

GAM 420: Creative Computation

Fall 2018/2019

Wed, 5:45 PM—9:00 PM

Daley Building, Rm 212

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Overview

Students are introduced to the affordances of computers and digital technology as a medium using foundational texts from the discipline of digital media while being introduced to programming. The course teaches students to discover how to effectively and creatively communicate their ideas using accessible coding environments and engines and challenges them to build playful, interactive applications.

Course Description

Computers have dramatically reshaped the way we live, think, socialize, and experience our world. Artists have a vast range of new tools to work with, and they have an important role in understanding and critically interrogating computer culture. This course provides an introduction for artists interested in working with new media. It highlights the affordances of the medium, explores a range of design tools, and interrogates some of the major topics that are at stake.

Our focus will be on an important analogy for the development of computation and new media: that computers are like people. Unlike other kinds of machines, computers remember, they calculate, they make decisions, and they interact. These qualities have raised philosophical questions about the nature of thought and feeling, ethical questions about privacy and the rights of artificial beings, and political questions about new forms of social organizing. Each week we will read classic texts of media studies that touch on these issues alongside essays from fields such as psychology, cognitive science, phenomenology and psychoanalysis that describe what it is like to be a thinking, feeling being. We will draw on these theories to create our own media interventions—using game design software to construct models of emotion, and to write more complex and compelling characters. This course will teach students how media practitioners have woven together theory and practice in the past, and open up new horizons for exploration in the present.

Objectives

By the end of the quarter, you will be able to:

- Interpret and discuss foundational theoretical texts of digital media.
- Identify the medium specific qualities of computers and how they have been used for artistic purposes, such as communicating ideas or evoking emotions.
- Brainstorm original games that make use of computational affordances and transform constraints into meaningful and productive prompts.
- Employ foundational skills of game design, such as drawing sprites, writing branching narratives, and coding with scripting languages.
- Translate readings from a topic area into computational models and designs.

D2L & Materials

We are using D2L (<http://d2l.depaul.edu>) as a platform for this course. All course materials including weekly lecture slides and class information (syllabus, lesson plan, assignment descriptions) are available through D2L under 'Contents.'

Readings for the course will be provided as PDFs on D2L. You are expected to take notes, prepare questions for discussion, and bring the readings to class each week. Make sure to research the authors, find out when the text was written, and think about the context of its publication. Students will be asked to play and analyze a range of games during the term. These will be available in the game lab on the 5th floor or free to download and play online.

Assignments are to be submitted to their dedicated folder on D2L.

Additionally, this course involves a number of visits to galleries and performances:

- September 15th, 7:00pm-8:00pm, Comfort Station concert, 2579 N. Milwaukee
- Before October 10th, MCA exhibit, 220 E Chicago Ave
- November 1st, Gallery 400 exhibit and talk, 400 S. Peoria St
- TBD, Pervasive game playtest

Students are responsible for purchasing tickets for the MCA and transport to and from these events, as well as coordinating with other class members. If you have any issues or concerns about attending these events, please contact me.

Grade Breakdown

Your grade will be based on the following components, a full description of each along with a grading rubric is available in the course outline and on D2L.

Participation.....	30%
Bitsy Project.....	15%
Canvas Project.....	15%
Twine Project.....	15%
Game Maker Project.....	20%
Crit Session.....	5%

A	100-93
A-	92-90
B+	89-87
B	86-83
B-	82-80
C+	79-77
C	76-73
C-	72-70
D	69-60
F	59-0

Course Policies

Participation and Attendance

Participation is a major part of this course, and will be measured across all parts of the course including discussion, critique sessions, office hours, online postings, and in-class writing. As noted, 30% of your grade depends on participation and you should not assume these are given. Instead, take a closer look at the criteria for participation in the assignment descriptions below.

You are expected to attend all classes and attend all activities. If you miss a class, it is your responsibility to make up work. Please be aware that being absent on a day where you are presenting a game for critique will result in a zero for the critique assignment. Please arrive to class on time, tardiness is disruptive to the class as a whole and will be factored into your participation grade.

