player sufficiently empowered? Are there sufficient choices? Does the game require skill? Are the challenges balanced?
UX	What is the overall quality of the User Experience? How well does the experience match the intended theme? Does the flow of the game feel good? Is the game fun?

**Game Design Doc**

Communication	Is the GDD clearly written, well-focused? Does it include high level goals?
Accuracy	Does the GDD include high level technical specifications? Are the core mechanics clearly defined?
Scope	Are all required assets defined? Is the creative and technical direction clear for assets? Is the scope reasonable?
Promotion	Did the team provide screenshots and a team poster? Were the titles and names in the credits accurate?

**Team**

Leadership	Did the leadership develop a clear method to organize the information, assets and tasks? Were they able to adjust to challenges and provide for the needs of the team? Was they effective in driving the project forward?
Production	Did the team make good use of time? Did they remain focused on the tasks and make changes when needed? Were they able to make revisions in the plan when needed?
Resources	Was the team able to gather variety of personnel and software resources? Were they able to continually revise resources based on changing needs?

Product            Was the team able to use their resources in a meaningful way to create an original product with accuracy, detail and polish? Did the final Product meet or exceed expectations?

**Attendance Policy**

Attendance in class is mandatory. We will take roll each week. Two unexcused absences lowers your grade one full point. Three unexcused absences lowers your grade two full points. Four unexcused absences - request to withdraw from the course (instructor's discretion). Excused absences are for: Illness (with doctor's verification), Family emergency, personal emergency (unavoidable car breakdown, etc.)

**Incompletes**

The only acceptable excuses for taking an incomplete in the course are personal illness or a family emergency. Students must inform the professor before the final project is due and present verifiable evidence in order for a make-up to be scheduled. Students who wish to take incompletes must also present documentation of the problem to the instructor or teaching assistant before final grades are due.

## Course Schedule

### Week 1 - Introduction/Overview

Overview of the course format and assignments.

Presentations from each of the team leaders

Prelim team assignments - e.g. individual rosters completed

Team work sessions

Team Assignment 1 - Industry Mentors: teams will be responsible for recruiting volunteer mentors from industry. Each team must recruit at least one technical mentor who is a hands-on coder. Teams may recruit other mentors at their discretion.

#### Online Reading

[Agile Project Management: Scrum – Mountangoat Software](https://www.mountangoatsoftware.com/agile/scrum/overview)

<https://www.mountangoatsoftware.com/agile/scrum/overview>

[http://www.gamasutra.com/view/feature/132121/top\\_10\\_pitfalls\\_using\\_scrum\\_.php](http://www.gamasutra.com/view/feature/132121/top_10_pitfalls_using_scrum_.php)

### Week 2 - Achieving First Playable, Part 1

Presentation/Discussion: Efficient game productions are built by iterating on early playable prototypes.

Teams will work in the early weeks of the course to achieve a first playable in whatever form best suits their project. Playtests for each game will be scheduled regularly starting in Week 3.

Team work sessions

#### Online Reading

Robin Hunicke, Marc LeBlanc, Robert Zubek - MDA: A Formal Approach to Game Design and Game Research  
—<http://www.cs.northwestern.edu/~hunicke/MDA.pdf>

### Week 3 - Achieving First Playable, Part 2

[Presentation/Discussion: Prototyping and playtesting are core competencies of game developers.](#)

[Team work session](#)

#### Online Reading

[Postmortem: Schizoid -](#)

[http://www.gamasutra.com/view/feature/3796/postmortem\\_torpex\\_games\\_schizoid.php](http://www.gamasutra.com/view/feature/3796/postmortem_torpex_games_schizoid.php)

### ~~Week 3 - Achieving First Playable, Part 2~~

~~[Presentation/Discussion: Prototyping and playtesting are core competencies of game developers.](#)~~

~~[Team work session](#)~~

#### ~~Online Reading~~

~~[Postmortem: Schizoid -](#)~~

~~[http://www.gamasutra.com/view/feature/3796/postmortem\\_torpex\\_games\\_schizoid.php](http://www.gamasutra.com/view/feature/3796/postmortem_torpex_games_schizoid.php)~~

### Week 4 - Game development

[Presentation/ Discussion: Best practices for VR, Mobile and Console development.](#)

[Team work sessions](#)

#### Online Reading

[VR:](#)

[http://www.gamasutra.com/view/feature/203438/best\\_practices\\_for\\_vr\\_from\\_seven\\_.php](http://www.gamasutra.com/view/feature/203438/best_practices_for_vr_from_seven_.php)

[http://www.gamasutra.com/blogs/SemenFrish/20160324/268862/Virtual\\_Reality\\_Tips\\_for\\_Engineers\\_and\\_Developers.php](http://www.gamasutra.com/blogs/SemenFrish/20160324/268862/Virtual_Reality_Tips_for_Engineers_and_Developers.php)

[http://www.gamasutra.com/view/feature/4102/a\\_new\\_attitude\\_to\\_game\\_.php?print=1](http://www.gamasutra.com/view/feature/4102/a_new_attitude_to_game_.php?print=1)

### Week 5 - The Power of a Diverse Group

[Presentation/Discussion: Groups that include diverse talents can achieve power far greater than that of any individual.](#)

[Team work session](#)

### **Online Reading**

Malcolm Gladwell - In the Air - Who Says Big Ideas Are Rare?

