

DIG 3623 Playable Patterns

Professor: *Amelia Winger-Bearskin*

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Office Hours: Office hours are via Zoom Tuesdays from 4-6pm. Zoom link will be added to Canvas first full week of classes, If you are in the waiting room, you will be seen in the order you arrived.

Course Description

From random number generators to flocking algorithms, designing the automated parts of a game involves finding elegant, concise, and believable ways of modeling the real world. A look to nature and the history of computational poetics to learn to design machine intelligence that inspires audiences interacting with new stories.

We will look to the history of computational poetics as well as to nature as we ask what animals and flowers can teach us about NPC/CPU/AI reactions in games. Students will learn to design machine intelligence that sparks life, joy, and delight for audiences interacting with new story worlds.

Student Empowerment in Scientific Exploration

Students have the autonomy to choose the scientific topics that captivate them, offering them significant freedom to delve into their areas of interest. Alongside this:

- **Research Skills:** Students will be taught a range of research techniques, allowing them to effectively channel their enthusiasm for scientific investigation.
- **Enhanced Communication:** Through methods like multimedia storytelling, artificial intelligence, and artistic strategies, students will refine their communication abilities.
- **Portfolio Development:** The projects crafted in this class will not only showcase their skills but also serve as valuable assets for future job applications and admissions to graduate schools. This is especially relevant for those pursuing careers in game design, multimedia, art, graphic design, computer science, or scientific research.
- **You may use AI agents and AI Tools in this class for any assignment or exercise** (your professor will show you how to use AI tools in class in case you are unfamiliar).

Course Prerequisites

None

Learning Outcomes

By the end of this course, students will be able to:

- Design complex systems for video games based on research topics of the student's choosing informed by interdisciplinary research in the digital arts and sciences.
- Analyze interdisciplinary research that will inform creative design of systems and characters in video games.
- Code simple simulations to demonstrate how their designs would be implemented in an agnostic game engine.
- Design and develop research presentations that provide an in-depth look at elements of video games involving environments, weather, characters, NPCs, aIs and monetary systems as they are developed for video games, virtual reality, immersive installations, and digital storytelling.

Materials & Books

No Required Textbook, but student will need access to a laptop/computer.

Week	Subject	Assignment Quizzes	Assignments Due
1	Introduction to Playable Patterns – we will use canvas for our assignments and quizzes		Read Article Assigned
2	Weather in Video Games – Create a diagram of a weather pattern in a game		Weather Pattern Diagram
3	Animal Behavior in Video Games – Create an Animal and its patterns		Animal Patterns Assignment
4	Non-Human Antagonists in Video Games	Quiz 1	
5	The Nature Of Code: Systems in Code		Simulation Assignment
6	Environmental Data Systems and an introduction to APIs	Quiz 2	Read Article Assigned
7	Story worlds based on science		Science Story world assignment
8	Story Worlds the science of fantasy or Sci-Fi (not yet possible in our known universe)		Fantasy story world assignment
9	Developing an NPC / AI based on non-human systems		NPC/AI Midterm Project Presentation
10	Developing a story world via images, text, diagrams, and verbal pitches	Quiz 3	

11	Designing for VR, 360 and immersive installations	Quiz 4	Read Article Assigned
12	New Economies in Game Worlds	Quiz 5	Read Article Assigned
13	Final Project Approval and workdays with instructor feedback during class.		Read Article Assigned
14	How to make a good playthrough video to talk about a theme	none	
15	How do decentralized technologies effect NPCs and Ais (online / player-built games / web3 / nfts)		Final Project Due
16	Final Project Presentations		Final Project Presentations

Course Schedule

This schedule is only a guide and is subject to change. Unless otherwise indicated, assignments and readings are due the day they are listed on the syllabus, not the following day.

Grading Criteria

Assignment / Assessment	Total Points	% of Grade
5 homework assignments – outlined in Canvas – 40 pts each	200	20

Midterm Project and Presentation, including a deck, presentation, images, diagrams, written description, all original work from the student not copied from the internet.	200	20
5 Quizzes based on lecture topics – 50 pts each – not timed, you'll have 1 week to complete them, open book, open world.	250	25
Class Participation – Students are expected to actively participate in class discussions, both in class as well as in course online forums and in class presentations.	100	10
Final Project and presentation of a story world element for a video game, this element has a presentation including simulations, images, diagrams, and written description. All original content from the student not copied from the internet.	250	25

Grading Scale

Letter Grade	% Equivalency
A	94 – 100%
A-	90 – 93%
B+	87 – 89%
B	84 – 86%
B-	80 – 83%
C+	77 – 79%
C	74 – 76%
C-	70 – 73%

D+ 67 – 69%

D 64 – 66%

D- 60 – 63%

E, I, NG, S-U, WF 0 – 59%

More information on grades and grading policies is here: [Links to an external site.https://catalog.ufl.edu/UGRD/academic-regulations/grades](https://catalog.ufl.edu/UGRD/academic-regulations/grades)[Links to an external site.](https://catalog.ufl.edu/UGRD/academic-regulations/grades)[Links to an external site.](https://catalog.ufl.edu/UGRD/academic-regulations/grades)[Links to an external site.](https://catalog.ufl.edu/UGRD/academic-regulations/grades)

