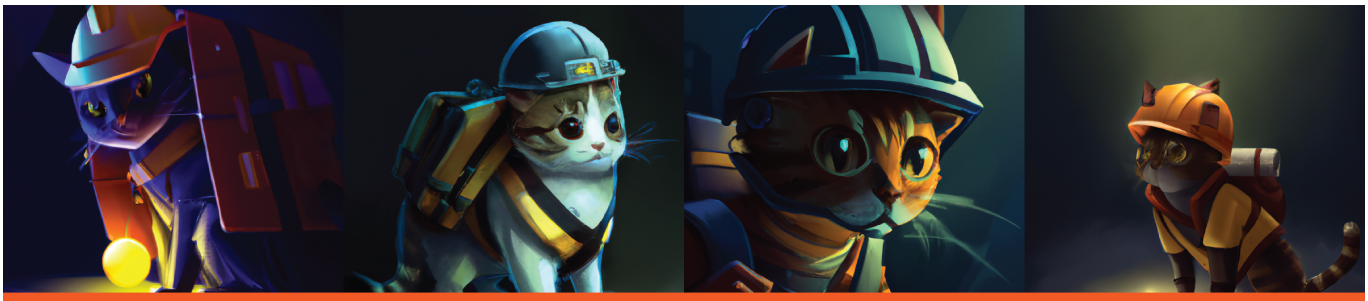
Game 395 Topics Class: Unity3D Game Engine

Overall TL;DR: Design, Development, Deployment, & Software Patterns that will help you understand Unity3d and other game engines.*We all have different starting points and we all have different paces. Success in this class: keep on iterating, keep creating, keep trying, and you will do fine*



A cat wearing a backpack and a hardhat with a light looking for the loot, digital art

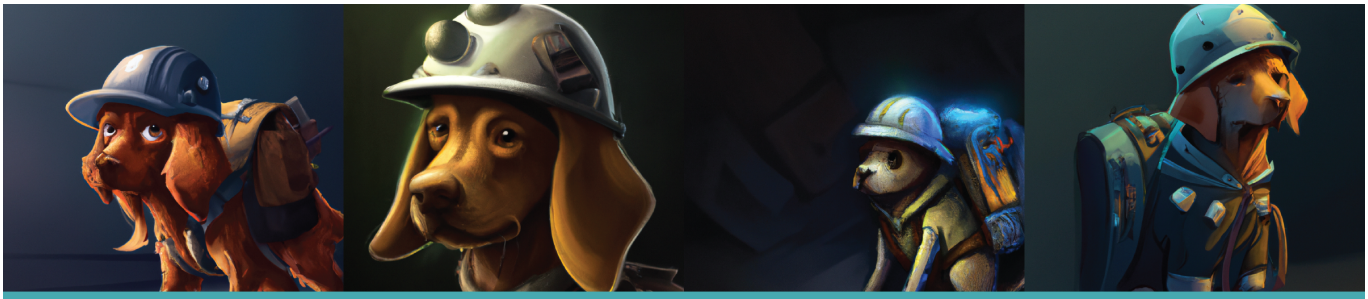
Instructor: John Shull	**Semester:** Fall 2022
Email: JShull@odu.edu	**Class Meeting Times:** Mon & Wed, 3:00-4:15pm
ODU Office: Dragas 1108D	**Class Location:** Monarch Hall 2116

Course Description

GAME 395: Designing and Developing with the Unity Engine. This class will take a Systems Engineering approach into how you can use real-time simulation systems aka 'Game Engines' to rapid prototype, create, build, compile, and deploy functioning software across major hardware and operating systems. This class will break down Unity into its core systems and will explore how said systems can be found in most game engines: including Unreal, Godot, & Stride. We will be using a wide range of software standards to explore and utilize well known programming patterns, concepts of software versioning, creating and maintaining changelogs, taking advantage of version control systems like git and importantly using distributed version control systems like GitHub/GitLab, dabble with cloud deployment architectures within Unity and PlayFab, work through package management solutions, and will take advantage of new machine learning tools and how they are rapidly changing how we work within platforms like Unity. The class will focus on one core project that students will continue to iterate on across the length of the class and is heavily designed around one day being dedicated to learning/teaching with the second day using the software. Whether you're an expert in Unity or brand new to Unity, this class will help build confidence, make you familiar with the entire Unity environment and their ever expanding tools and deployment processes, and will provide information that directly helps towards the completion of a Unity Certification.

Required & Suggested Materials

There is no official book for this class - most of the information will be provided via the instructor and made accessible within a GitHub repository that will be provided and updated throughout the class. I will provide some free material and will be in the books folder. If you wanted to purchase a book, I would suggest **'Choose your Wow!'** by Scott W.Ambler and Mark Lines



A dog wearing a backpack and a hardhat with a light looking for the loot, digital art

Office Hours & Contacting Me

The best way to reach me is through Microsoft Teams. You can also reach me at JShull@odu.edu. You can check my Office Hours Booking page to request a MS Teams 15 minute time to meet with me. I am on campus Mondays & Wednesdays and at VMASC Tuesday & Thursday. If you ever need to meet outside of those times just ask me via email/teams if there's another time. I try to restrict my times down to keep me honest and on task as I tend to ramble and put others needs over my own which is a blessing and a curse!

Student Learning Outcomes

My intention on teaching this class is to build confidence within a game engine - currently this engine is Unity - but I hope that this class empowers you to explore other real-time simulation tools! 🚀 I feel confident that by the end of the class you should be stronger in understanding general software development processes. You will build experience towards understanding general software design patterns and current technologies that industry is using to collaborate and share work. I also believe that you will feel more confident in deploying from Unity to a wide range of other operating systems, including Apple and Android. Below are the high level outcomes I expect you to walk away from immersing yourself within this class.

