



Instructor Partner
2024



UNREAL
ENGINE

Game Design and Development with Unreal Engine 5

Course outlines (48 Hours)

VR *academi*

AI & METAVERSE LAB

Empowered Minds Shaping Tomorrow



VRAcademi Ai & Metaverse Lab



VRAcademi is a pioneering educational institution that leverages cutting-edge technologies to redefine learning experiences. Specializing in Virtual Reality (VR), Augmented Reality (AR), Extended Reality (XR), Artificial Intelligence (AI), and Robotics, VRAcademi aims to prepare students for the future by equipping them with the skills and knowledge needed to thrive in a rapidly evolving digital landscape. The institution offers a wide range of courses and workshops tailored to various age groups and professional levels, focusing on digital art, game development, filmmaking, storytelling, design, robotics and innovation. The AI and Metaverse Lab at VRAcademi in Dubai is a state-of-the-art facility dedicated to immersive learning and innovation.



Future-Ready Courses

Courses meticulously crafted to align with future demands, Immersive Movie Making, Robotics, Ai Coding, Unreal Engine Game Development courses authorized by Epic Games.

Innovation Hub

State-of-the-art Artificial Intelligence and Metaverse Lab serving as an incubation hub for immersive learning, innovation, entrepreneurship, creativity, and future learning.

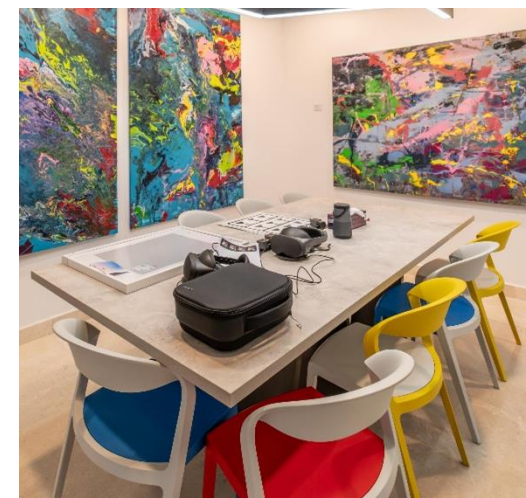
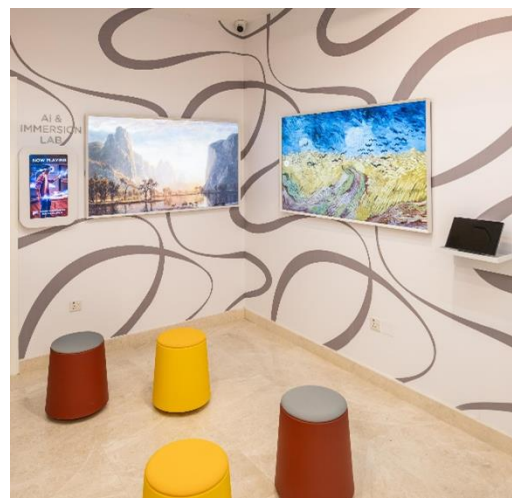


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Our Learning Environment





The XR Immersion Lab



✦✦ The Future of Game Design and Development Unreal Engine 5 - as a part of:

DUBAI PROGRAM FOR GAMING 2033



The future of Game design and development with Unreal Engine is incredibly promising and transformative. Unreal Engine, a powerful real-time 3D creation platform developed by Epic Games, has already been making significant strides in revolutionizing how creators visualize and make games. Unreal Engine is the top Game Engine unprecedented in creativity, efficiency, and innovation, ✦✦ empowering aspirants to push the boundaries of what's possible in Games!



The Future of Game Design and Development

Why to get Trained in Unreal Engine 5 for Game design & development

- 1 Real-Time Visualization
- 2 Immersive Experiences
- 3 Interactive Development
- 4 Collaborative Workflows
- 5 Procedural Design
- 6 Simulation and Analysis
- 7 Cross-Industry Applications





The Future of Game Design and Development Unreal Engine 5

1

Real-Time Visualization:

Unreal Engine's real-time rendering capabilities allow designers and developers to see their creations come to life instantly. This means no more long rendering times or waiting for previews to generate. Designers can make changes on the fly and immediately see the results, speeding up the iteration process and fostering greater creativity.



The Future of Game Design and Development Unreal Engine 5

2

Immersive Experiences:

With Unreal Engine's support for virtual reality (VR) and augmented reality (AR), the future of Game design could involve immersive experiences where clients can walk through interactive virtual worlds for rich and immersive experiences.