Civil Discourse

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be socially responsible leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

Attitude

A professional and academic attitude is expected throughout this course. Measurable examples of non-academic or unprofessional attitude include but are not limited to: talking to others when the instructor is speaking, mocking another's opinion, cell phones ringing, emailing, texting or using the internet whether on a phone or computer. If any of these issues arise a student may be asked to leave the classroom. The professor will work with the Dean of Students Office to navigate such student issues.

Late Assignments

I will only accept late assignments if you contact me at least two days before the assignment is due and we come to an agreed upon extension. Assignments submitted late without such an agreement will receive a 10% deduction each day. Please note that due to the grade submission deadline, I may be unable to give an extension on some projects, especially near the end of the term.

Devices

In class you may find it helpful to use laptops or tablets to review the readings or games that have been assigned. Otherwise, your attention should not be divided between classroom activities and personal devices.

College Policies

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be addressed during class, posted under Announcements in D2L and sent via email.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but

the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in CampusConnect.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/>. If you have any questions be sure to consult with your professor.

Incomplete

An incomplete grade is given only for an exceptional reason such as a death in the family, a serious illness, etc. Any such reason must be documented. Any incomplete request must be made at least two weeks before the final. For more information on requesting an Incomplete:

<http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx>.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact me privately to discuss their specific needs. All discussion will remain confidential. To ensure that you receive the most reasonable accommodation based on your needs, contact me as early as possible in the quarter (preferably within the first week of the course) and be sure to contact the following office for support and additional services:

Center for Students with Disabilities (CSD)

Lewis Center 1420, 25 East Jackson Blvd.

Phone number: (312) 362-8002

Fax: (312) 362-6544

TTY: (773) 325.7296

www.studentaffairs.depaul.edu

Student Rights

You have rights as a student. To learn about your rights as a student please read DePaul's policies located here:

<http://sr.depaul.edu/catalog/catalogfiles/current/undergraduate%20student%20handbook/pg51.html>

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at: <http://cdm.depaul.edu/enrollment>

Important Dates

For the official calendar see:

<https://academics.depaul.edu/calendar/Pages/default.aspx>

September 5th, Begin Fall Quarter 2018

September 11th, Last day to add (or swap) classes with no penalty

September 18th, Last day to drop classes with no penalty

October 23rd, Last day to withdraw from fall classes

November 13th, Last day of classes

November 14th, Beginning of exam period

November 20th, End of exam period

November 29th, Fall grades due

Course Outline

Please note: This lesson plan and assignments are not part of the syllabus anymore and liable to change.

Week 1: Computer as a Medium

September 5th

Read: Janet Murray, “Affordances of the Digital Medium”

Watch: Electronic computing crash course (episodes 1-5)

Week 2: Encyclopedic I — Forgetting

September 12th

Read: Marshal McLuhan, “Introduction” and “Games” from *Medium is the Message*

Daniel Schacter, “Introduction” from *The Seven Sins of Memory*

Freud, selections from *The Psychopathology of Everyday Life*

Week 3: Encyclopedic II — Remembering

September 15th

Visit: Gallery Visit, “Liai // Max Guy,” 7:00pm-8:00pm, Comfort Station, 2579 N. Milwaukee

September 19th

Read: Katherine Hayles “Toward Embodied Virtuality”

Bernard Steigler, “Memory” from *Critical Terms for Media Studies*

Marianne Hirsch, “The Generation of Postmemory”

Play: RhythmLynx, *W.I.P.*, <https://rhythmlynx.itch.io/wip>

Sophie Mallinson, *The Crying Game*, <https://bijou.itch.io/the-crying-game>

Night Driver, *R.E.M.-Scape*, <https://night-driver.itch.io/rem-scape>

Supiket, *Tusan Homichi Tuvota*, <https://supiket.itch.io/tusanhomichi>

Sean LeBlanc, *Rain*, <https://seansleblanc.itch.io/rain>

September 21st

Due: Bitsy Project Due

Week 4: Procedural I – Thinking

September 26th

Read: Michael Mateas and Noah Wardrip-Fruin, “Defining Operational Logics”
Pamela McCorduck, “Fun and Games” from *Machines who Think*
David Smith, “The Phenomenology of Consciously Thinking”