- Understand the basics of Version Control Systems & Cloud Version Control Systems
- Understand the basics of Software Project Management
- Understand the basics of decision support systems and work tasking/issue management
- Understanding the basics of software package management systems
- Understand deployment models, versioning, and documentation standards
- Increased Confidence within Unity3D
- Increased Confidence within Deployment from Unity3D
- Understand the Unity3D educational pathways and Unity3D software model
- Understand data standards and interoperability
- Understand Unity3D audio systems and build confidence in recording and/or using your own effects
- Understand the fundamentals of spatial computing, mixed reality, and how they intersect with real-time production
- Familiarity with program design patterns and not reinventing the wheel

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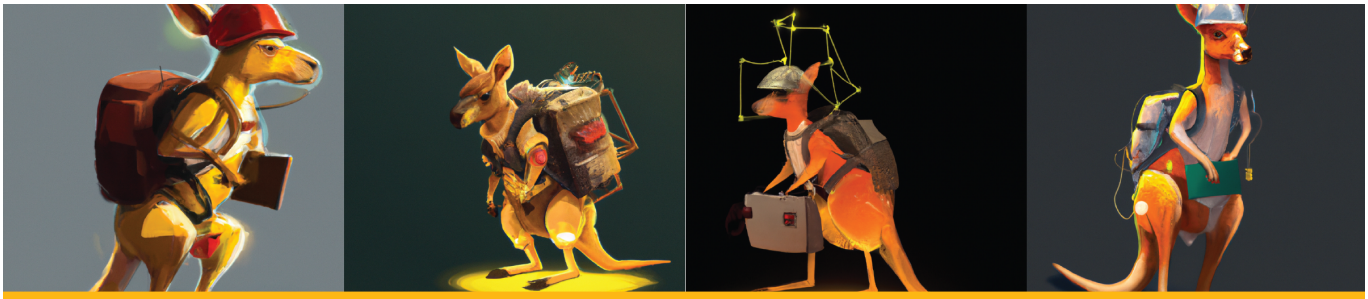


A kangaroo wearing a backpack and a hardhat with a light looking for the loot, digital art

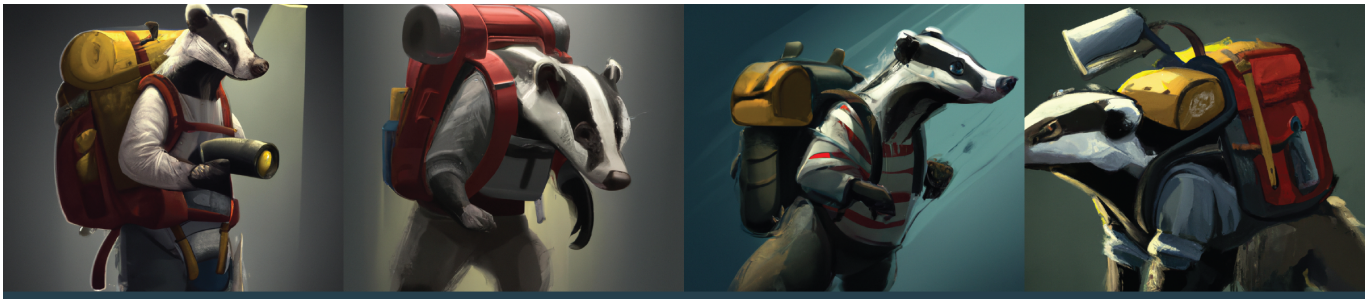
Student Learning Objectives

To help align the outcomes with fundamental objectives I have prepared a breakdown of individualized objectives as defined by the Unity3D education team and my own personal objectives within this class. There is no direct relationship with a Unity objective and a John objective - but you will see some that naturally go hand in hand. These objectives are here to help keep the class transparent and me focused on making sure you know what to expect throughout the semester.

Unity Objectives	**John Objectives**
U01.1: Identify basic game design principles	**J01.1:** understand version control systems (VCS), be able to setup a basic git and GitHub repository
U01.3: Implement fundamental project management concepts	**J01.2:** manipulate and modify a *gitignore* file and understand git large file system and a *gitattribute* file (git lfs)
U02.6: Break down a problem into it's component parts, set priorities, & explore methods of resolution	**J01.3:** Awareness and understanding open source licenses
U02.9: Use logic & reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems	**J01.4:** Understand the definition of user experience (UX) and how to create simple user personas
U03.6: Generate Models and Materials for project(s) created within the Unity Editor	**J02.1:** Understand the basics of a Kanban board & importance of issue tracking, & everything is time
U03.7: Apply fundamental concepts of project management - Project Charter Form (PCF)	**J02.2:** Be aware of Disciplined Agile Delivery concepts and aware of decision support systems
U03.11: Evaluate the importance of iteration and rapid prototyping in game design	**J02.3:** Understand how to use decision support systems to help guide a asset/software acquisition decisions
U04.7: Create and control terrain within the Unity Editor	**J03.1:** Understand why data serialization is important, and be able to understand introductory concepts towards interoperability
U04.9: Distinguish components of a Work Breakdown Structure (WBS)	**J03.2:** Understand JSON, XML, and USD and be able to implement them within your project
U05.1-7: Game Design Document (GDD)	**J03.3:** Understand the basics of package management, explore tools like pip and nuget