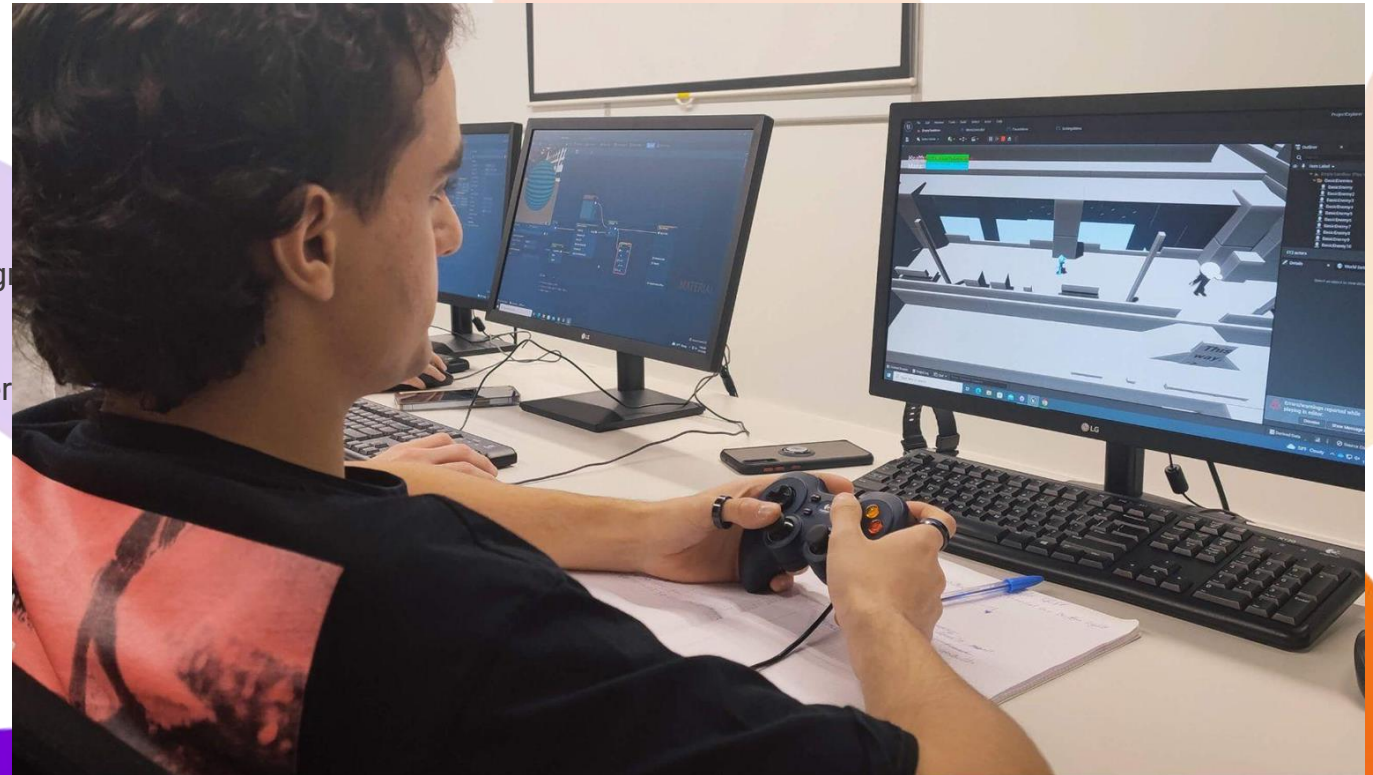


The Future of Game Design and Development Unreal Engine 5

3

Interactive Design Tools:

Unreal Engine provides a wide range of tools for creating interactive experiences, such as interactive world/level design, dynamic lighting, and interactive elements within the environment. Designers can use these tools to engage players more actively in the gameplay and fantastic experiences.



The Future of Game Design and Development Unreal Engine 5

4

Collaborative Workflows:

Unreal Engine's collaborative features enable multiple designers to work together on the same project simultaneously, regardless of their location. This fosters greater collaboration and streamlines the design process, as team members can see each other's changes in real-time and provide instant feedback.