Play: Other students’ Bitsy games (posted on D2L)

Watch: Kevin Slavin, “How Algorithms shape our World” TED talk

Week 5: Procedural II – Unconscious

October 3rd

Read: Luciana Parisi and M. Beatrice Fazi, “Do Algorithms Have Fun?”
Rosa Menkmen, “A Phenomenology of Glitch Art” from *The Glitch Moment(um)*
Sigmund Freud, from *The Ego and the Id*

Visit: The Museum of Glitch Aesthetics, <http://www.glitchmuseum.com/>

Play: Any six games from the Orisinal game library,
<http://www.ferryhalim.com/orisinal/>

October 5th

Due: HTML5/Canvas project due

Week 6: Participatory I – Feeling

October 10th

Read: Wendy Chun, “The Leakiness of Friends, or Think Different Like Me”
William James, “What is an Emotion?”
Brian Massumi, “The Autonomy of Affect”

Visit: MCA Exhibit, “I was Raised on the Internet,” 220 E Chicago Ave

Play: Other students’ canvas games (posted on D2L)

Week 7: Participatory II – Embodying

October 17th

Read: Rita Raley, “Introduction” from *Tactical Media*
Suchman, “Plans and Situated Action”
Iris Young, “Throwing like a Girl”

Play: Michael Lutz, *My Father's Long Long Legs*,
<http://correlatedcontents.com/misc/Father.html>
CEJ Pacian, *Jetbike Gang*, <https://pacian.itch.io/jetbike-gang>
Park and Grimes, *Forgotten*,
<http://warpdoor.com/2017/01/03/forgotten-sophia-park-arielle-grimes/>
Porpentine, *Cry\$tal Warrior Ke\$ha*,
<http://aliendovecote.com/uploads/twine/kesha.html>
Kevin Snow, *Beneath Floes*, <https://bravemule.itch.io/beneathfloes>

October 19th

Due: Twine projects due

Week 8: Spatial I – Imagining

October 24th

Read: Alan Liu, “Imagining the New Media Encounter”
Johanna Drucker, from *SpecLab*
Susan Isaacs, “The Nature and Function of Phantasy”

Play: Others students’ twine projects (posted on D2L)

Week 9: Spatial II – Dreaming

October 31st

Read: Sherry Turkle, “Video Games and Computer Holding Power”
Umberto Eco, “Travels in Hyperreality”
Sigmund Freud, selections from *The Interpretation of Dreams*

Visit: Electronic Literature Collection, Volume 3 (take a look around, but make sure to check out:

Bacterias Argentinas,

First Screening,

High Muck a Muck,

Mastering the Art of French Cooking and Systems Theory

Week 10: A Computational World

November 1st

Visit: Gallery 400, "Chicago New Media 1973-1992," 400 S. Peoria St

November 7th

Read: Bill Nichols, "The Work of Culture in the Age of Cybernetic Systems"

Play: Nathalie Lawhead, *Tetrageddon*, <http://tetrageddon.com/>

Cactus Games, *Norrland*, <http://cactusquid.com/games.htm>

Gregory Avery-Weir, *The Majesty of Colors*,

<https://www.kongregate.com/games/gregoryweir/the-majesty-of-colors>

Mollindustria, *Inside a Dead Skyscraper*,

http://www.molleindustria.org/dead_skyscraper/game.html

Week 11: Wrapping Up

November 14th

Due: Game Maker Project

Assignments

Participation.....	30%
Bitsy Project.....	15%
Canvas Project.....	15%
Twine Project.....	15%
Game Maker Project.....	20%
Crit Session.....	5%

Participation (30%)

This course revolves around our weekly discussions of the readings and games, and it is important that you share your thoughts and reflections as a part of the learning process. Your participation involves in-class contributions, reflections on the course blog, and conversations during office hours, prepare for weekly prompts, and attend the events outside class time. This is designed to give you a range of choices for how you are most comfortable engaging. Strong participation involves the following skills that I will look for you to demonstrate:

- Demonstrating a solid understanding of the material under discussion. Not only reading the texts but taking notes, drawing attention to important passages, and making connections to other work from the class or beyond it.
- Asking questions that deepen the discussion, that explore new aspects of a topic, and that give other students chances to reply and expand upon the question.
- Listening attentively to other students' contributions, and reflecting on why and how their perspective differs from your own.
- Evaluating the classroom dynamics and making sure everyone feels comfortable and is able to enter the discussion.
- Exploring arguments that you disagree with, and identifying what they are saying before criticizing them.