[http://www.newyorker.com/reporting/2008/05/12/080512fa\\_fact\\_gladwell](http://www.newyorker.com/reporting/2008/05/12/080512fa_fact_gladwell)

### **~~Week 4 – The Power of a Diverse Group~~**

~~Presentation/Discussion: Groups that include diverse talents can achieve power far greater than that of any individual.~~

~~Team work session~~

### **~~Online Reading~~**

~~Malcolm Gladwell - In the Air - Who Says Big Ideas Are Rare?~~

~~[http://www.newyorker.com/reporting/2008/05/12/080512fa\\_fact\\_gladwell](http://www.newyorker.com/reporting/2008/05/12/080512fa_fact_gladwell)~~

### **Week 5-6 – System Design**

Presentation/Discussion: Designing and implementing systems that convert high level ideas into gameplay.

Team work sessions

### **Online Reading**

The 13 Basic Principles of Gameplay Design:

[http://www.gamasutra.com/view/feature/132341/the\\_13\\_basic\\_principles\\_of\\_.php?print=1](http://www.gamasutra.com/view/feature/132341/the_13_basic_principles_of_.php?print=1)

The Craft of Game Systems: General Guidelines:

[http://www.gamasutra.com/view/news/128271/The\\_Craft\\_of\\_Game\\_Systems\\_General\\_Guidelines.php](http://www.gamasutra.com/view/news/128271/The_Craft_of_Game_Systems_General_Guidelines.php)

### **~~Why You Should Submit Your Game to Festivals~~**

~~Discussion of leading venues for submitting student projects. Examples include: Independent Games Festival, Indiecade, Penny Arcade Expo and other venues.~~

~~Team Work session~~

### **~~Online Reading~~**

~~[http://en.wikipedia.org/wiki/Independent\\_Games\\_Festival](http://en.wikipedia.org/wiki/Independent_Games_Festival)~~

~~<http://latimesblogs.latimes.com/technology/2009/08/indiecade-festival-los-angeles.html>~~

### **Week 6 – Narrative Architecture**

Presentation/Discussion: Does your game tell a story? There are many ways to think about story in games.

Team Work session

### **Online Reading**

Henry Jenkins – Game Design as Narrative Architecture –

<http://web.mit.edu/cms/People/henry3/games&narrative.html>

### **Week 7 - Team Building**

Discussion of the week's topic and online reading.

Team Work session

### **Online Reading**

Postmortem: Bioshock -

[http://www.gamasutra.com/view/feature/3774/postmortem\\_2k\\_boston2k\\_.php](http://www.gamasutra.com/view/feature/3774/postmortem_2k_boston2k_.php)

### **Week 8 - Why You Should Submit Your Game to Festivals**

Discussion of leading venues for submitting student projects. Examples include: Independent Games Festival, Indiecade, Penny Arcade Expo and other venues.

Team Work session

### **Online Reading**

[http://en.wikipedia.org/wiki/Independent\\_Games\\_Festival](http://en.wikipedia.org/wiki/Independent_Games_Festival)

<http://latimesblogs.latimes.com/technology/2009/08/indiecade-festival-los-angeles.html>

### **~~A Higher Standard~~**

~~Presentation/Discussion: Pushing boundaries with game design.~~

~~Team work session~~

### **Online Reading**

~~“A Higher Standard” — Game Designer Jonathan Blow Challenges Super Mario’s Gold Coins, “Unethical” MMO Design And Everything Else You May Hold Dear About Video Games –  
<http://multiplayerblog.mtv.com/2007/08/08/a-higher-standard-game-designer-jonathan-blow-challenges-super-marios-gold-coins-unethical-mmo-design-and-everything-else-you-may-hold-dear-about-video-games/>— more 134~~

### **Week 9 - Mid-term Deliverable and Class Evaluation**

Class discussion on how to make the class more efficient.

Team work session

#### **Mid-term Deliverable Due**

- Final Game Design Document
- Playable Game level exe
- Game Poster, v1
- 10 Screenshots: Focusing on different stages or features, v1

#### **Optional**

- Gameplay Video - edited, v1
- Marketing website, v1
- Mid-term Class Evaluation

#### **Online Reading**

<http://www.latimes.com/features/home/lat-10-things-you-dont-have-to-do-anymore-20110610,0,990965.htmlstory>

### **Week 10 - Usability and Measuring Fun**

Presentation/Discussion: How do you know if your game is accessible? Fun? The answer is: user testing.

