**Project Objective - Create a working 3D action game with the unique ability to eat enemies and gain their abilities for more advanced combat.**

**Deliverables**

* Progress reports
* Software
* Final report
* Poster

**Milestones (not necessarily in order)**

More in-depth, constantly updated checklist [here](https://trello.com/b/6mFhzQon/2023-senior-capstone)

Unity/Scripting:

* Download and set up all necessary programs on all workstations
  + School laptops
  + Home PC
* Set up Unity project
* Set up Unity Teams to collaborate across devices
* Make a basic first-person controller
* Make an environment/landscape
  + Temporary environment
  + Procedurally generated ground
  + Create basic biome system
* Make a basic enemy AI
  + Special Characteristics for Certain Enemies
* Make a basic tool system (tool in hand, able to use)
  + Simple projectile + physics
* UI elements
  + Title screen
  + Menu (esc)
  + HUD
* Saving progress
* Ammunition system
* Inventory

Other/Assets:

* Decide Color Scheme and Environment Styles
  + Basic Color Scheme
  + Different Environments
  + Structures
* Making models
  + Enemies
  + Plants/Environments
  + Damaged Enemy Models
  + Boss Models
  + Damaged Boss Models
  + Player Model (For cutscenes)
  + Player Arms (for different things eaten)
  + Tools
* Making animations
  + Enemies
  + Plants/Environments
  + Bosses
  + Player Arm’s
  + Tool Animation
* Making sprites/art
  + Title screen
  + Inventory item sprites
  + HUD assets

Milestones: Starting Actual Coding (16 weeks)

These may change depending on how well we are able to adapt or whether we find it necessary to do certain parts first.

* Pre-weeks
  + Basic story
  + Learn about making mechanics
  + Basic visual discussion
  + Get assets
  + Setup Unity
* Week 1
  + Obtain assets and look over what we have to use
  + Look over the mechanics of the game: What do we need? (Physics engine, enemy models, and environment).
  + At this point should have basic (almost fully) laid out plot line, ideas for progression through the game, the location of biomes and special areas, and basic map of the world
* Week 2
  + Begin making the game physics and models. (Need a base environment to test physics on)
  + Tyler - Focus on a basic physics to be tested on the character, make the bean
  + Brodie - Make a basic model for the players arms, make a basic environment to test on, and begin working on the other models
* Week 3
  + Refine the physics and begin working on the enemies (basic)
  + Tyler - Fix any mistakes on the physics model for the player and add in a starting tools system (projectile physics)
  + Brodie - MAke models for the enemies (as many as you can), give them a simple pathing system, also make a basic tool model
* Week 4
  + Make a health system for both the player and the enemies and begin testing the combat
  + Tyler - Work on the biting mechanic (the area it will affect) and a health system to place onto the player and the enemies
  + Brodie - Work on enemy movement patterns and how they react to proximity to player, work on models for when enemies are damaged or bitten
  + (if possible also make physics system for enemies when damaged and destroyed like ragdoll)
* Week 5
  + Test #2 for combat this time with revised health, new sprites and models, and updated physics for enemies
  + Tyler - Finish working on the health and any changes that need to be done to the physics model, make a basic HUD
  + Brodie - Finish working on sprites, begin working on the starting environment for the player and the basic land areas for each biome, and make the city setup
* Week 6
  + Work on the environment and collision for the entire kingdom
  + Tyler - Work on the collision system, create invisible walls, and fill those in on the basemap for the environment
  + Brodie - Work on the basic layout of the map as well as the design and location for each of the biomes, bosses, and quests
* Week 7
  + Do the same thing as last week; add more detail to the map
* Week 8
  + Continue last week but also add in the enemy spawn locations and how they will be spawned in
  + Tyler - Work on the spawning mechanic for enemies
  + Brodie - Work on where the enemies will spawn and any good locations for an encounter as well as detail these environments a little better
* Week 9
  + Focus on the biting mechanic, run tests, make models for the players arms, and divide the destructible portions of enemies
  + Tyler - Focus on the bite mechanic, the area in which the bite will hit, the upgrades the bite can have, any special features you want to add to the bite, how long it takes, etc.
  + Brodie - Make the models for the arms after each bite (the transformation into a resemblance of the enemy), make models for the bite marks of each enemy, similar to the destructible demons model for DOOM where there are models already in place to be switched out onto the enemy.
* Week 10
  + Focus on tool mechanic, skill tree, and enemy loot
  + Tyler - Make the different definite mechanics for all the tools by adjusting the projectile physics and make the skill tree physics based on our decided upon skills
  + Brodie - Design the loot drop system and physics as well as the models for the loot. If not already finished, finish designing the tools. Make complete skill tree with pricing for each skill and design what the tree will look like
* Week 11
  + Boss monsters
  + Tyler - Focus on boss monster physics, how they hit, where they can take damage, their physics
  + Brodie - Create models for the boss monsters
* Week 12
  + Saving system and settings
  + Making a saving system where the game is automatically saved
  + Add a settings system where the player can adjust volume and other things
* Week 13
  + Music and Voice acting
  + Allow people to apply for rolls to voice for
  + Tyler and Matt (if willing) make music for the different biomes
  + Add in wall for the transfer of one song to the next
* Week 14
  + Add in cutscenes at predetermined points in time
* Week 15-16
  + Polishing and Revision

**In scope**

First-person, single player game

Player physics

Tool system for player

Enemy physics

Different physics for certain, special enemies

Gaining certain materials from enemies to upgrade self and tools

Eating Feature along with different models for each enemy eaten

Environment with several biomes and collision

Procedurally generated structures/plants on top of given environment

At least 2 bosses

**Out of scope, aka limits and exclusions**

* Multiplayer
* Non-Windows support (mobile)
* Auto-generated quests
* Adaptive Music
* Complex NPC interactions
* NPC following you