I will reach out to you half way through the course with feedback about your participation.

Bitsy Project (15%)

Logistics: Make a game in Bitsy that reflects on the theme of memory. Due September 21st, by midnight on D2L.

What is Bitsy?

Bitsy is a small game making tool designed by Adam LeDoux for telling stories about walking and talking. The tool works right in your browser and lets you create sprites for characters, scenes, and items, design rooms, script dialogue, and a handful of other things. Bitsy is available here:

<https://ledoux.itch.io/bitsy>

What am I making?

Your goal in this project is to make a game that deals with remembering and forgetting in any of the ways we have been exploring. You can make it about forgetful characters, about being inside someone's head, about how memory works as a system, a story about forgetfulness, dialogue where characters can't remember things. It is up to you to be experimental and creative with the topic.

How do I start?

Claire Morley has a useful tutorial that takes you through the steps of making a Bitsy game, which you can find here:

<https://www.clairemorleyart.com/a-bitsy-tutorial>.

Where can I look for inspiration?

Some incredible games have been made in Bitsy: take a look at the monthly jams that Adam LeDoux tweets out, or at this curated collection of games: <https://itch.io/c/201121/bitsy-faves>

How can I expand this?

Part of the goal for these projects is to work with and think about the constraints of a system as meaningful in themselves.

However, if there is something you just need to have for your game, take a look here:

<https://github.com/seleb/bitsy-hacks>. However, I'd like you to stick to only one hack.

How is this going to be evaluated?

I'm going to be looking at how well you use the affordances of the tool to communicate ideas, how you integrate and expand upon the readings about memory, how you connect that theme to the medium, and the craft you put into writing, art, and design of your game.

HTML5/Canvas Project (15%)

Logistics: Build a game using HTML5/Canvas that deals with the mental processes of either conscious or unconscious thought. Due October 5th by midnight on D2L.

An Introduction to Coding

Before you start working on your game, I would like you to follow along with the tutorials of Chris DeLeon on Udemy here: <https://www.udemy.com/code-your-first-game/>. These videos will introduce you to some basic concepts of game programming, such as a game loop and function calls.

What am I making?

For this game, I'd like you to pick one process involved in either conscious or unconscious thinking that we have looked at and translate it into an arcade mechanic. What does repression look like in real time? How about attention? In contrast to Bitsy, here you have neither constraint nor pre-built tools, so try to hone in on a simple mechanical metaphor.

Okay, but how do I go beyond pong?

The above tutorial gives you the basic elements that you'll need to build any game. However, there are many specific things to learn. There are lots of HTML5 tutorials online that go beyond this one, to show you how to load your own images and sound. I like this one, for instance, <http://www.lostdecadegames.com/how-to-make-a-simple-html5-canvas-game/>

Where do I find images and sound?

The aesthetic elements are not the focus of the project, so focus on the mechanic first. However, there are many free resources you can draw from, such as creative commons licensed photos on Flickr and game sprites on <https://opengameart.org/>. DePaul has a subscription to a sound effects library on most computers. Get creative, whistle a soundtrack, or scribble a character.

How is this going to be evaluated?

The heart of this project is the core mechanic that you design, and how it connects to thought. I will be looking at how fun it is, whether it has any bugs, how you implemented the code, and what parts of the mechanic are in harmony or disharmony with the idea.

Twine Project (15%)

Logistics: Build a game in Twine that deals with an emotion, affect, or embodied experience. Due October 19th by midnight on D2L. Hand in project files as well.

What is Twine?

Twine is a visual coding environment to author branching and interactive narratives. It helps you visualize how a complex and non-linear story is put together. You can use an online version of the tool, but I recommend you begin by downloading it for your machine at: <http://twinery.org/>

What am I making?

