

instructor

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text & software

required text

Tracy Fullerton. *Game Design Workshop: A Playcentric Approach to Creating Innovative Games, 3rd Edition*. CRC Press. 2014.

recommended software

If your team is using Unity, it is recommended you use the version below (there is an experimental Linux version and later versions will break compatibility).

Unity Personal Edition 5.1. Online: <http://unity3d.com>

You are required to use GitHub to manage your team project files. A graphical user interface is recommended:

SourceTree 2.1.3 or higher. Online: <https://www.sourcetreeapp.com>.

SmartGit 7.1.4 or higher. Online: <http://www.syntevo.com/smartgit/>.

In case you need the actual Git core:

Git 2.9.2 or higher. Online: <https://git-scm.com>

course description

In this course, we will learn to design, develop, and playtest games. This means we will **play**, but also work hard. The course is structured to use **team-based learning**; this means you will be responsible for the course material (reading) outside of class, but that we will spend most of class doing activities. We will build at least **three games** from scratch, one physical and two digital.

course outcomes

Students completing this course will be able to:

- Describe, analyze, and/or critique games with a consistent vocabulary.
- Design, develop, and playtest games.
- Understand the formal systems of games.
- Communicate game designs through demonstrations and presentations.

prerequisites

This course involves reading, designing, and coding, but has no prerequisites.

team-based learning

This is a team-based learning course. There will be **minimal lecturing, instead, we will undertake activities** that cover our outcomes. You will need to do **out-of-class reading** (with tests in class). As in the real world, in many cases, you will need to **work together to formulate goals and plans**.

You can expect that:

- You will be responsible for readings outside of class.
- There will be regular readiness assessments over the readings.
- There will be minimal lectures, mostly to answer your questions about readings, while students will present work.
- There will be a team project, with deliverables throughout the semester, that will take you from concept to completed and evaluated system.
- Most of class time will be spent working in groups on activities. Many of these are meant to engage you in creative thinking about how to build systems, and some will help you progress on your overarching team project.

policies

team composition

Teams will be formed after students have identified their interests through the micro proposal assignment. **Teams must consist entirely of either graduate students or undergraduates**; this segregation is necessary because the graduate curriculum is different.

code

This course does not have a required programming language, but we will use Unity in class. **It is assumed students are competent in at least one language.** Because your instructor and/or TA may not be proficient in your chosen language, you must make your code as clear as possible! It must be styled appropriately (use liberal whitespace, use appropriate indentation, etc.) and should be extensively, but not excessively, documented. Failure to do so is grounds for losing points.

Note that we will use GitHub to manage and share code.

reading / quizzes

You are responsible for reading all materials prior to class. There are readiness assessment tests scheduled throughout the semester over specified chapters. These tests are multiple choice and are first taken individually, then the same test is taken again as a team. There are no lectures over the test material.

attendance / class participation

Attendance is expected at every class, unless the class is released to work on class projects. Students should be present physically and mentally, asking questions, discussing, and not otherwise engaged (in a device). A student with more than one unexcused absence or who clearly does not engage will lose points from the attendance component of his/her grade.

assignments

Students are expected to turn in assignments before class on the day specified in the assignment, as specified in the assignment description (usually via Canvas). Frequently, this constraint is a logistics issue, as students will present work in class. Late work will be accepted, but with a 10% penalty per day late (or 20% per class day, if the work is presented in class). Encounters cannot be turned in late, but students select which assignments they will turn in (see below).

Graduate student assignments may have modifications from the base undergraduate assignments (generally there is more to do).

You will be working with a team most of the semester, and team activities will make up most of your grade. **Students are only eligible for the team portion of the grade if they earn at least 70% of their individual grade.** This measure is intended to ensure that each student pulls his/her own weight within the team.