Unity Objectives	John Objectives
U06.1-8: Game Development Tools, Formats, and Asset Management	**J03.4:** Understand Unity's package manager format, look into creating your own package and using GitHub to host it
U07.1-11: Physics & Animation Systems	**J04.1:** Understanding the basics of foley recording
U10.2: How sound files and music are used to enhance game experience and provide realism	**J04.2:** Understanding the basics of spatial audio recording
U10.3: Apply audio and audio effects to create realistic environments	**J04.3:** Understanding the basics of podcast software
U10.5: Doppler Effect and describe how to apply it within an experience	**J04.4:** Understanding the importance of spatial audio for mixed reality development
U10.8: Manage external sound and music assets that contain intellectual property protection agreements	**J05.01:** Differences between Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (XR)
U11.1: Appropriate assets for the project - resource list	**J05.02:** Why UX is vitally important for software development, and it's impacts within the future of spatial computing
U11.2: Game Development Plan: sequence experience activities from start to finish to both UX and build process	**J05.03:** Familiarity with OpenXR input standards towards spatial experiences
U11.3: Write Scripts that deal with player movement and interactions	**J05.04:** Familiarity with ARKit and the powers hidden behind Apple's integrated technology stack
U11.6: User input to control actions via scripts, be comfortable with Unity's new Input Manager System	**J05.05:** Familiarity with Meta's SDK and the powers hidden behind Meta's Technology Stack
U13.1: Quality Assurance (QA) Testing, types of bugs	**J05.06**: Familiarity with digital senses and how the brain/body can be fooled
U13.2: Importance of documentation during testing phases	**J05.07:** Familiarity with hardware and software for haptic systems within XR
U13.4: Perform successful debugging and troubleshooting activities within a game environment	**J06.1:** Understand the differences between verification & validation (V&V)
U13.5: Locate bugs within a game environment using debugging software tools like visual studio	**J06.2:** Changelog, what it is, why we care, and why it matters for game development
U14.1: Explain the concepts and rationale behind versioning schemes and procedures	**J06.3:** Understanding prototypes, alpha, beta, gold/release candidate, Q&A, and how they align with software development, Kanban boards, and issue tracking

Unity Objectives	John Objectives
U14.3: Create a versioning system for an experience development project	**J06.4:** Create your own GitHub issue template, use appropriate tags, and have it auto-file an issue for your experience repository
U14.5: Describe factors that constitute a release candidate	**J06.5** Familiarity with Program Design Patterns: Adapter, Command, Factory Method, Resource Pooling, Memento, Singleton, FIFO/LIFO Queue Systems



A badger wearing a backpack and a hardhat with a light looking for the loot, digital art

Overarching Weekly Structure

Each week will be broken up into the following areas to help drive towards the overall learning outcomes and objectives. These areas are setup to make sure I stay on task and maximize the time we have in class to get through important pieces of Unity, software development, and to allow you ample time to work towards using the software and iterating on your project. Depending upon how the class goes these might stretch past a single week. I want to make sure y'all fully understand the concepts and feel confident to explore on your own. These areas are broken up below and will be briefly explained.

Game Engine Systems

A standard system that most game engines have, for the intention of this class we will be primarily focusing on Unity core systems, but we might cover some others as I see fit throughout the semester. The learning objectives broken down above in the table are directly related to the Unity Educational material that they provide instructors. You can find the full Unity Curricular Framework PDF from May 2020 here. Please do not redistribute this information.

Data Standards & Software Program Design Patterns

I will introduce program design patterns throughout the class - some are straight forward and pretty simple, others are going to be drawn out over the entire class. These are things I wish I learned within the first year of building software and interactive systems and are broken down in John Objectives 2, 3, and 6 above.

Action Items

These are items you will have the choice to complete. These items are broken up in a system that builds towards how I evaluate you and ultimately provide you the end game score. These are going to be explained more later on a different section of the document associated with the grading agreements.

- Action Items
    - High Stake Item
    - Medium Stake Item
    - Low Stake Item

Live Demonstrations

Every other week my plan is to spend a few minutes demonstrating tools, software, SDKs, things that I've used, want to use, and/or want you to be aware of. Some weeks I might have a partial guest lecture to come in remote and/or on-site to talk through what tools/software they use. I am currently looking to get some of my colleagues from VMASC to help as well as some industry professionals from Valve and Ubisoft. Currently I have verbal agreements from the lead on Dota 2 and an individual who helps architect entire worlds for different a wide range of IP at Ubisoft.

Random Access Technology (RAT)

A few minutes of me trying to scare the crap out of you with how fast automation is coming and to attempt to showoff some really cool technology stuff. In some cases this will be combined with the live demonstration portion of the class.

A red tail hawk wearing a backpack and a hardhat with a light looking for the loot, digital art

Accessibility and Inclusion

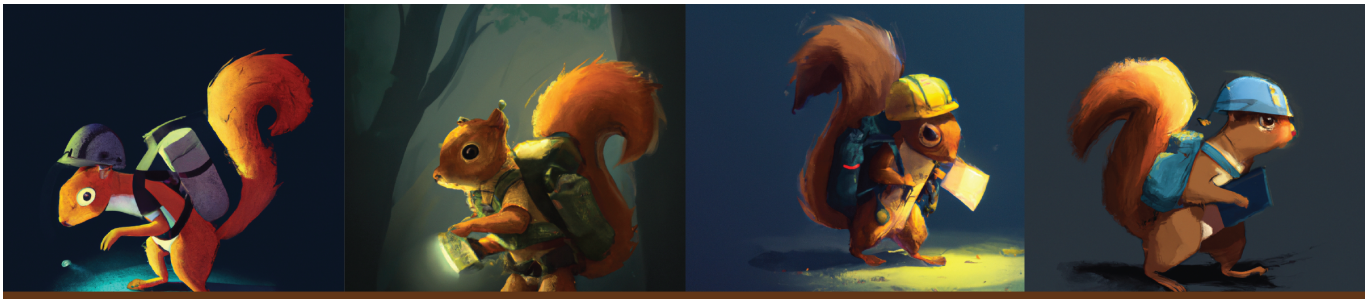
Most of the indented statement below was originally written by Ann Kumm - my significant other and the main reason this class was able to happen this fall of 2022. Without her input, guidance, and support I would not have been able to make this class possible. We stand on the shoulders of giants, my *giant* happens to be about foot shorter than me!

