

Course Information

TECHNICAL ART I

Tuesday/Thursday 11a - 12:30p | DFA 4.106
Course website at <http://canvas.utexas.edu>

Instructor

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Office hours: Wednesday 12:00p - 1:30p in DFA 4.106

Catalog Description

An applied course focused on the technical aspects of game content creation.

Prerequisite(s)

Game Art Pipeline or demonstrable experience working with game assets.

Course materials

A computer capable of running Unity and Unreal engine. A 3 button mouse.

Objectives & Assessment

This course challenges students to find solutions to common technical problems which occur during game development. A role playing format will be used to simulate studio conditions. The instructor will play the part of Technical Lead and the students will serve as Technical Artists. Assignments in the form of technical challenges will be revealed throughout the semester. Students will research options, devise solutions and present their work using industry standards. In general, students will work individually, though small teams may be formed for some assignments.

Examples of tech art workflows for games:

- <https://www.artstation.com/artwork/3m9qD>
- https://www.youtube.com/watch?v=UNxOxiR5T_M
- <https://www.youtube.com/watch?v=wt2yYnBRD3U>
- <https://80.lv/articles/overwatch-technical-overview/>

By the end of the course, students should be able to:

- 1) Prototype simple interactions.
- 2) Create custom shaders.
- 3) Automate asset creation and modification.
- 4) Determine in-game content budgets and optimize performance.
- 5) Troubleshoot rendering problems and recommend best practices.
- 6) Port assets between different engines.

Grading

This course is project based. There will be no exams. Assignments are equally weighted toward 90% of the final class grade. The remaining 10% of the final grade is based on professionalism (see Professionalism below).

No late work will be accepted. No incompletes will be given. If you feel you will not be able to complete all work on time, you should ask the instructor for a grade of Q or drop before the deadline for doing so passes.

Grading breakdown:

Each assignment will be graded according the following rubric:

Clarity of solution: 40 points Quality of solution: 40 points Quality of presentation: 20 points

Final grades will be determined using the following grade distribution. Please note: to ensure fairness, all numbers are absolute, and will not be rounded up or down at any stage. Thus a B- will be inclusive of all scores of 80.000 through 83.999. The University does not recognize the grade of A+.

A = 94-100	B+ = 87-89	C+ = 77-79	D+ = 67-69	F = 0-60
A- = 90-93	B = 84-86	C = 74-76	D = 64-66	
	B- = 80-83	C- = 70-73	D- = 60-63	

Professionalism

Professionalism is expected of all students and includes attending class during scheduled meeting times, communicating clearly, respecting peers, and taking the class seriously. *Rolling into class 15 minutes late with a starbucks...while texting...on a skateboard...with earbuds blasting Kpop is NOT professional conduct.* However, if you catch the flu, get a flat tire, or otherwise cannot attend class, please contact

BOTH the instructor and TA, and attach any class work as needed. Please note 3 unexcused absences will lower your course grade by one letter.

UT Electronic Mail Notification Policy

Electronic mail (e-mail) is a mechanism for official University and instructor communication to students. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University- and course-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week.

It is the responsibility of every student to keep the University and instructor informed of changes in his or her official e-mail address (do so at https://utdirect.utexas.edu/utdirect/bio/address_change.WBX). Consequently, e-mail returned to the University with "User Unknown" is not an acceptable excuse for missed communication. Similarly, undeliverable messages returned because of a full inbox or use of a spam filter will be considered delivered without further action required of the University or instructor. (see <http://www.utexas.edu/cio/policies/university-electronic-mail-student-notification-policy>)

Use of Class Materials

The materials used in this class, including, but not limited to, exams, quizzes, and homework assignments are copyright protected works. Any unauthorized copying of the class materials is a violation of federal law and may result in disciplinary actions being taken against the student. Additionally, the sharing of class materials without the specific, express approval of the instructor may be a violation of the University's Student Honor Code and an act of academic dishonesty, which could result in further disciplinary action. This includes, among other things, uploading class materials to websites for the purpose of sharing those materials with other current or future students. (from <https://wikis.utexas.edu/display/coursematerials/Sample+Use+Statement+for+Syllabus>)

Religious Holidays

Section 51.911 of the Texas Education Code states that a student shall be excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. University policy requires students to notify each of their instructors at least fourteen days prior to the date they will be absent from scheduled classes to observe a religious holy day. (from http://www.utexas.edu/provost/policies/religious_holidays/1555_001.pdf)

Classroom Etiquette

Please observe the following rules during class as a courtesy to fellow students and the instructor.

- 1) *Be on time at the beginning of class.* If you must come in late at the beginning of class, please enter the room and seat yourself as quietly and unobtrusively as possible.
- 2) *Turn off your cell phone's notification sounds upon entering the classroom.* If you forget to do so, and your phone rings, chirps, or vibrates loudly during class, turn it off immediately and discreetly.
- 3) *Food is not allowed in class. Drinks in closed containers are permitted but must be kept on the floor or out of sight when not in use.*

Academic Integrity

The University's Honor Code states that "As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity." You are expected to maintain absolute integrity and a high standard of individual honor in scholastic work undertaken at the University. At a minimum, you should complete any assignments, exams, and other scholastic endeavors with the utmost honesty, which requires you to:

- acknowledge the contributions of other sources to your scholastic efforts;
- complete your assignments independently unless expressly authorized to seek or obtain assistance in preparing them;
- follow instructions for assignments and exams, and observe the standards of your academic discipline; and
- avoid engaging in any form of academic dishonesty on behalf of yourself or another student.