[play] activities / gamification

This is a gamified course, so you have a **choice** in what work you want to do, and, to a certain degree, how much. To “win” class you need to accumulate 1,000 points (for 100%). You might do only a few assignments, put in a lot of energy, and do well; you might do many assignments quickly; you might opt out of some assignments. You accumulate points in three main categories: *essentials*, *team game sequence*, and *encounters*; in each of these categories, the maximum number of points you can accumulate is shown on Point Values by Category table as well as on the Point Values by Assignment table (the values are slightly different for 477 and 579).

grading

Your rubric depends on whether you are taking the graduate course (CS 579) or the undergraduate one (CS 477). Most activities are graded on a team basis; individually assessed items are starred.

You can mix and match encounters, up to the maximums, and, to a limited degree, use this to shore up the other sections. Note that on the Point Values by Category table, the maximum points are greater than 1,000; this means that some categories can shore up others. Additional assignments can also be submit-

ted for additional points, up to the maximum turn ins specified on table Encounter Point Values.

encounters

In the encounters section, there are more points *available* than are *scorable*. This means that you can pick and choose what exercises you undertake. This also means that if you do poorly on an exercise, you can undertake another to make up the points. However, you should note the maximums for each category: you **cannot earn more than that value in each category**. This frequently becomes a problem near the end of the semester, when students begin to hit the maximum on exercises.

encounter exercises

Encounter exercises come from the textbook: every chapter includes exercises. Each exercise, with the exception of **Exercise 1.4 on page 10, the Game Journal**, can be completed **once**. The **Game Journal may be completed once per week**. Complete an exercise satisfactorily and you will receive credit for it. Note that we will do some exercises in class, either individually or in teams. You can write these up for encounter exercise points. Also note that some exercises rely on earlier exercises; if this is the case, you must do the earlier exercise first.

You may **turn in no more than two encounter exercises per week, starting with week 3**. This means you need to be strategic. The schedule shows when exercises are due and how many turn ins remain at each week in the semester.

The intent is for all exercises to be treated with approximately equal weight. Generally, this means a **minimum** of three paragraphs and about 30–60 minutes of work. If the exercise matches some component of the chapter, then you should produce about the same level of work as the chapter. Some exercises require substantial additional work and are thus **bosses** (worth extra points and turned in at special times). Players get an additional boss first-player bonus for being the first to complete the boss. The following rules govern boss exercises and the boss first-player bonus exercise:

- A boss takes more than 60 minutes of actually executing a task, exclud-

encounter point values

encounter	max. pts.	turn ins
normal exercise	15	24
boss exercise	30	3
boss 1st player bonus	+15	(3)
Unity tutorial	10	1
Unity tutorial ext.	40	1
phys. game	50	2
playtest		

grade conversion

grade	points	%
A	1,000 – 941	100%
A-	940 – 871	94%
B+	870 – 841	87%
B	840 – 801	84%
B-	800 – 771	80%
C+	770 – 741	77%
C	740 – 701	74%
C-	700 – 671	70%
D	670 – 601	67%
F	600 – 0	<60%

point values by category

course →	477	579
maximum points	1,015	1,015
total essentials	250	250
total team game seq.	390	490
max. scorable encounters	375	275

point values by assignment

course →	477	579
readiness assessment*	100	100
team readiness assessment	100	100
attendance*	50	50
total essentials	250	250
micro proposal*	10	10
concept sketch	20	20
lightning game	40	40
non-digital prototype	20	20
functional prototype v1	50	50
FP v1 playtest report	30	30
FP v2	150	100
FP v2 playtest rep.	-	20
complete game	-	130
demo & presentation	50	50
peer review	20	20
total team game seq.	390	490
exercise maximum (incl. bosses)*	225	120
Unity tutorial*	10	10
Unity tutorial extension*	40	40
physical game*	100	100
physical game playtest rep.*	100	100
max. scorable encounters	375	275
max. available encounters	475	370

* Assessed individually; others are graded as a team.

ing write-up / documentation.

