

Lesson 2 Extra Modules

This lesson comes with 8 Extra modules. For each module there is a video, and a scene file with the same name in the Lesson 2 folder.

Aerial Perspective

This extra module covers the settings of the **Aerial Perspective** effect found in the **Environment** settings. It allows us to simulate volumetric effects like thin mists. It uses a simplified method of calculation which doesn't create volumetric shadows, but creates realistic results that can be used for different artistic effects. This effect is mainly used in large scale scenes (looking at a city from far away) to simulate the effect of looking at far away objects through the earth's atmosphere.

Advanced Sun & Sky Parameters

In this module, we cover more of the settings of the V-Ray Sun and Sky system. We use the filter **Color**, **Turbidity** and **Ozone** parameters to affect the color of the illumination coming from the sun as well as the colors of the sky. The **Affect specular** option is used to control the effect the sun has on specular reflections. We can use it to modify how bright specular reflections are and to fix over bright spots in the specular reflections.

Environment Overrides

In this module, we cover the **Environment Overrides**. These options allow us to have different images to act as an environment when calculating effects like reflections, refractions and GI. This allows us to have more artistic control when creating the final image. For example, we can have one environment/image in the background but another image/environment visible in the reflective or refractive objects.

Advanced Camera

In this module, we cover the Advanced options of the V-Ray **Physical Camera** settings.

- **Film Sensitivity (ISO)** controls the sensitivity of the virtual film/sensor - higher values make the image brighter
- **Aperture (F number)** controls how open the lens aperture is. Lower values mean a wider open aperture which lets more light into the lens and makes the image brighter.
- **Shutter Speed (1/s)** controls the speed at which the shutter opens and closes. This value is in inverse seconds which means the actual speed is 1 divided by the specified value seconds. Higher values make the shutter open and close more quickly which lets in less light and makes the image darker.

All the lights in the scene have been set with realistic intensities and the EV has been pre-set to have a reasonable exposure. Play around with each of the three parameters and note how they affect the final image. This approach is suitable for matching real-world photos to a CG image because the **Physical Camera** parameters match the settings of a real-world camera.

Mesh Light

In this module, we demonstrate the process for turning objects into light sources. The standard approach is to apply a self-illuminated material to a mesh and then rely on global illumination to gather light from it and illuminate the scene. This approach however requires high GI settings and doesn't always produce reliable results. With V-Ray you can pick any mesh and turn it into a real direct light with a few clicks shown in the video

Advanced Lens Effects

In this module, we demonstrate how you can control where the **Bloom** and/or **Glare** effect is applied using a selection mask based on the **Intensity** of the pixels in the rendered image. The Intensity masks work straight forward. The **V-Ray Frame Buffer** holds the image in a **32 bit floating point format**. Using the intensity mask V-Ray applies the Bloom and/or Glare effect only on pixels with Intensity higher than the one specified in the Intensity parameter. This allows you to avoid "blurring" the entire image and have the Bloom/Glare effects applied only on the bright areas of the image.

Proxy Shading

In this module, we discuss how to apply multiple shaders to a V-Ray Proxy geometry. This is useful when we have a complex geometry that requires different materials for different parts of the geometry i.e. a tree with leaves. For this to work the original geometry should have proper face IDs setup. If that condition is met we can use the **Multi Material** to apply different materials based on face IDs.

Advanced Fur

In this module, we look at controlling some of the **V-Ray Fur** settings using a texture. The **Length**, **Thickness**, **Gravity**, **Bend** and **Density** textures can use a grayscale texture. The values in the texture are multiplied by the value set in the **Basic Parameters** where White = 1 and Black = 0. The **Bend Direction texture** and **Initial Direction textures** can use an **RGB texture** to control the direction of the bending and the initial rotation of the strand in texture space: the red channel controls the parameters along the **U direction**, the Green channel - along the **V direction** and the Blue channel along the **surface normal**.