(adapted from http://deanofstudents.utexas.edu/sjs/acint_student.php)

Academic Dishonesty

In promoting a high standard of academic integrity, the University broadly defines academic dishonesty as including *any act designed to give an unfair or undeserved academic advantage*, such as:

- Cheating
- Plagiarism
- Unauthorized Collaboration / Collusion
- Falsifying Academic Records
- Misrepresenting Facts (e.g., providing false information to postpone an exam, obtain an extended deadline for an assignment, or even gain an unearned financial benefit)
- Multiple submissions (submitting the same assignment for two courses without authorization)
- Any other acts (or attempted acts) that violate the basic standard of academic integrity

(adapted from http://deanofstudents.utexas.edu/sjs/acadint_what_is.php)

Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University.

(from http://deanofstudents.utexas.edu/sjs/acint_faculty_syllabus.php)

Plagiarism	<p>"Plagiarism" includes, but is not limited to, the appropriation of, buying, receiving as a gift, or obtaining by any means material that is attributable in whole or in part to another source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one's own academic work being offered for credit or in conjunction with a program course requirement (from Sec. 11-402, http://catalog.utexas.edu/general-information/appendices/appendix-c/student-discipline-and-conduct).</p>
Copyright and Fair Use	<p>Understanding the basic principles of copyright and fair use is of critical importance to designers. Many of the uses we will make of texts, images, and videos this semester will be covered by the doctrine of fair use. However, as creators, you need to be aware of your own and other copyright holders' legal rights, and to properly identify and license your own and others' works. We will discuss these issues during the semester as needed, but when you have questions about whether or when you can appropriate someone else's work, a useful resource is Georgia K. Harper's Copyright Crash Course, available at http://copyright.lib.utexas.edu/.</p>
Services for Students with Disabilities (SSD)	<p>The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact Services for Students with Disabilities (512-471-6259, ssd@austin.utexas.edu, http://ddce.utexas.edu/disability/, or videophone 512-471-6644). Please provide documentation of your needs during the first week of class, if possible, so that I can make the necessary accommodations promptly.</p>
Student Support Services	<p>There are numerous free and/or low-cost support services available to students at UT. They include (but are not limited to) the following:</p> <p>Fine Arts Career Services (512-232-7333, utexas.edu/finearts/careers) provides a full range of services and resources to support students and alumni.</p> <p>The Undergraduate Writing Center (512-471-6222, uwc.utexas.edu) helps students with every phase of writing assignments for their courses.</p> <p>The Sanger Learning Center (512-471-3614, utexas.edu/ugs/slc) provides study skills, time-management, and note-taking courses.</p> <p>University Health Services (512-471-4955, healthyhorns.utexas.edu) provides medical and health promotion services for currently enrolled students and some non-students who are officially enrolled in certain University programs.</p> <p>The Counseling and Mental Health Center (512-471-3515, cmhc.utexas.edu) helps students with their personal concerns so that they can meet the daily challenges of student life.</p>
Emergency Procedures	<p>Mass e-mails (in addition to sirens and fire alarms, when appropriate) will be used to provide students, faculty, and staff with information regarding potential threats to the safety and security of the campus community. E-mails will also be used as a way to notify students, faculty, and staff of emergency situations and keep them updated on the situation. Emergency officials also have the ability to disseminate important information via text message directly to the cell phones of users subscribed to the service. Please consider subscribing to this service at https://utdirect.utexas.edu/apps/csas/text/main/. (adapted from http://www.utexas.edu/safety/preparedness/plans/EmergencyManagementPlan2013a.pdf)</p>
Campus Carry	<p>As permitted by Texas state law, the concealed carry of handguns by permit holders is generally allowed in outdoor areas, as well as buildings and spaces that are accessible to the public. Permit holders are allowed to carry in classrooms. It is the responsibility of concealed-carry license holders to carry their handguns on or about their person at all times while on campus. "About" the person means that a license holder may carry a holstered handgun in a backpack or handbag, but the backpack or handbag must be close enough that the license holder can grasp it without materially changing position. The holster must completely cover the trigger area and have enough tension to keep the gun in place if jostled. A license holder may not carry a partially or wholly visible handgun on campus premises or on any university driveway, street, sidewalk or walkway, parking lot, parking garage, or other parking area. The open carry of handguns is not permitted on campus. Anyone who sees an openly carried gun on campus should immediately call 911. (from https://campuscarry.utexas.edu/students)</p>
Overview of Schedule	<p>The course schedule may be adjusted to accommodate UT closures, instructor illness, student needs/interests, and other opportunities. Any significant alterations to the schedule will be announced in class and on Canvas.</p>

Course Schedule

T 22 Jan Syllabus, course overview
R 24 Jan Project 1 intro: interaction prototype

T 29 Jan Example project
R 31 Jan Demo as needed

T 5 Feb Studio time
R 7 Feb **Project 1 due**

T 12 Feb Review, Project 2 intro: custom shaders
R 14 Feb Studio time

T 19 Feb Demo as needed
R 21 Feb **Project 2 due**

T 26 Feb Review, Project 3 intro: automation
R 28 Feb Studio time

T 5 Mar Demo as needed
R 7 Mar Studio time

T 12 Mar Demo as needed
R 14 Mar **Project 3 due**

SPRING BREAK

T 26 Mar Review, Project 4 intro: rendering optimization
R 28 Mar Studio time

T 2 Apr Demo as needed
R 4 Apr **Project 4 due**

T 9 Apr Review, Project 5 intro: performance optimization
R 11 Apr Studio time

T 16 Apr Demo as needed
R 18 Apr **Project 5 due**

T 23 Apr Review, Project 6 intro: porting
R 25 Apr Studio time

T 30 Apr Demo as needed
R 2 May Studio time

T 7 May Demo as needed
R 9 May **Project 6 due**