- To claim a new boss (and attempt the first-player bonus), your assignment must include a short assessment of how you used your time. If you can show that the assignment legitimately took that amount of time (and not that you were just very slow) and the description of the assignment backs up your claim, then you get the bonus and the assignment gets classified as a boss for future students (who can then simply do the assignment as a boss).

- The boss first-player bonus goes to the first student to complete a particular exercise as a boss **and** provide documentation; this is determined by the Canvas submission time of the **most recent** document.
- You must have completed and turned in an assignment to claim the boss first-player bonus.
- The professor and TA reserve the right to identify abuse of this system; abusers are not eligible for bonuses.

examples of scoring

Here are a few examples of scoring in the class. Each example is a student who does well, but may not get the maximum score for everything attempted.

Rochelle, an undergrad, does well on her readiness assessment (223/250 essentials) and her team manages all of the points for the team game sequence (390/390). For her encounters, Rochelle does 10 exercises, all 3 bosses, the Unity tutorial extension, the physical game, and one of the physical game playtest reports. She skips doing the Unity tutorial. For her exercises, she does not do well (98 points out of a possible 150). She fails one boss attempt, getting only 15 points, but gets a first-player bonus on another, making up the points (90/90). Rochelle earns an A in the class by accumulating 946 points in the class.

Mark is an undergrad. He does somewhat poorly on his readiness assessment (192/250 essentials) and his team loses points on their concept sketch, FP v1 playtest report, and presentation (245/390). Mark choses not to do a physical game or the playtest, but focuses on game journals and bosses. He manages to get all of his bosses with a first person bonus and, although he does every game journal he can, he hits the cap for the exercise maximum (225 for bosses and other exercises). He manages a B in the course by accumulating 812 points.

Lucas is a graduate student. He completely fails all of his readiness assessments, although his team readiness assessments are better (162/250 total essentials). His team also does well on the project sequence (462/490). He completes a few exercises and does all of his bosses. He skips all of the Unity tutorial materials. He makes his physical game, but finds that, after the first playtest report, he is near

the maximum scorable encounters for graduate students (275), so choses to leave his encounter score at 270. Lucas gets an A- in the class with 894 points.

ex: Rochelle (undergrad)

assignment	#	score
total essentials		223
total team game seq.		390
exercises	10	98
bosses	3	45
Unity tutorial	0	0
Unity tutorial extension	1	40
physical game	1	100
phys. game playtest rep.	1	50
total encounters		333
TOTAL		946

ex: Mark (undergrad)

assignment	#	score
total essentials		192
total team game seq.		345
exercises	22	90
bosses	3	135
Unity tutorial	1	10
Unity tutorial extension	1	40
physical game	0	0
phys. game playtest rep.	0	0
total encounters		275
TOTAL		812

ex: Lucas (grad)

assignment	#	score
total essentials		162
total team game seq.		462
exercises	2	30
bosses	3	90
Unity tutorial	0	0
Unity tutorial extension	0	0
physical game	1	100
phys. game playtest rep.	1	50
total encounters		270
TOTAL		894

TENTATIVE schedule (starred items are individual)

