

# Hello Virtual Environment Development`

5CM503 Virtual Environment Development

Dr Patrick Merritt

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- What is VED?

# Who am I?

- You should all know me by now, but just in case...
- Dr Patrick Merritt
  - MS 308
    - Generally, on Site Monday, Tuesday and Thursday.
    - Open door policy, come say hi, headphones are usually just for music.
  - Email:- [p.merritt@derby.ac.uk](mailto:p.merritt@derby.ac.uk)
    - Email responses are up to two working days, if you have not heard back with two working days, it is acceptable to send a reminder.
  - Teams:- [Same as my email or click!](#)
    - Teams is generally faster, got a question? Ask it here!

# Last minute switch

- I am currently covering for Chris Windmill
- He will take over at some point, I will keep you up to date as I get more information.

# Lab / lecture schedule

- 1 Hour lecture a week for 24 weeks.
  - 1 whole day of your life will be spent listening to me.
- 3 hours lab each week.
  - These are shared with 2 other modules, graphics and real time environment development.
  - Rotates weekly, starting with game engine systems.
  - I will try and be available for all sessions, but I will at the very least be there in sessions 1, 4, 7, and 10 in term 1. (Term 2 to be confirmed based on schedules).

# What is VED

- It is the process of creating virtual environments
  - How does the world we are playing come to be?
  - How do we design it?
  - How does it get built?
  - What do I need to know?

# Planning...

- For the most part, in most modules so far you have been given a clearly defined goal and been told what you must achieve.
- Here you have a much more free reign of what you must build based only on a theme.

# The Theme





# NO! I expect you to die!

- This is your “seed” to provide some inspiration.
  - *The statement not to movie clip!*
- You will design and build one full level of the game.
- You must include at least one “combat” element in the final game.
- Other than that, pretty much build whatever you game.

# What do we mean by combat?

- Something adversarial...
- So, the traditional bullet meets bad guy easily meets the brief.
- But so would a card battle...
- So would Mario-style boss battles...
- Quite a few options here, if in doubt ask!

# The Coursework

One big one, lots of writing...

# Component 1) Design and build a level

- This component requires you to go through the level design process from creating a level description from a simple brief, through layout, block out and grey-box models before looking at the impact of lighting on performance and perception.

# Component 1) cont...

- A brief description (500 words maximum) of the environment you plan to build with supporting images (may be AI generated) showing the look and feel of the environment.
- A layout diagram for your level showing points of interaction, interest, combat, and other relevant factors.
- A white box/block out of your level using primitive models.
- A grey box of your level replacing the primitive models with sourced/created assets.
- Lighting applied to the grey-box model demonstrating the appropriate use of static, stationary, and dynamic lighting.
- A short critical review (500 words maximum) of your work, optionally a peer review (250 words maximum).

# Component 2) Gameplay Interactions

- This component requires you to develop gameplay and character mechanics that interact with your level design and demonstrate your ability to design and test mechanics within a prototype environment.
- A brief description (500 words maximum) of your planned interactions demonstrating appropriate use of interactions with single and multi-stage events.
- An interactive and real-time instance of your [component 1] level or a **level provided by your tutor**.
- A set of character mechanics that interact with the level design.
- A set of gameplay mechanics that define the style and feel of the game.
- A gameplay interaction.
- A short critical review (500 words maximum) of your work, optionally a peer-review (250 words maximum).

# Advice, document everything...

- A lot of the work for the assignments for this module is reports.
  - Yes, with references supporting your arguments.
- Building the thing is not enough, you must be able to document and discuss why...
- I advise you to keep a development diary where you write down the key decisions and choices you make and WHY you made them.
- I **Believe** Chris has set this up as a long slow burn with one delivery point.

# Plan

Step one:- Plan everything.



# We sort of did this last year...

- We looked at the game design document last year in a very superficial manner.
- Got you to start thinking about the planning process.
  - But let's be honest most of you did it after the fact
    - I'm OK with that.
- Now let's engage with this process properly...

# The GDD

- As a minimum 4 key parts.
- The Executive
- The Description
- The Target
- The Plan

# The Executive Pitch

- 1 or 2 paragraphs that explain the game idea and its USP to an interested party.
  - USP = Unique selling point. The thing that makes people want to play your game.
  - Doesn't necessarily need to be "original" but it's the "unique" thing you are providing.
  - Justify why someone, as a player, would invest in this game.
- If you find you can't explain your idea here, it's probably not defined well enough.
- An overview so only the important details.

# The Description

- Describe the game ***IN DETAIL...***
  - No such thing as too much detail but start with the easy stuff and work outwards.
  - Genre, theme and mechanics
    - Genre is the type of game (RPG, FPS).
    - Theme is the setting for your game (Western, Futuristic).
    - Mechanics refer to the key gameplay actions (Wall running, Dodging, singing)
  - <https://firith.studio/game-idea-generator>
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# Details...

- The details you add will depend on the game you are making.
- A platformer game such as Mario will probably have a pretty extensive character design section.
- Open-world games and RPGs probably have extensive Lore and setting documentation.
- Puzzle games probably have highly detailed mechanics descriptions.

# Pillars

- At this point, it's usually a good idea to define the pillars of the game as part of the description.
- What is your game going to be known for?
- Usually at least 3
- Form single-sentence statements.
- A studio can also have pillars, what are the studio's games known for?

# Super Mario Odyssey

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- Pillars from the game?
- Pillars from the studio?



# The Target

- Define who you are making the game for and why they would want to play it.
  - If you cannot justify a player base, you should question why you should make this!
- This doesn't mean a monetisation plan, not all products need this, but it can form part of this.



# The plan

The most important part.

Given the time and resources you have **OR** the time and resources you are requesting...

# The plan

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Given the time and resources you have **OR** the time and resources you are requesting...

## Can you build this?

# The plan

The most important part.

Given the time and resources you have **OR** the time and resources you are requesting...

## Can you build this?

If so prove it!

# Is it technically possible?

- The answer to this should be either yes or maybe...
  - If the answer is no, then you need to replan, you can't plan to do something you can't do!
- Define what major technical challenges you have and how you plan to overcome them.
- You can have a little bit of an unknown here, but you should have a plan to solve these
  - And a plan for what happens if it turns out to be impossible!

# Is it temporally possible?

- Can I complete this in time?
  - If the answer is no, then you need to cut features or scrap the project.
- Must be reasonable
  - There is no point in planning a project based on an unrealistic work pattern.
    - If you don't plan to work Christmas day...  
DON'T SCHEDULE WORK TO BE COMPLETED ON CHRISTMAS DAY!
- Again, the answer should be maybe, but you should again have a plan to mitigate this risk.
  - What do you do when things take longer?

# Is it a living document?

- Can I change it?
- Some say yes, some say no...
- I say yes, **BUT** do the first plan at the start and compare it to the end plan and result.
  - **Easy reflective marks in the report ;)**

# Homework!

- Start the plan! A basic plan should take a couple of hours.
- I will review these in Lab 2 or 3...
  - I will help you determine if the idea is feasible and add detail to the plan.
- If you don't do this now you will regret it later...
  - Trust me.