> Your success in this class is important to me. We all need accommodations because we all learn differently. **Everyone** has the right to the full experience of the university education you have earned by admission. If there are aspects of this course that prevent you from learning or exclude you, please let me know as soon as possible and whenever needed. It is never too late to request accommodations—our bodies, minds, and circumstances are in constant states of change. Together we'll develop strategies to meet both your needs and the requirements of the course.

Mental Health & Stress Management: As a student, you may experience a range of issues that can affect your learning (for example, increased anxiety, strained relationships, decreased motivation, feeling down). These concerns or stressors can affect your academic performance and reduce your ability to participate in class. Old Dominion University services are available to assist you with addressing these concerns and others you may be experiencing. Please see the *Campus Resources* section below. I will try my best to accommodate everyone in this class to the best of my ability- at anytime if something I'm doing doesn't feel accessible please let me know. I have been in your place at this University and I understand that in a lot of situations you feel there isn't a way forward... if I made it this far... I can guarantee you there is always a path forward and in most cases it just requires you to ask.

Campus Resources

Office of Education Accessibility 1021 Student Success Center 757.683.4655	Women & Gender Equity Center 1000 Webb Center 757.683.4109
FeedODU Monarch Pantry Suffolk Room in Webb Center 757.683.4325	Counseling Services 1526 Webb Center, North Wing 757.683.4401
The Writing Center 1208 Perry Library 757.683.4013	Student Outreach and Support-SOS 2008 Webb Center 757.683.3442



A squirrel wearing a backpack and a hardhat with a light looking for the loot, digital art

Assignments, Un-Grading, and Specification Grading

Grading Agreements! What? *Ungrading* wtf is that?! That's right, *zero* grades. But *how?!* Below I'm going to take a concept called *ungrading* and another concept called *specifications grading* and break out a "Choose your own Adventure" pathway towards the 'grade' agreement that you want to take on. I will lay this out for how this class will work. Yes you will have work to do, yes I will provide feedback, and yes because the university still requires me to submit a grade you will get a *grade*. If you're here to game the grade system, drop the class and please save us the time and energy as it won't work in this class. This class is structured based around building experience and alining your realistic time commitment towards this class. I get it. Trust me - there are classes that take a lot of time and there are classes that don't. This class can be thought of as a flex. If you've got the time to give and you want to aim high - do it. If you're working two jobs and can only come in and meet the general requirements - do it. I'm not here to judge your individual experiences and where you are within your own journey - this concept hopefully meets you where you are and helps maintain that to where you want to go. I'm going to approach this from a sort of bundled perspective, you can think of this as a mini-degree in which there are core stake requirements and 'gen-eds' that you can pick from to make up your own pathway. Given that this is the first time I'm doing this - I might be making some adjustments to how we transfer between content and the work you do and that's just to help eliminate *OP* strategies that I'm sure will emerge. To keep it simple, everything you do in this class will either be a Low-stake, Medium-stake, or High-stake assignment. You are then committing to what you want to do via a process of periodic check-ins with me, just like if you were working a contract, and ultimately working towards delivering on that agreement and commitment. Think of me as a customer waiting to pay you for what you deliver, or not pay you for what you don't deliver. I will provide feedback at multiple intervals throughout the class, allow ample time for you to schedule one-on-one time with me, and will provide feedback on all **medium & high state** assignments. In the long run - my plan is to use this class and the next few times of teaching this class to provide a set of more defined pathways tied to industry specifications to allow a wider range of individuals who are entering this class with a various levels of different technical and non-technical skills pathways to become even stronger within their area. To get there I first, I need to get a better idea of where everyone is and watch what emerges through some of these first few classes I teach - so again, thank you!

Evaluation of Learning

In our class, your work will be evaluated using a form of ungrading called grading agreements. A grading agreement is a more authentic means of assessment in a technical course because it models workplace practices (e.g., the concept of adding/removing features towards a game by the next big update/event) While you will receive a final grade at the end of the semester, I will not be grading each individual assignment or task. Instead, I will provide feedback by asking questions and making comments that engage your work. The purpose of this is for you to learn and be able to use feedback to improve and/or reflect. This is important because I believe that grades should tell a story of progress and achievement. This is why in our class, your final grade

