Syllabus - Digital Game Design

CS 477 / 517 (Fa. 2020) F 12:30pm–3:00pm [online]
Prof. Z O. Toups

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Prof. Z O. Dugas Toups

instructor

Z O. Dugas Toups

z@cs.nmsu.edu; 575-646-1605

office hours: ???–??? & by appt.; [online]

teaching assistant

Michelle Cormier

office hours:

text & software

required text

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

required software access — paid, but provided

We will use Lexaloffle's PICO-8 to develop games. A license key will be provided to you, paid for by the NMSU CS Department, once we have confirmed class registration.

Lexaloffle Games LLP. *PICO-8 0.2.0*. 2014. Online: https://www.lexaloffle.com/pico-8.php.

We will use Board Game Arena, an online service, to play board games together. A key for one month of premium access will be provided to you, paid for by the NMSU CS Department, once we have confirmed class registration.

AD2G Studio. *Board Game Arena*. 2010. Online: https://boardgamearena.com/welcome

required software access — free, but on your own

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

GitHub Desktop. Online: https://desktop.github.com.

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 (unlikely):

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

Note that using the web interface at GitHub.com is **NOT** allowed! You will need a client!

Fall 2020 is online

For fall 2020, we will be entirely online and synchronous. We will have Zoom meetings scheduled for our class periods, as well as labs. I will record all sessions, which will be accessible via the Zoom section of Canvas. Note that labs are primarily (but not always) for you to have time to work with your team; we will have a few sessions where work is presented in lab time (see the syllabus).

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. You will build multiple games.

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, it requires a C or better in CS 371 or consent of the instructor.

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**. 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 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.

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policies

team composition

Teams will be formed randomly and only after students have identified their interests through the micro proposal assignment. We will use a process in which students are assigned to teams, and then discuss whether the team members are compatible (primarily with regards to coordination structure and time), then reassign as needed. **Teams will consist entirely of either graduate students or undergraduates**; this separation is necessary because the graduate curriculum is different.

code

This course is structured around using PICO-8, with its variant of Lua. **It is assumed students are competent in at least one language.** You must make your code as clear as possible! It must be styled appropriately (use whitespace, 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

You are responsible for reading all materials prior to class.

attendance / class participation

Attendance is expected at every class, unless the class is released to work on class projects, in which case, students should meet with their groups (or make other arrangements for another time). Students should be present physically and mentally, asking questions, discussing, and not otherwise engaged (in a device).

assignments

Assignments are due as specified in the assignment description (via Canvas). Frequently, assignments are due by midnight before class – this constraint is a logistics issue, as students will present work in class. Late work will be accepted any time for excused reasons (simply email the professor) for most assignments (if not, this is noted in the assignment); for unexcused delays there is a 10% penalty per day late, or 20% per class day, if the work is to be presented in class.

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; 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 their own weight within the team.

names and pronouns

The professor will gladly honor your request to address you by whatever name and pronouns with which you identify; students are expected to respect this as well. New Mexico State University also offers the following official policy:

NMSU ARP 3.39: "New Mexico State University recognizes that for a variety of reasons, individuals may prefer to use a name that is different from their legal name to identify themselves. A preferred name reflects the manner in which an individual wishes to be addressed by faculty, staff, students, co-workers and the public. NMSU's rule on preferred names covers first and middle names; surnames may only be changed with a legal name change."

A preferred name can be set at https://my.nmsu.edu in the Personal Information section ("Updated Preferred First Name"). Changing a preferred name propagates to class rosters in Canvas, among other systems. More information about the policy can be found in the Administrative Rules and Procedures: https://arp.nmsu.edu/3-39/.

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 appropriate document and provide licenses. You must adhere to any licensing terms and are responsible for any fees for software you choose to license. In addition to any terms specified in licenses, you **must** report any reused code in the README.md file for any project you develop.

discrimination and disability accommodation

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADA) 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:

Main Campus
Student Accessibility Services (SAS)

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Corbett Center Student Union Room 208
Trudy Luken, Director
575-646-6840
sas@nmsu.edu

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Title IX prohibits sex harassment, sexual assault, intimate partner violence, stalking and retaliation. For more information on discrimination or Title IX, or to file a complaint contact:

Laura Castille, Executive Director and Title IX Coordinator
Office of Institutional Equity (OIE) – O'Loughlin House, 1130 University Avenue
Phone: (575) 646-3635
E-mail: equity@nmsu.edu
Website: http://equity.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

[play] activities / gamification

The maximum points available (105%) exceeds the minimum points necessary to get an A (93.5%). This means that you can opt out of certain activities if you so choose, or do additional activities to shore up lost points.

Your rubric depends on whether you are taking the graduate course (CS 517) or the undergraduate one (CS 477). Most activities are graded on a team basis either your project team (pt) or an alternate team (alt/t); some are individual (i).

The **Game Journal exercise (based on exercise 1.4 in the book)** is to be turned in multiple times. Note that we will do some of the other book exercises in class, either individually or in teams. **You can write these up individually for game journal points.**

You may **turn in no more than two game journals per week, starting with week 3 and there are 18 turn-ins during the semester**. 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.