date	activity (notes)	due 477	due 579	rec. reading	ex. turn-ins (max. rem.)
8/19	F class intro; self intro; SissyFight exercise (play, redesign, test)				0 (24)
8/26	F MDA lecture; version control lecture; micro-proposal presentations; form teams; choose team board game	← micro-proposal* → ← setup accounts* →		ch 1, 2	0 (24)
9/2	F Readiness Assessment: ch 1–3, 6; play board games and discuss (+ game event in SH 124 @ 10:30am; prof @ CSCW PC meeting)	← readiness assessment → ← read instructions for board game* →		ch 3, 6	2 (22)
9/9	F modify example prototypes (ex 7.1, 7.2, 7.3, or 7.4); develop physical game concept (ch 6 ex)	← setup repository → ← boss exercise 1 (optional) →		ch 7, 8	2 (20)
9/16	F make physical games	← Unity tutorial →		ch 9	2 (18)
9/23	F RA: ch 7–9; discuss Unity	← RA →		ch 4, 5	2 (16)
9/30	F present concept sketch v1; discuss Unity	← concept sketch v1 → ← schedule →		ch 14	2 (14)
10/7	F RA: ch 4, 5, 14; develop non-digital prototypes	← RA → ← concept sketch v2 →			2 (12)
10/14	F present lightning games (+ game event in SH 124 at 10:30am)	← lightning game →			2 (10)
10/21	F play and critique physical games (prof. @ CHI PLAY)	← physical game → ← Unity tutorial extension → ← boss exercise 2 (optional) →		ch 10	2 (8)
10/28	F play and critique non-digital prototypes	← physical game playtest report* → ← non-digital prototype →		ch 11	2 (6)
11/4	F RA: ch 10, 11; play 579 functional prototype 1 (+ game event in SH 124 at 10:30am)	RA	RA functional prototype v1		2 (4)
11/11	F play 477 functional prototype 1; game research lectures	FP v1	FP v1 playtest rep.	ch 12, 13	2 (2)
11/18	F play 579 functional prototype 2; play Us vs. It (game balance practice)	FP v1 playtest rep. boss exercise 3 (optional)	FP v2 boss exercise 3 (optional)	ch 15	2 (0)
11/25	F Thanksgiving Holiday				(0)
12/2	F RA: ch 12, 13, 15, 16; re-play board games and discuss (+ game event in SH 124 at 10:30am)		← RA →	ch 16	(0)
12/9	F present final demos and post-mortems (in final exam slot, 1:00pm–3:00pm)	final demo, FP v2, post-mortem	final demo, FP v2 playtest rep., comp. game, post-		(0)
12/12	M [final due date; no class meeting]		← peer review* →		(0)

university policies

academic misconduct

Academic and non-academic misconduct: The Student Code of Conduct defines academic misconduct, non-academic misconduct and the consequences or penalties for each. The Student Code of Conduct is available in the NMSU Student Handbook online:

<http://studenthandbook.nmsu.edu/>

Academic misconduct is explained here:

<http://studenthandbook.nmsu.edu/student-code-of-conduct/academic-misconduct/>

As programmers, reuse is an essential part of our work. You are welcome to use existing libraries and reuse your own code, but must make certain to appropriately document and provide licenses. You must adhere to any licensing terms and are responsible for any fees for software you choose to license.

discrimination and disability accommodation

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA) covers issues relating to disability and accommodations. If a student has questions or needs an accommodation in the classroom (all medical information is treated confidentially), contact:

Trudy Luken, Director

Student Accessibility Services (SAS)

Corbett Center Student Union, Rm. 208

Contact: (575) 646-6840, sas@nmsu.edu, <http://sas.nmsu.edu/>

NMSU policy prohibits discrimination on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex, sexual orientation, spousal affiliation and protected veterans status.

Furthermore, Title IX prohibits sex discrimination to include sexual misconduct: sexual violence (sexual assault, rape), sexual harassment and retaliation.

For more information on discrimination issues, Title IX, Campus SaVE Act, NMSU Policy Chapter 3.25, NMSU's complaint process, or to file a complaint contact:

Lauri Millot

Title IX Coordinator

Agustin Diaz

Title IX Deputy Coordinator

Office of Institutional Equity (OIE)

O'Loughlin House, 1130 University Avenue

Contact: (575) 646-3635, equity@nmsu.edu, <http://eeo.nmsu.edu/>

Other NMSU Resources:

NMSU Police Department: 575-646-3311, <http://www.nmsupolice.com>

NMSU Police Victim Services: 575-646-3424

NMSU Counseling Center: 575-646-2731

NMSU Dean of Students: 575-646-1722

For Any On-campus Emergencies: 911