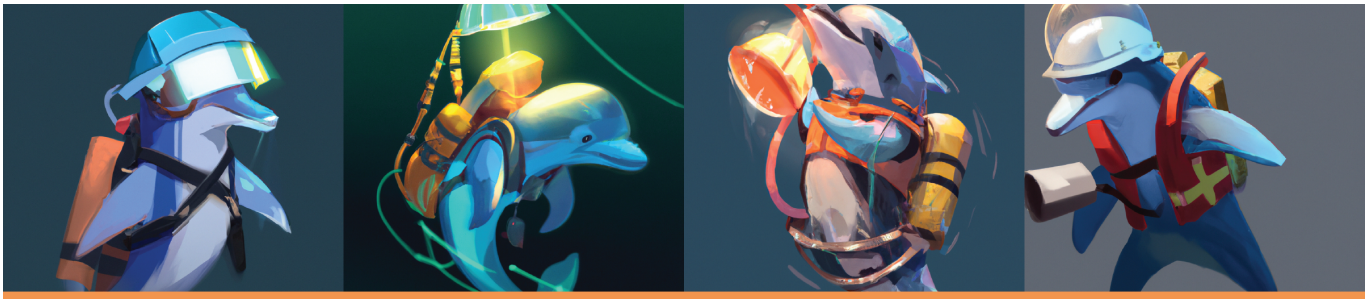
will be an iterative reflection of performance, progress, and process. The underlying premise of a grading agreement is that if you do the work required and meet all expectations, you will see enormous gains in your learning and pass the course. This shifts the focus from points and percentages to a focus on learning. The hope is that this frees you up to focus more on learning and taking risks instead of zeroing in on a particular grade. I want you to strive to hit that extra feature or game mechanic because it pushes you want to aim high, even if the mechanic doesn't work out entirely or is over-powered as all get out. Therefore, if you simply complete all of the work for this class and engage with me throughout the session, prepare for your semester project, provide periodic feedback to me, utilize the class lab time, participate in the class discussion, and are prepared and professional, which includes bringing in functioning games when assigned to do so, and staying on task, you will earn a B. There's **no catch**. As *Inoue* states:

> In a nutshell, if you do all that is asked of you in the manner and spirit it is asked, if you work through the processes we establish and the work we assign ourselves in the labor instructions during the quarter, if you do all the labor asked of you, then you'll get a "B". It will not matter what I or your colleagues think of your 'work', only that you are listening to our feedback compassionately. We may disagree or misunderstand your intent, but if you put in the labor, you are guaranteed a B course grade. If you miss class (do not participate fully), turn in assignments late, forget to do assignments, or do not follow the labor instructions precisely, you will get a lower course grade.

Item Assignment

This is getting broken down in the lower sections in low, medium, and high stakes and will be broken down in those sections. Below is just general information about what the definition of an assignment is.

Time Allotment requirements For most of the assignments I have setup a sort of window of time that I could put aside for it, this doesn't mean it will take you the full time, it's more an allotment for you to understand if you're constantly brushing up against it that maybe you should reach out and talk with me as by design these items shouldn't exceed the time windows I've put in. I will be providing feedback throughout the assignment submission timeline, you can expect feedback on all required medium and high stake assignments. Low stake assignments are there to help scaffold and build towards the class and by definition already include a lot of contact points with me and other students.



A dolphin wearing a backpack and a hardhat with a light looking for the loot, digital art

Low-Stake

There are **3** required low-stake items that everyone will be doing. They are outlined below. There are then some additional low-stake items that you can choose from to complete towards your grading agreement.

Required Low Stake Assignments (RLSA)

1. **RLSA:** Weekly Exit Ticket: Expected Time 5-10 minutes per survey

> These are to help you understand your own progress and are analytical reference markers for me to make sure that I'm presenting material that aligns with your needs and that I'm able to be agile enough to make adjustments at a weekly level as needed for your best interest. They also help you reflect on what you're learning to keep you engaged and provide you input into my adjustments.

2. **RLSA:** GitHub Profile Setup: Expected Time 45-90 minutes

> We will be learning the basics of git and general version control practices within the first two weeks. This Low-Stake assignment is for you to setup an outward facing GitHub profile page. I've included mine as a reference as well as others that you can look at. John GitHub Profile Page

3. **RLSA:** Grading Agreement Check-Ins: Expected Time 15 minutes 2-3 times per semester

> You will be required to meet with me one-on-one to discuss your progress and your grading agreement. I will be accommodating to schedules as needed. These meetings are designed to make sure to address any questions you have and to make sure you're on-path to deliver your working project.

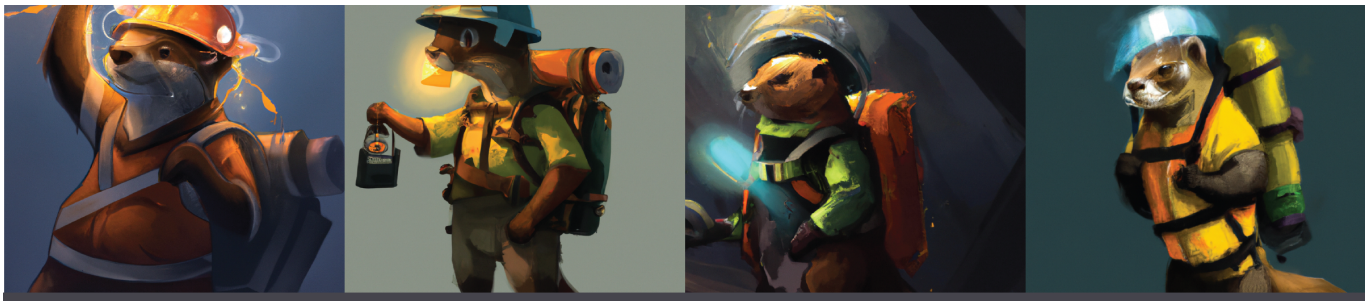
Optional Low Stake Assignments (OLSA)

1. **OLSA:** GitHub Training: Expected time 30-60 minutes

> Pick **one** of the below training pathways and in your Weekly Trajectory Feedback Surveys: describe what you learned and invite me to be a reviewer on your GitHub repository that you're training on.
>
> 1. Extension of Introduction to GitHub: Pull Requests
> 2. Extension of Introduction to GitHub: Resolve Merge Conflicts

2. **OLSA:** Communication Training: Expected Time 60-90 minutes

> Pick **one** of the below training pathways and in your Weekly Trajectory Feedback Surveys: describe how you can apply the item you learned to help convey your project to others, to internal teammates, and/or how it contributes to your overall project strategy.
>
> 1. Communication using Markdown
> 2. GitHub Pages
> 3. GitHub Actions: Hello World



An otter wearing a backpack and a hardhat with a light looking for the loot, digital art

Medium-Stake

There are **3** required medium-stake items that everyone will be doing. They are outlined below. There are then some additional medium-stake items that you can choose from to complete towards your grading agreement.