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477 point values by assignment

essentials (i/pt)	12%		
essentials - total:	↳		12%
micro proposal (i)	4%		
PICO-8 logo (pt)	3%		
concept sketch (pt)	5%		
burndown chart (pt)	5%		
lightning game (pt)	7%		
functional prototype v1 (pt)	5%		
FP v1 playtest report (pt)	5%		
FP v2 (pt)	10%		
final demo (FP v2) & presentation (pt)	10%		
peer review (i)	5%		
team game sequence - total:	↳		59%
game journal (2% each) (i) - UP TO:	30%		
hello PICO-8 (i)	4%		
physical game (alt/t)	5%		
physical game playtest rep. (i)	5%		
individual work - total:	↳		44%
grand total possible	→		115%

517 point values by assignment

essentials (i/pt)	12%		
essentials - total:	↳		12%
micro proposal (i)	4%		
concept sketch (pt)	5%		
burndown chart (pt)	5%		
lightning game (pt)	7%		
functional prototype v1 (pt)	5%		
FP v1 playtest report (pt)	5%		
FP v2 (pt)	10%		
↰ choose one path below ↳			
FP v2 playtest rep. (pt)	research video (pt)	4%	
FP v3 (pt)	research abstract (pt)	5%	
final demo (FP v3) & presentation (pt)	final demo (FP v2) & presentation (pt)	10%	
peer review (i)	peer review (i)	5%	
team game sequence - total:	↳		65%
game journal (2% each) (i) - UP TO:	20%		
hello PICO-8 (i)	4%		
physical game (alt/t)	5%		
physical game playtest rep. (i)	5%		
individual work - total:	↳		34%
grand total possible	→		111%

(i) individual assignment

(pt) project team

(alt/t) alternate teams

grade conversion

grade	%	grade	%
A	100%	C+	77%
A-	94%	C	74%
B+	87%	C-	70%
B	84%	D	67%
B-	80%	F	<60%

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TENTATIVE schedule

date		class-time activity (notes)	[(i) individual assignment / (pt) project team / (alt/t) alternate teams]		rec. reading	GJ turn-ins (max. rem.)
			due 477	due 517		
8/21	Fri	professor: introduction & syllabus; students: self-introductions; professor & students: MDA introduction & what are games? lecture / discussion				0 (18)
8/27	Thu	[assignments due]	← setup accounts (attendance) (i), → ← hello PICO-8 (i) →			
8/28	Fri	professor / students: commercial game video and discussion; professor / students: Let's Make in PICO-8			ch 1, 2	0 (18)
9/3	Thu	[assignment due]	← micro proposal (i) →			
9/4	Fri	professor / students: commercial game video and discussion; students: present micro-proposals; professor: randomize initial teams; students: troubleshoot team composition; professor: reform teams as needed; teams: choose team board game from Board Game Arena	← board game selection (attendance) (pt) →		ch 3, 6	2 (16)
9/10	Thu	[assignment due]	← read instructions for board game (attendance) (i); → ← declare intent to team on physical game (attendance) (i) →			
9/11	Fri	!!! activate your Board Game Arena access code !!!				
9/11	Fri	teams: play board games within teams and discuss			ch 7	2 (14)
9/18	Fri	professor / students: commercial game video and discussion; professor: version control lecture; professor: basics of research lecture; alt/teams: develop physical game concept (ch 6 ex)	← setup team technologies (attendance) (pt) → ← setup repository (attendance) (pt) →		ch 8	2 (12)
9/24	Thu	[assignment due]	← PICO-8 logo (pt) →			
9/25	Fri	professor / students: commercial game video and discussion; teams: show off PICO-8 logo; professor / students: Let's Make in PICO-8			ch 9	2 (10)
10/1	Thu	[assignment due]	← concept sketch v1 (pt); → ← concept sketch v1 presentation (pt); → ← initial burndown chart (pt) →			
10/2	Fri	teams: present concept sketch v1			ch 4, 5	2 (8)
10/8	Thu	[assignment due]	← physical game (alt/t) →			

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date		class-time activity (notes)	[(i) individual assignment / (pt) project team / (alt/t) alternate teams]		rec. reading	GJ turn-ins (max. rem.)
			due 477	due 517		
10/9	Fri	teams: re-play team board games and discuss			ch 14	2 (6)
10/11	Sun	!!! Board Game Arena access ending !!!				
10/15	Thu	[assignment due]	← concept sketch v2 (pt); → ← concept sketch v2 presentation (pt) →			
10/16	Fri	professor / students: commercial game video and discussion; teams: present concept sketch v2			ch 10	2 (4)
10/22	Thu	[assignment due]	lightning game, burndown chart check 1	functional prototype v1, lightning game; burndown chart check 1		
10/23	Fri	professor / students: commercial game video and discussion; present lightning games			ch 11	2 (2)
10/30	Fri	professor / students: commercial game video and discussion; students: play and critique physical games	← physical game playtest report (i) →			2 (0)
11/6	Fri	professor / students: commercial game video and discussion; professor: game research lecture(s)				(0)
11/13	Fri	teams: present functional prototype 1; students / professor: play functional prototype 1	functional prototype v1	FP v1 playtest rep.	ch 12; 13	(0)
11/20	Fri	teams (517): present functional prototype 2; students / professor: play 517 functional prototype 2; teams: play Us vs. It (game balance practice)	FP v1 playtest rep.; burndown chart check 2	FP v2; burndown chart check 2	ch 15	(0)
11/27	Fri	Thanksgiving Holiday				(0)
12/4	Fri	professor / students: commercial game video and discussion; professor / students: Let's Make in PICO-8			ch 16	(0)
12/11	Fri	**teams: present final demos and post-mortems** (in **final exam slot, 10:30am–12:30pm**)	final demo & presentation; FP v2	final demo & presentation; [FP v2 playtest rep. & FP v3]; ~ OR ~ [research video & research abstracts]		(0)
12/13	Sun	[final due date; no class meeting]	← peer review*; → ← showcase decision (bonus game journal)* → ← burndown chart check 3 →			(0)