

Cinematic Lighting in Unreal Engine 5

Master Lumen, volumetric atmosphere, and virtual camera techniques for cinematic real-time scenes in UE5.

Design Instructor: Daniel Mercer • 5 sections • 50 lessons • 19.00h total

[View this course online](#) [Browse all courses](#)

About this course

Real-time rendering often leaves artists with flat-looking models. This course tackles that problem by treating Unreal Engine 5 as a virtual camera, giving you the tools to sculpt light, mood, and depth the way a cinematographer would. We will start with the fundamentals of lighting physics and camera basics, then move into the artistic decisions that turn a scene into a story.

You will build a complete environment from scratch, learning how to control Lumen, craft volumetric fog, set up lenses and depth of field, and apply post-processing tricks that give your work a professional finish. The format includes short video lessons, downloadable templates, and real case studies, ending with a portfolio-ready cinematic short.

Course curriculum

Foundations of Real-Time Cinematography

- **Understanding Light Physics in UE5 (9m)**
Explore how real-world light behaves and how UE5 simulates it, setting the base for believable scenes.
- **Setting Up a Virtual Camera Workspace (12m)**
Create a camera rig, configure sensor size, and learn basic framing to treat UE5 like a film set.
- **Color Theory for Digital Environments (14m)**
Apply color harmony and contrast principles to guide viewer emotion and focus.
- **Basics of Lumen Global Illumination (11m)**
Get familiar with Lumen's auto-exposure and indirect lighting defaults before taking control.
- **Introducing Volumetric Fog Fundamentals (13m)**
Learn how fog interacts with light and how to set up basic atmospheric layers.
- **Navigating UE5 Post-Processing Volume (8m)**
Discover the key post-process settings that affect mood, contrast, and color grading.
- **Building a Simple Test Scene (10m)**
Assemble a low-poly environment to experiment with lighting and camera tools introduced so far.

Core Lighting and Atmosphere Techniques

- **Manual Lumen Exposure Control (15m)**
Turn off auto-exposure and learn to balance key, fill, and rim lighting manually.
- **Crafting Dynamic Light Shapes with IES Profiles (12m)**
Import and tweak IES light profiles to give fixtures realistic falloff and character.
- **Layered Volumetric Fog for Narrative Depth (18m)**
Combine multiple fog layers, control density, and use color to tell a story through atmosphere.
- **Using Light Functions for Mood Shifts (9m)**
Apply animated light functions to simulate time-of-day changes and dramatic reveals.
- **Shadow Quality and Contact Shadows (11m)**
Fine-tune shadow resolution, bias, and contact shadows for crisp edge definition.
- **Implementing Light-Scattering Effects (13m)**
Add volumetric light scattering to enhance god-rays and atmospheric glow.
- **Balancing Ambient Occlusion with Lumen (10m)**
Adjust AO settings to complement Lumen's indirect lighting without flattening depth.
- **Creating Practical Light Rigs for Film-Style Scenes (14m)**
Set up three-point and motivated lighting rigs that translate directly to cinematic language.
- **Integrating HDRI Skies for Realistic Reflections (12m)**
Choose and rotate HDRI environments to match lighting direction and mood.
- **Real-Time Color Grading with LUTs (8m)**
Apply lookup tables to achieve consistent color palettes across shots.

Deep Dive into Lumen and Camera Craft

- **Advanced Lumen Settings for Precise GI (16m)**
Tweak Lumen surface cache, indirect lighting quality, and bounce limits for fine control.
- **Custom Lightmass Importance Volumes in UE5 (13m)**
Define importance volumes to prioritize lighting calculations where they matter most.
- **Dynamic Lens Flare and Glare Techniques (11m)**
Create realistic lens artifacts that add cinematic sparkle and depth.
- **Depth of Field Mastery with Bokeh Shapes (9m)**
Configure aperture, focus distance, and custom bokeh shapes for artistic blur.
- **Camera Movement Planning for Storytelling (14m)**
Storyboard camera moves, set up dolly tracks, and use UE5 sequencer for smooth motion.
- **Matching Real-World Lens Characteristics (12m)**
Translate focal lengths, sensor sizes, and distortion from physical lenses to UE5.
- **Lighting for Silhouettes and Edge Highlighting (10m)**
Use rim lighting and backlight to sculpt characters and objects against the background.
- **Combining Volumetric Fog with Practical Lights (15m)**
Layer fog and spotlights to create dramatic shafts and atmospheric depth.