Required Medium Stake Assignments (RMSA)

1. **RMSA:** GDD Creation and develop your Unity3d learning plan: Expected Time 2-4 hours.

> You can use an existing GDD but it needs to be updated and modified to reflect the semester project. There is also a Unity GDD template file that can be copied and I've copied that from Unity and placed it in our class Google Drive.
>
> > For developing your learning plan, this is all part of the Unity Learning environment

2. **RMSA:** GitHub Project Generation and Management: Expected Time 7-14 hours over the course of the semester

> Using GitHub project to help manage your Kanban board, expect to spend roughly 30-60 minutes on average a week managing your project board over the course of the semester. You will share your project repository with from the first initial grading agreement. Which means you should anticipate to have this setup and 'ready' by week 3.

3. **RMSA:** Game Design Program Patterns: Expected Time 1-2 hours per pattern over the course of the semester

> The use of program design patterns can be scaled as to meet the grading agreement you are set on. Using 2 of the provided packages and/or creating your own aligns for the 'B pathway' and 3+ aligns to the 'A pathway'.
>
> > I will have this fully listed by week 2.

Optional Medium Stake Assignments (OMSA)

1. **OMSA:** Data Standards: Expected time 2 hours

> Generating your own data standards and the requirements for your experience

2. **OMSA:** Changelog: Expected time 2-4 hours over the semester

> Keep a running changelog with your semester project following the Change Log Standards

3. **OMSA:** Podcast: Expected time 2-4 hours

> Listen to this Podcast and write a 1 page report on how you would update your team on this information and how this information can help your current project

4. **OMSA:** Unity Input System: Expected time 3-6 hours

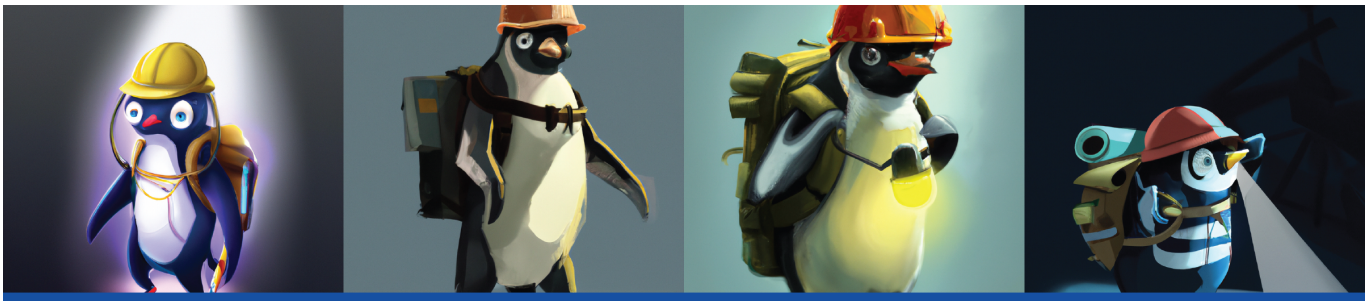
> Follow along and complete the Unity Education on the 'Input System' and implement it into your current project

5. **OMSA:** Unity Addressable System: Expected time 3-5 hours

> Follow along and complete the Unity Education on 'Getting Started with Addressables' and implement it into your current project

6. **OMSA:** Unity Animation System: Expected time 12 hours

> Follow along and complete the Unity Education on '3D Animation Systems' and implement it into your current project



A penguin wearing a backpack and a hardhat with a light looking for the loot, digital art

High-Stake

There are **3** required high-stake items that everyone will be doing. They are outlined below. High-stake items are slightly different, as they are fundamental to the class, and there is no such thing as an *optional* high-stake item. Now within the high-stake assignments you will see variations of requirements that aline to your grading agreement pathway. This class is based around the end deliverable and these high-stake assignments support that ultimate deliverable.

1. End Project Presentation

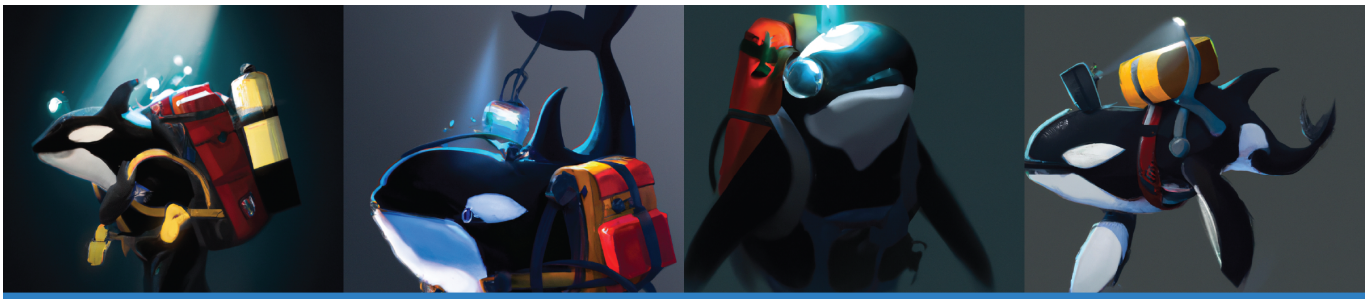
> Demo a working deployed experience via Unity3D on device and show it off during our exam time in class.