Materials and Supply Fees

Material and supply and equipment use fee information are available from the academic departments or from the schedule of courses (Florida Statutes 1009.24). The total course fee for this class is \$0.00. The total course fee for each course is listed on the UF Schedule of Courses. ([Links to an external site.https://registrar.ufl.edu/soc/](https://registrar.ufl.edu/soc/)[Links to an external site.](https://registrar.ufl.edu/soc/)[Links to an external site.](https://registrar.ufl.edu/soc/)[Links to an external site.](https://registrar.ufl.edu/soc/))

Course Policies

Attendance Policy, Class Expectations, and Make-Up Policy

The instructor is responsible for communicating the specific details of what percentage of your grade (if any) will be assigned to participation, and how class participation will be measured and graded. The UF Digital Worlds Institute is committed to the idea that regular student engagement is essential to successful scholastic achievement. No matter if the class is held in a traditional classroom, an online classroom, or a combination of the two, interaction with your peers and the instructor will empower you to greater achievement.

We value participation more than mere attendance. Your participation in class will be determined by asking and answering questions, group discussions (online and in person) and participating in canvas conversations/comments for discussions (for F2F, OA and OS students), you can do your participation purely online and still have participation grade or you may choose to do it during a synchronous class time. Some homework requires

you to present in class, or upload a video of you presenting it, if you miss class this will affect your homework grade (part of the grade that is related to the presentation portion of the assignment, you will still get full marks for the other portions of the assignment.) If you are in an online section, you will only need to upload a video of your presentation. If you attend class via zoom AND are in a F2F version of the class, you must email in advance of class that you will be attending via zoom as per department policy.

In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays, and participation in official university activities such as music performances, athletic competition, or debate. Students must provide appropriate documentation in advance of the absence when possible. No documentation is needed for an absence due to religious observation.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: [Links to an external site.https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/](https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/)[Links to an external site.](#) [Links to an external site.](#)

Course Modality

Course modality is the way in which a class is offered/delivered to students by the instructor. All students, regardless of the modality, will achieve the same learning objectives. Students can check their class schedules or reference the top of this syllabus to see the format(s) available for each of their individual classes. The modality of a course does not vary during a semester, and students are expected to adhere to the instructor-defined attendance guidelines for that format.

Use the guide below to familiarize yourself with the various ways classes are offered at the Digital Worlds Institute.

Know Your Course Modality

Research Days Overview

During this course, specific days will be set aside for focused research on your assignments' topics. These Research Days will be dedicated to various subjects, including:

- Science storytelling

- Data science
- Artistic documentation
- Other forms of multimedia communication in the digital arts and sciences

The research methods and techniques for these subjects will be demonstrated in class, adhering to UF quality standards.

There are two types of Research Days:

- Self-Directed Research: You will independently work on your research projects, using the skills and methods taught in class.
- Guided Research via Zoom: On some Research Days, the professor will guide you through the research process on Zoom, providing personalized support and instruction.

Announcements and Attendance for Research Days

Research Days will be announced at least 2 weeks in advance, so you can plan accordingly. Your attendance will be tracked in one of two ways:

- If it is a Zoom Session: attendance will be tracked by participating in the Zoom sessions during Guided Research Days.
- If it is a self-directed research day: attendance will be tracked by submitting an assignment summarizing your work during Self-Directed Research Days. The assignment will be available in Canvas in advance of the research day.

This structure ensures that you have both the freedom to explore on your own and the guided support to help you excel in your research endeavors. Please keep track of research days in the page "Important Dates". (a page in canvas)

Course Technology

The students will be required to have access to and use a personal computer with access to the Internet. Word editing software will be required for written assignments.

The University of Florida and Digital Worlds requires that students have access to and ongoing use of a laptop/mobile computer for DIG courses in order to be able to function in the current learning environment. Digital Worlds requires each DAS major's laptop computer to meet certain minimum specs for heavy graphics use, the requirements documented below must be met. [Links to an external](#)

[site.https://digitalworlds.ufl.edu/programs/ba-in-digital-arts-sciences/technologyLinks](https://digitalworlds.ufl.edu/programs/ba-in-digital-arts-sciences/technologyLinks)
[to an external site.requirements/Links to an external site..Links to an external site.](#)

Course Communications

Students can communicate directly with the instructor regarding the course material through the course management system (CANVAS) using "Canvas Mail".