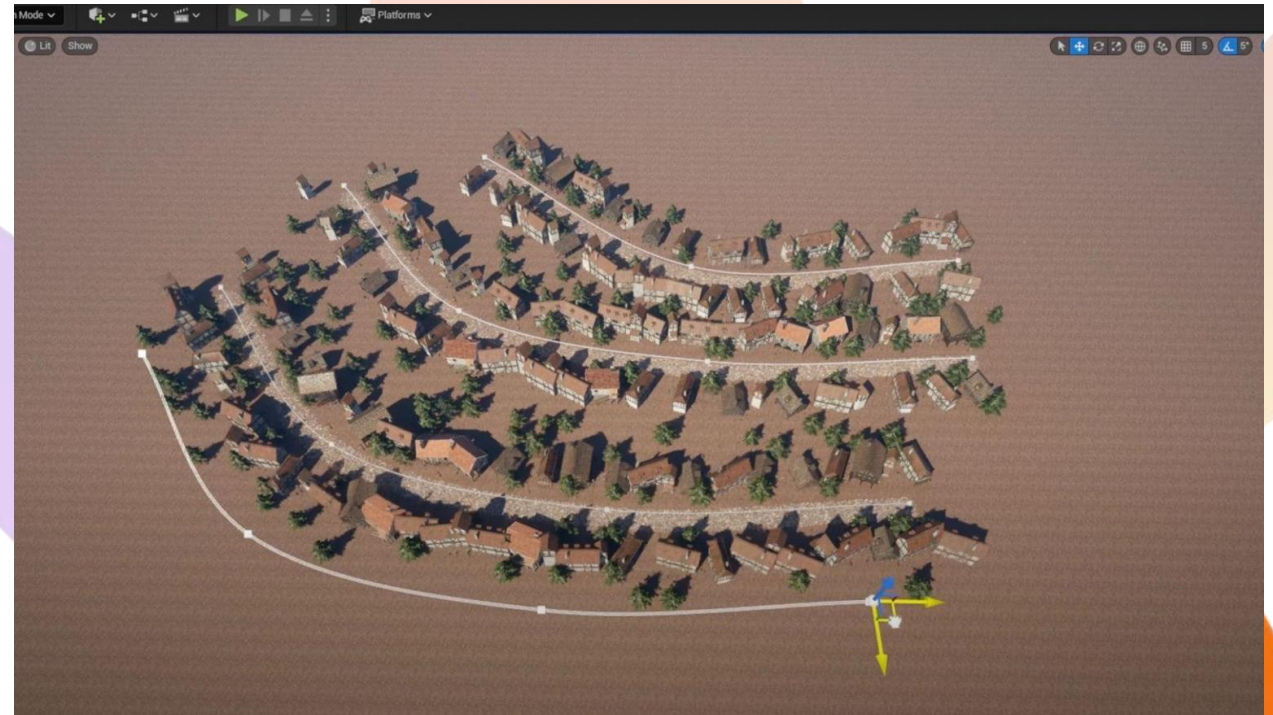


The Future of Game Design and Development Unreal Engine 5

5

Procedural Design:

Leveraging Unreal Engine's capabilities in procedural generation and parametric design, architects can explore a multitude of design variations and options automatically. This allows for more innovative and efficient design solutions by quickly generating and evaluating numerous design alternatives based on predefined parameters.



The Future of Game Design and Development Unreal Engine 5

6

Simulation and Analysis:

Unreal Engine's integration with simulation tools enables learners to simulate real-world conditions such as lighting, physics in Games, acoustics and structural integrity. This allows for more informed design decisions and helps identify potential issues early in the design process, ultimately leading to better-designed replica of real-worlds in Games.



The Future of Game Design and Development Unreal Engine 5

7

Cross-Industry Applications:

Beyond traditional game design, Unreal Engine is increasingly being used in fields such as simulations, architecture, interior design, and product design. The future will likely see even more diverse applications of Unreal Engine across various industries, further blurring the lines between virtual and physical design and this Course helps as a foundation for every industry vertical.





48 Hours Course outlines

The Future of Game Design and Development Unreal Engine 5

Programme Highlights

With this in-depth course on interactive Game development in Unreal Engine 5, you can maximize Unreal Engine's capabilities for Game design. This course will equip you to produce breathtaking, physics based interactive representations of game projects, for every level.