Advanced Application , Scene Construction and Post-Processing

- **Designing a Cinematic Environment Layout (18m)**
Plan spatial composition, focal points, and walk-through paths for visual storytelling.
- **Asset Optimization for High-Quality Render (13m)**
Balance polygon counts, texture streaming, and LODs while preserving visual fidelity.
- **Creating Atmospheric Weather Systems (16m)**
Implement rain, mist, and wind particles that interact with lighting and fog.
- **Advanced Post-Processing Stack Configuration (14m)**
Layer bloom, chromatic aberration, and color grading for a polished cinematic look.
- **Real-Time Film Grain and Vignette Techniques (9m)**
Add subtle grain and vignette to emulate film aesthetics without sacrificing performance.
- **Dynamic Exposure Management for Scene Cuts (11m)**
Script exposure ramps between shots to maintain consistent brightness and mood.
- **Using UE5 Sequencer for Storyboarded Shots (17m)**
Animate cameras, lights, and actors in sequencer to match a pre-planned storyboard.
- **Audio-Visual Sync: Adding Ambient Soundscapes (10m)**
Integrate spatial audio that reacts to fog density and lighting changes.
- **Exporting High-Resolution Frames for Compositing (12m)**
Set up render passes, depth maps, and HDR outputs for post-production workflows.
- **Performance Profiling for Cinematic Real-Time Playback (13m)**
Use UE5 profiling tools to keep frame rates stable while maintaining visual quality.
- **Iterative Review and Feedback Loop (8m)**
Establish a quick review process with peers to refine lighting and composition.

- Final Polishing: Color Matching Across Shots (9m)

Apply consistent grading and LUT adjustments to ensure a unified visual tone.

Implementation & Portfolio Ready Production

- Planning Your Cinematic Short Narrative (14m)

Outline a concise story arc, define key visual beats, and map them to scene assets.

- Building the Core Set Piece (16m)

Construct the main environment using modular assets and detailed lighting rigs.

- Integrating Character Assets with Lighting (12m)

Light characters to match the scene's mood and ensure seamless integration.

- Animating Camera Moves for Emotional Impact (15m)

Create smooth dolly, crane, and handheld motions that enhance storytelling.

- Applying Narrative-Driven Fog and Atmosphere (13m)

Use fog density and color to reflect plot tension and scene transitions.

- Fine-Tuning Lumen for Scene-Specific GI (11m)

Adjust Lumen parameters per shot to keep lighting consistent across the short.

- Adding Practical Effects: Sparks, Light Leaks, and Lens Flares (10m)

Layer visual effects that reinforce the cinematic feel without overloading performance.

- Compositing Final Frames in External Software (12m)

Export passes and assemble the final video in DaVinci Resolve or After Effects.

- Sound Design and Music Sync (9m)

Match ambient sounds and musical cues to visual beats for a cohesive experience.

- Creating a Showreel Clip for Portfolio (8m)

Edit a 30-second highlight reel that showcases lighting, composition, and mood.

- Optimizing the Short for Real-Time Playback (13m)

Compress and package the final short for streaming or interactive demo.

- Preparing Presentation Materials and Documentation (10m)

Assemble screenshots, breakdowns, and a project brief for client or employer review.

- Gathering Feedback and Iterating on the Final Piece (9m)

Use peer critiques to make final adjustments and polish the short to professional standards.

Discover our blog

Learn more with free articles written by our professors and guest experts.

Latest article: **[Flight Attendant Preparation: What to Study Before You Apply](#)**

[Visit the blog](#) [All courses](#) [This course](#)