Course Recordings

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Creation of Original Content Ethics

For original projects and all assignment deliverables, students should remember that representations of acts of violence, coarse and offensive language, sexual behavior, bodily function and ability, neurodiversity, and personal identity are likely to cause extreme audience response, regardless of the creator's intentions. In addition, the recreation of such actions and subjects for fictional purposes may unintentionally traumatize or negatively impact those who collaborate in the creation of the images. While the university encourages students to explore themes and tell stories that may include this difficult subject matter, they should be cautioned against modes or styles of representation that might be considered unnecessarily offensive or potentially triggering. Instructors, faculty, and university administrators reserve the right to not show or share any student work they feel is inappropriate for their classroom or for public exhibition, as there may be concerns about the impact of such work on the community. We encourage students to consult with their faculty when producing work that might be considered controversial, and to err on the side of being cautious when it comes to making decisions about a project's content - in other words, make the PG-13 version of your story, not the R version, and certainly not the "unrated" version. This is also to help students understand that most professional creative situations have strict guidelines and limitations on such content and how it is produced: your ability to tell stories effectively with "less" is a strong professional skill that will aid in the dissemination of your work to a broader audience.

Course Technology Support

Technology Support Center

The [Links to an external site.Technology Support CenterLinks to an external site. Links to an external site.](#) provides computer support for Digital Worlds students who access Zoom, lecture recordings, student equipment, facilities, and other technology-based resources.
<http://digitalworlds.ufl.edu/supportLinks to an external site. Links to an external site.>

For computer assistance related to Zoon, lecture recordings, student equipment, and facilities requests please email support@digitalworlds.ufl.edu.

UF Computing Help Desk

For support related to account services, technical consulting, mobile device services, software services, administrative support, application support center, and learning support services, please contact the [Links to an external site.UF Computing Help DeskLinks to an external site. Links to an external site.](#) available 24 hours a day, 7 days a week at 352-392-4357 or helpdesk@ufl.edu.

University Policies

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code ([Links to an external site.https://www.dso.ufl.edu/sccr/process/student-conduct-honor-codeLinks to an external site.](https://www.dso.ufl.edu/sccr/process/student-conduct-honor-codeLinks to an external site.https://www.dso.ufl.edu/sccr/process/student-conduct-honor-codeLinks to an external site.))[Links to an external site.](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Class Demeanor

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones

and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting [Links to an external site.https://disability.ufl.edu/students/get-started/Links to an external site.](https://disability.ufl.edu/students/get-started/Links to an external site.https://disability.ufl.edu/students/get-started/Links to an external site.) It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Netiquette Communication Courtesy

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, more information can be found at: [Links to an external site.http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf](http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf)[Links to an external site.](#)

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: [Links to an external site.https://catalog.ufl.edu/UGRD/academic-regulations/ferpa-confidentiality-studentrecords/](https://catalog.ufl.edu/UGRD/academic-regulations/ferpa-confidentiality-studentrecords/)[Links to an external site.](#)

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at [Links to an external site.https://gatorevals.ua.ufl.edu/students/](https://gatorevals.ua.ufl.edu/students/)[Links to an external site.](#) Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via [Links to an external site.https://ufl.bluer.com/ufl/](https://ufl.bluer.com/ufl/)[Links to an external site.](#)

[site](#). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>[Links to an external site.](#) [Links to an external site.](#)

Campus and Academic Resources

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [Links to an external site.](#) [U](#)[Links to an external site.](#) [Links to an external site.](#) [Matter, We Care website](#)[Links to an external site.](#) [Links to an external site.](#) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center:[Links to an external site.](#) Visit the [Counseling and Wellness Center website](#)[Links to an external site.](#) [Links to an external site.](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or [Links to an external site.](#) visit the [Links to an external site.](#) [Links to an external site.](#) [Student Health Care Center website](#)[Links to an external site.](#) [Links to an external site.](#)

University Police Department:[Links to an external site.](#) Visit [UF Police Department website](#)[Links to an external site.](#) [Links to an external site.](#) or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608;[Links to an external site.](#) Visit the [UF Health Emergency Room and Trauma](#)[Links to an external site.](#) [Links to an external site.](#) [Center website](#)[Links to an external site.](#) [Links to an external site.](#)

E-learning technical support: Contact the [e](#)[Links to an external site.](#) [UF Computing Help Desk](#)[Links to an external site.](#) [Links to an external site.](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center[Links to an external site.:](#)[Links to an external site.](#) Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support[Links to an external site.:](#)[Links to an external site.](#) Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center[Links to an external site.:](#)[Links to an external site.](#) Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio[Links to an external site.:](#)[Links to an external site.](#) 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus:[Links to an external site.](#) Visit the [Student Honor Code and Student Conduct Code webpage for more](#)[Links to an external site.](#) [Links to an external site.](#)[information](#)[Links to an external site.](#)[Links to an external site.](#)

Online Students Complaints:[Links to an external site.](#) View the [Distance Learning Student Complaint Process](#)[Links to an external site.](#)[Links to an external site.](#)

Disclaimer: This syllabus represents the instructor's current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

VI. Required Policies

Attendance Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Students Requiring Accommodation

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF Evaluations Process

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Counseling and Wellness Center

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

The Writing Studio

The writing studio is committed to helping University of Florida students meet their academic and professional goals by becoming better writers. Visit the writing studio online at <http://writing.ufl.edu/writing-studio/> or in 2215 Turlington Hall for one-on-one consultations and workshops.

In-Class Recordings

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in

preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.