2. Unity Training

> Unity Learn is amazing and I'd be a complete idiot for not taking advantage of it in this class. **Unity** runs a few different ways of learning. You will be picking one of the Creator Kit Beginner Projects on Unity Learn and will work through it.Not all of the ones listed below are directly part of the creator kit beginner projects and we will identify these in our first one-on-one meeting.
>
> Pick a creator kit and work through a 'beginner project'
>
> - Roll-a-Ball
> - FPS
> - Beginner Code
> - Rubys Adventure
> - Puzzle
> - RPG
> - Haunted Jaunt
> - Particle Systems
> - Creative Core: Animation

3. Unity Live Learning Presentation

> Register for one Unity Learning Course from the Unity Learn Live Calendar
>
> > Provide a one page write-up or be ready to present a small (less than 5 slides) two minute presentation on how the live learning will contribute towards your project. If you choose the presentation route be ready for some class questions. If you go with the write-up you will have to use markdown or latex to right your report in.



A killer whale wearing a backpack and a hardhat with a light looking for the loot, digital art

Grading Agreement Details

In order to be eligible to pass this course with a **'C'** you *must* complete all required stake assignments - I've based these requirements on the expected minimum amount of time spent outside of class. If this is your *goal* I suggest you drop the class. I will be making some changes to these agreements within the first week and they are not initially due to me until the second week.

An 'A' Contract

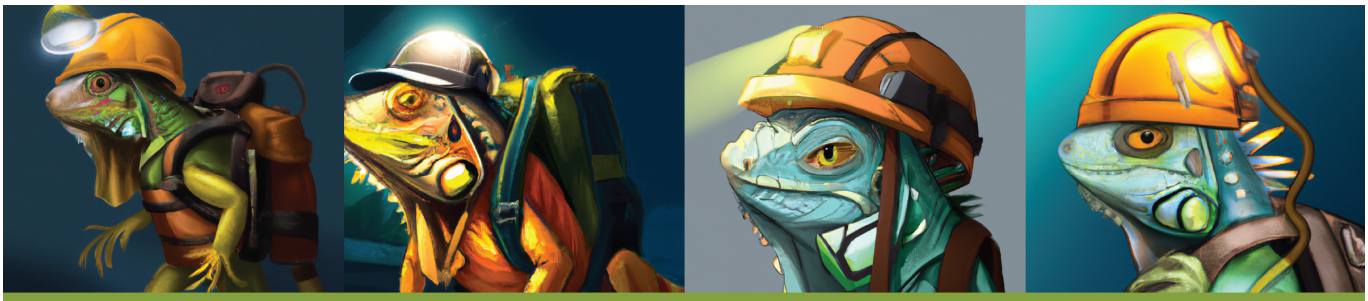
An A in this class requires you to go beyond the normal expected allotment of time for this class. The typical rule is 3 hours per 1 hour of in class time. A 3 credit class then would require about 9 hours of additional weekly time spent on a single class. Given that this class is software intensive and we are all coming at it with different backgrounds this is going to range wildly across each individual. To maintain that this class is accessible but also realistic in your expectations, expect to use my office hours a lot, expect to put additional time after class to fully grasp all that you could do within Unity, expect lots of failures, and you shall be rewarded. My main job for you within an A contract is to help limit your focus so you set a good cadence and still maintain realistic hours within the time frame alloted for this class.

- Complete all Required stake assignments
- Complete 4 Optional Medium Stake Assignments
- Complete all optional Low Stake Assignments
- Submit 12 Weekly Exit Tickets
- Your experience compiles and runs on device with no major issues.
- Show up prepared for at least 3 conferences with me
- *Create your own Unity Package and host it on GitHub - will talk more about this later

A 'B' Contract

A 'B' in this class is easy to get. Show up and use the lab time wisely and most of you should be okay. I hope that by setting this contract slightly above a C but way below an A that it gives you that extra peace of mind to know that you will pass the class by contributing and being part of the process - this is important in industry and contributing towards a better community. I hope that this also then encourages you to push for that next level contract.

- Complete all Required stake assignments
- Complete 2 Optional Medium Stake Assignments
- Submit 9 Weekly Exit Tickets
- Your experience compiles and runs on device
- Show up prepared for at least 2 conferences with me



An Iguana wearing a backpack and a hardhat with a light looking for the loot, digital art

How to Exceed The 'B'

Students earn **As** by completing additional labor and engaging with the course in more independent, meaningful and exemplary ways, and sharing it with their classmates and I to enrich our understanding, further our learning, and expand our community of practice.

At the end of the semester, you will meet with me for a 15-20 minute conference during the final week of the semester. You will complete your final Grading Agreement & Goals Check-In before our meeting which asks you to return to all of the work you completed throughout the semester. The goal is for you to see your learning by comparing earlier and later understanding. I want you to feel pride for your work. It also gives you an opportunity to review class material which is important for retention. **If this process gives you anxiety, come speak to me at any point during the semester to confer about your progress in the course.**

Grading Agreement Check-Ins

Through periodic grading agreement check-ins with students we will work together to make sure you stay on track and get adequate feedback from myself. We are doing this by setting goals and documenting your progress with me. This helps maintain that you've finished the required assignments and are still on track for your grade completion (we want to ensure you meet **ALL** requirements). This is very similar to how you make sure you're on track to graduate - we just go down the list of assignments you've agreed upon and do a quick status check of them and course correct as needed. I generally set this up with everyone and try to meet everyone one-on-one before the end of September, we then meet again one-on-one sometime after fall-break, and then we meet again right at the end of the class.