48 Hours Course outlines

The Future of Game Design and Development Unreal Engine 5

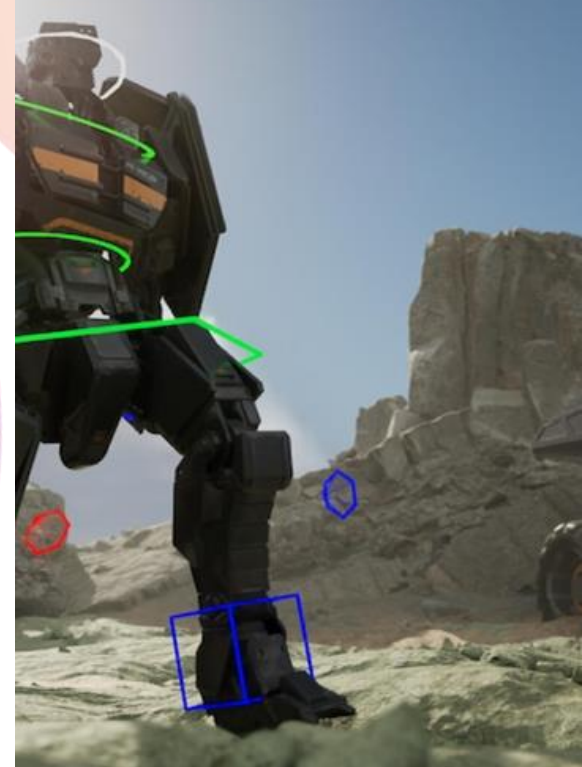
Learning Objectives

- Understand the basics of game development in Unreal Engine.
- Understand level design within Unreal Engine.
- Master the creation of interactive elements using Blueprints and scripting.
- Learn to set up landscapes and 3D virtual worlds in Unreal Engine.
- Understand what are procedural generation and design techniques in Unreal Engine.
- Gain proficiency in integrating AI based character workflow with Unreal Engine.
- Explore the animation blueprints for games of Unreal Engine beyond casual learning.

Learning Outcomes

At the end of the course you will be able to:

- Proficiency in creating game designs and virtual environments.
- Capability to develop interactive walkthroughs with physics principles.
- Ability to handle games and lighting in compile-time and real-time.
- Ability to develop your own portfolio for moulding your gaming career.





48 Hours Course outlines

The Future of Game Design and Development Unreal Engine 5

Programme Highlights

Introduction to Unreal Engine

Introduction to Unreal Engine and
Game Design Document Essentials

First Project in Unreal Engine

Create new project
Templates
Editor Interface
Cartesian coordinates and pivot
Transformations, Local and World, World Outliner
Navigation in a level and Play test

Landscaping for 3D level design in Unreal Engine

Working with Geometry in Unreal Engine

Geometry Optimization in Unreal Engine
Geometry Editing in Unreal Engine
Copying, Merging and Placing Assets in the scene
Post Process Volume and Interior SunLight
Solving the problem with Light Artifacts

Materials and Shaders

PBR Workflow, Exterior Materials
Interior Materials, Two-sided Material
Recessed Lighting Material
Material Parameters
Material Instances



48 Hours Course outlines

The Future of Game Design and Development Unreal Engine 5

Programme Highlights

Introduction to Lighting in Unreal Engine

Interior Artificial light Settings
Exterior Artificial light Settings
Fire in the Fireplace
Setup Reflection capture probes
HDRI Backdrop
Building Light

Environment and Post Process Volume

Landscaping
Sculpt Brushes
Blueprint Brushes
Landscape Materials
Foliage and Plants
Final Post Process Volume Settings

Physics and collisions

Gravity, Friction
Collision, Simulation settings

Animations in Unreal Engine for Games

Audio in Unreal Engine for Games

Particles in Unreal Engine

Blueprint fundamentals

Getting started with Blueprints
Gameplay frame work
In-depth with Blueprints for Games

AI introduction in Unreal Engine for Games



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The Future of Game Design and Development Unreal Engine 5

Programme Highlights

Sequencer

Level Sequencer

Architecture Cinematic Rendering and Animation

UMG

UMG and Editor Utility Widget

Main Menu, Preloading Screen

High Resolution Screenshot

Reminder Bar and Quit the Project

Project Icon

Packaging for publishing

Packaging and deployment

Windows Builds and Packaging

Android Builds and Packaging





The Future of Game Design and Development Unreal Engine 5

Instructors: ISN Pradeep, Kishore Seran, DXB

Pradeep ISN and Kishore Seran are Unreal Authorized Instructors with more than 20 years of professional experience in the Media and Entertainment industry with a background of incubating hundreds of students in various interactive 3D technologies related to web, VR, architecture and gaming.



Instructors: Sonal Ahuja , City Designer, Ai, XR and Technology, DXB, London

Meet Sonal Ahuja, the visionary behind VRAcademi Ai & Metaverse Lab which was brainchild of his teenage son. With over 30 years of global expertise in managing design and cities and urban Infrastructure, Sonal is redefining education through AI, Robotics, and the Metaverse. Join the transformative journey where research meets innovation in education. Sonal is one of the founders of Ai revolution in urban landscape.

Over 25 years ago he laid down the foundations on the use of biomimicry genetic algorithms for solving complex urban problems while pursuing his PhD research at Imperial College London. A serial entrepreneur having investments in his previous companies from Porsche SE Group in Germany and Translucia , MQDC Group Thailand, he is a global pioneer in innovation.