Team work session

#### **Online Reading**

Ben Cousins - Measurement Techniques for Game Design -

[http://www.gamasutra.com/features/20050512/cousins\\_01.shtml](http://www.gamasutra.com/features/20050512/cousins_01.shtml)

### **Week 11 - Test Test Test**

Presentation/Discussion: Putting the player at the center of the design process: Playcentric design.

Team Work session

#### **Online Reading**

Postmortem: American McGee's Grimm -

[http://www.gamasutra.com/view/feature/3910/postmortem\\_american\\_mcgees\\_grimm.php](http://www.gamasutra.com/view/feature/3910/postmortem_american_mcgees_grimm.php)

[http://www.gamasutra.com/view/feature/3910/postmortem\\_american\\_mcgees\\_grimm.php](http://www.gamasutra.com/view/feature/3910/postmortem_american_mcgees_grimm.php)

### **Week 12 - Leveling and Game Design Psychology**

Presentation/Discussion: Building levels from your core mechanic

Team Work Session

#### **Online Reading**

Postmortem: MadStone -

[http://www.gamasutra.com/view/feature/3903/postmortem\\_riverman\\_medias\\_.php](http://www.gamasutra.com/view/feature/3903/postmortem_riverman_medias_.php)

### **Week 13 - Managing Chaos**

Discussion of the week's topic and online reading.

Team work session

#### **Online Reading**

Postmortem: Uncharted Drake's Fortune -

[http://www.gamasutra.com/view/feature/3809/postmortem\\_naughty\\_dogs\\_.php](http://www.gamasutra.com/view/feature/3809/postmortem_naughty_dogs_.php)

### **Week 14 - Thanksgiving Holiday - NO CLASS MEETING**

The instructors will be available for individual meetings during the first part of the week.

### **Week 15 - Student Project Presentations - Rehearsal for USC GamePipe Game & Tech Showcase**

#### **Final Deliverables Due**

- Final Playable Game level exe
- Zipped project on server
- Installer
- Project Properly Organized on Server Directory
- Game Poster (must have screenshots of gameplay)
- 10 Screenshots: Focusing on different stages or features
- Gameplay Video/Trailer - edited with credits
- Marketing website

#### **USC GamePipe Laboratory Game & Tech Showcase**

All students are required to present their work at the USC GamePipe Game & Tech Showcase event.

#### **Quality of Work / Scope of Work Expectations**

- Final First Playable Game level exe - we expect a playable game level that shows off the features of the game. The level must be working software - e.g. not a mockup. The level should include art assets appropriate for your project - such as sound, music, animation, a HUD. The focus should be on gameplay and not just game mechanics.
- Zipped project on server - we expect your game to be delivered in a zip file and posted on the Gamepipe server.
- Installer - you expect your game to come with an installer
- Project Properly Organized on Server Directory - we expect proper organization of your project using an online repository
- Game Poster (must have screenshots of gameplay) - we expect each team to produce a marketing-style game poster that tells the story and promotes the game. You are encouraged to hang them in the USC GamePipe Laboratory.
- 10 Screenshots: Focusing on different stages or features - the 10 screenshots should show off the key features of the game. These shots can be used for your website or personal portfolio.
- Gameplay Video - edited - we expect you to make a polished video showing off the game. The video will be used for marketing your game to festivals and for the GamePipe website. The videos should be a minimum of 2 minutes long and a maximum of 5 minutes long. Here is a breakdown of various ways to capture gameplay video: <http://www.pixelprospector.com/2010/08/how-to-record-and-edit-gameplay-videos/>
- Marketing website - we expect each team to create a marketing website for your game that incorporates all of the materials described above. The site can be used to market your game and yourselves.

## Resources

### Art Assistance

The GamePipe Pipelines class will build assets for the teams provided the teams are in need of 3D assets and follow some basic requirements. Here is an ideal schedule for integrating with the Pipelines class (note that this schedule may be adjusted slightly to fit the needs of the teams).

### AG (Advanced Games)

### PL (PipeLines)

#### First Semester

##### Week 1 - 7

Project game designs

Learn OAC

Approved Core Idea/Game Doc

Approved Engine

Approved Level Design

Maya skills

Learn OAC

##### Week 8 - 15

Core Idea Implemented

Engine Running

(At least) One fully playable level

Building Level

Building Props

#### Second Semester

##### Week 1 - 7

Proposed Future Levels

Interactive Stats Sheet

Feature Lock

Main Characters Modeled

Expanded Levels Placeholder

##### Week 8 - 15

Expanded Mechanics Playable

Expanded Levels Playable

Expanded Levels fully built

Main Characters Textured

### Team Meeting Room and Work Space

Each team has a private workspace in the USC GamePipe Laboratory.

## Statement on Academic Conduct and Support Systems

### Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu> or to the *Department of Public Safety* <http://adminopsnet.usc.edu/department/department-public-safety>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage <http://sarc.usc.edu> describes reporting options and other resources.

### Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* [http://sait.usc.edu/academicsupport/centerprograms/dsp/home\\_index.html](http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.