- I hope you feel encourages to take added risks and pursue projects you are passionate about.
- Your classmates and I will be able to respond to your work as colleagues and readers, rather than judges and critics.
- You should always have a sense of what your grade is. That being said, if at any point you have any doubts or want additional guidance, just let me know.

We will talk more about what this means and you will be given the opportunity to consider what this looks like for you over the course of the semester.

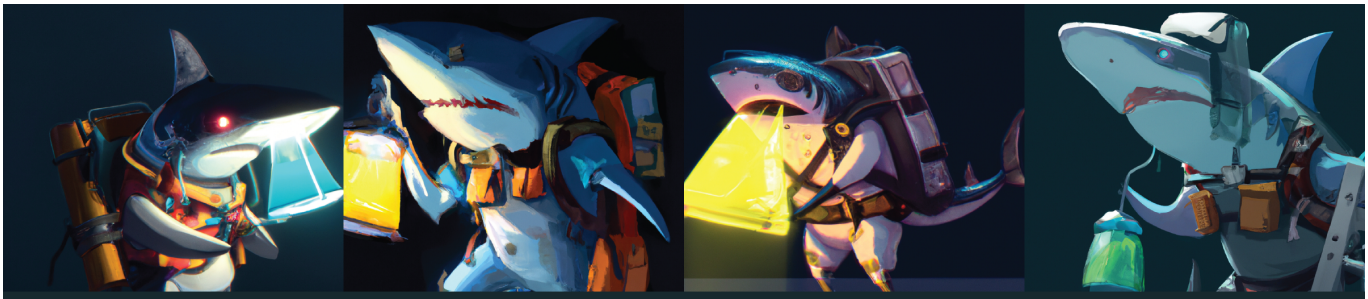
Late Work & Grace Period

My late work policy includes a Grace Period that should cover most of the problems that arise (e.g., academic conflicts, illness, religious holidays, personal issues). It applies to most assignments and can be used multiple times throughout the semester. You do not need to ask in advance or explain why your work is late. Instead, just use the Grace Period explained below:

> 1. The Due Date is the day your work is due.

> 2. The Grace Period occurs between the Due Date and the Deadline. Every student has a 3-day Grace Period after the Due Date during which an assignment or project can still be submitted. Work submitted during the Grace Period will be marked as late; however there is no grade penalty during the Grace Period.
> 3. The Deadline comes 3 days after the Due Date. There are no extensions on the Deadline date. If you do not turn in your work by the end of the Grace Period, you will receive a “Not Submitted” for that assignment and may not receive feedback for revisions after that.

Extenuating Circumstances: In the case of extenuating circumstances, contact me as soon as possible. As long as you are honest and timely in letting me know what’s going on, we will most likely be able to work something out.



A shark wearing a backpack and a hardhat with a light looking for the loot, digital art

Time & Money

A big piece of this class is your time with me in the lab. I believe that a *topics* class like this one are best designed to be places to work through material and learn from your instructors. I believe in opening up my time to all of you to utilize it as you all need it. I am making myself available roughly 50% of the in class instructor time; instead of lecturing at you - I want to help you become the best you within software & Unity. I want to break some things down for you to explain how this works from a cost benefits analysis perspective. This is a 3 credit class, current odu in-state undergraduate rates places this class at approximately *3x$360* = **$1080**.

> If we break down the time we meet: 75 minutes per class, accounting for holidays in the Fall semester of 2022 you get me for 27 classes, or 2025 minutes. My plan right now is to use approximately 825-1050 minutes towards lecture, leaving you roughly 975-1200 minutes for in-class software use towards your project and *consultant time* with me. This means overall the class is costing you $0.50 a minute (ballpark). If you were to contract me as a private consultant, my rate is roughly $150-$200 an hour depending upon what the level of need is. If you take the time leftover to utilize me as a consultant in this class (975-1200 minutes or roughly 20 hours) my cost to you is roughly $4000 and that's just for half of the time mentioned, so for the full time you're getting me for roughly 1/8th the cost. *This doesn't even include the additional hours weekly I hold for office hours*. I point this out because I believe in transparency and I want you to know how the rest of the world operates. This is not a way to boost my own ego, but hopefully for you all to fully understand and appreciate the cost of scale when taking these classes and to get the best bang for your 💵 I would like to utilize every minute you have within this class with your fellow classmates and with my time and experience to help you escalate your capabilities and build that confidence! If you strive for the highest grading agreement offered and hit it; I will personally write you a letter of recommendation as needed, when needed, as long as you notify me with at least two weeks notice. This offer will be good the moment your grades post and is good until December 31, 2025.

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a video game character based on the expression: "It’s Corn A Big Lump With Knobs, It Has the Juice, I Can’t Imagine a More Beautiful Thing", digital art

a video game where you are a large piece of corn that has to jump over rivers of butter, digital art

University Policy

You should be aware of University policy towards student conduct & academic integrity. I do not set these policies but as students at ODU you are required to adhere to them and equally I am here to make sure that we stay transparent to what is prohibited. Please make sure you review this information as there are a lot of cases in which you might not think you're violating a policy but in actuality you are. Please see the ODU Office of Student Conduct & Academic Integrity for additional information.