In this project you will be writing a game that focusses on one emotion, affect, or bodily experience and expands upon it in depth. Maybe that means a character in your story experiences that emotion, maybe it means that you communicate that emotion poetically through transitions and typography, maybe it means creating an allegory. Whatever you do, make sure you let me know what experience you're exploring.

How to get started?

A good resource for getting started are the tutorial videos at <http://www.adamhammond.com/twineguide/>. Twinery.org also maintains a wiki, which is an excellent resource for beginners and advanced twine users alike, and details many of the functions you can use.

Playtest, Playtest, Playtest

Of all our projects, this one demands playtesting. Not only are you trying to evoke a specific feeling, and doing it through writing, you are also (potentially) giving your players a range of different experiences. Make sure at least two other people play through your twine game before handing it in.

What other tools are there?

Twine is great for certain kinds of writing, but like Bitsy has some clear constraints. There are a range of other authoring tools for text games. In particular, you might want to look at Inform 7. If you feel ambitious and want to try Inform 7, talk with me.

How is this going to be evaluated?

For this project, I will be evaluating how your project captures and communicates a feeling, how it uses the format to do so, and the craft that goes into your writing, typography, transitions, and story-structure.

Game Maker Project (20%)

Logistics: Build a game in GameMaker 2.0 that obeys dream logic. Due November 14th by 9pm on D2L. Hand in project files as well as compiled game.

What is GameMaker?

Many game making tools, like Bitsy and Twine, are designed to make it easy for people to make a particular genre of game. Other tools, like GameMaker are designed to be more general purpose. GameMaker allows you to build almost any kind of 2D game that you can imagine—from platformers to RPGs and from shmups to puzzle games. However, that comes with increased complexity. While GameMaker builds in much more content management than HTML5, you need to figure out some scripting to make it work. There are two basic ways to approach this task. First, GameMaker involves a drag-and-drop scripting tool. This can be a powerful way to get your game working, but it is often hard to get things to do exactly what you want. Second, you can work directly in GML, the native scripting language. Either choice is fine for this project.

How do I get GameMaker?

Unlike other tools, GameMaker is a commercial tool. However, DePaul has a number of licenses that will allow you to use it for the quarter. I will send these out to you mid-quarter.

What am I making?

In this project you're going to be designing a short game that involves the operations of dream-logic that we have read about in Freud and Isaacs, things like condensation, displacement, projection, and introjection. The game can be of any genre you like, but be sure to choose something that you can prototype in a short period. For this project I am not looking for a finished game, but a playable demo that showcases the dream-like elements.

How do I start?

GameMaker comes with some excellent official tutorials here: <https://www.youtube.com/watch?v=cEb4gzG8S24>. Additionally, you may want to look at genre specific tutorials for examples of how to code specific game elements. For example, Shaun Spalding's platforming tutorial is a good one, <https://www.youtube.com/watch?v=izNXbMdu348>. Lynda.com also offers a few useful introductory tutorials.

Start early and plan it out

Unlike our other tools, GameMaker will require more time for you to get acquainted with the tool. Play around with it early on and watch a couple of the tutorial videos before you come up with your game idea. It will be important to design a game that plays to your strengths, whether that is art, sound, writing, coding, or design. You may want to write out a short game design document (or GDD) that describes the key elements of your game. You may submit this document along with your game.

How is this going to be evaluated?

For this project, I will be evaluating how well you decided up on the scope of your game, how you integrated dream-logic, whether that logic works towards subverting an existing game genre or inventing new mechanics, and the craft that goes into the design, art, sound, writing, and code.

Crit Session (5%)

Logistics: Choose one of your projects for critique, listen and write notes, hand those notes in by the class after your critique.

When you submit one of your projects (Bitsy, HTML5, or Twine) you will choose to have the class talk about it for 15-20 minutes and offer feedback. The rest of the class will be responsible for playing your game closely. They will describe what they experienced, what they thought you were trying to accomplish, what parts felt unique or moving, and what parts didn't work. Your job is to remain silent and take notes on what people say along with your commentary/thoughts on their feedback. You will send me a copy of the notes afterward (a scan or photocopy is fine, or typed up if your handwriting is difficult to read).