Caddie Visual Image Output (Vio) Photorealistic Rendering Application Online Course

Prerequisites for Completing the Vio Course
Before undertaking the Vio course, you should:

- Have access to Caddie software, a recent version, (licenced or evaluation) and an internet connection.
- Be computer literate and knowledge of using the Windows Operating System.
- Successfully completed the Getting Started with Caddie Online training course, Caddie Basic classroom course or the equivalent self-taught experience.
- Have a reasonable understanding of the principles and terminology of photorealistic rendering.

Downloading and opening a Caddie Course Exercise
You will become familiar with the structure of the course including the practical exercises requiring you to download and open an example drawing in Caddie and the associated questions linked to them.

- Where to find the course exercises
- How to download the Caddie .DWG course files

1. The Essentials of Rendering

- Caddie's Vio Application and commands
- Objects that render and ones that do not
- Parallel and perspective views
- Panning, zooming and orbiting a model
- 3D views: saving and recalling 3D views
- Showing and hiding objects in a view
- Materials and rendering.

2. Vio Rendering Environment

- Setting the location, orientation and date
- Selecting a lighting scheme
- Deciding between natural lighting, sky brightness, sun intensity, artificial and ambient lighting

3. Materials

- Accessing and Navigating the Render Materials Dialogue
- Accessing and navigate the render materials dialogue and the render materials commands
- Previewing the render materials
- Render material commands

- Creating Materials
- Accessing and navigating the materials dialogue
- Finding and using pre-defined materials
- Creating basic and texture based user-defined materials

- Applying Materials
- Choosing the object to apply a material to
- Applying a material to an AEC object
- Applying a material to a simple object
- Selecting a material
- Applying materials

- Advanced Material Properties
  - Adding a material to multiple AEC objects
  - Managing an AEC object's materials overrides
  - Adding and using materials from the catalogue
  - Aligning and scaling a material to an object
  - Applying materials to a symbol or catalogue item

- Modifying Materials
  - Applying different finishes and bumps
  - Fine tuning the settings using the Advanced Editing tools, with examples of:
    - Paving
    - Wood
    - Grass
    - Brick
    - Glass
    - Water
    - Mirror

4. Lighting

- The Types of Artificial Lights
  - Distant light - A light that emits parallel rays of light in a specified direction starting from a fixed point.
  - Point light- A light that emits rays in all directions
  - Spot light - A light that emits a cone of light in a specified direction.
  - Strip light (goniometric light) - A light that emits rays of light along a specified path.

- The Lights Dialogue
  - Accessing the lights dialogue
  - The symbols used to represent different types of lights
  - Changing the name of a light
  - Making changes to lights using Object Properties
  - Switching lights on and off
  - The controls on the dialogue

- Inserting Artificial Lights
  - Adding and orientating a distant light
  - Adding a point light
  - Adding and orientating a spot light
  - Adding a strip light (goniometric light) with two or more nodes

- Modifying Artificial Lights
  - Adding lights to your model
  - Selecting an existing light
  - Moving and re-orientating a light
  - Light properties and modifying them
  - Deleting a light
  - Using photometric format such as: Illuminating Engineering Society (IES)

5. Shadows

- Types of Shadows
  - Creating hard and soft shadows from natural and artificial light

- Shadow Parameters
  - Turning shadows on and off for individual lights
  - Shadow resolutions, quality, softness and tolerance

6. Backgrounds and Foregrounds

- Inserting Backgrounds
  - Using a pre-defined or user-defined image as a background
  - Adding an image as a background
  - The parameters that can be adjusted for pre-defined and image based backgrounds
  - Using the 'Panorama' background option to add a background that rotates with views

- Inserting Foregrounds
  - The predefined options for foregrounds - snow and fog
  - Adding an image based foreground such as an image of rain
  - Adjusting the parameters of foregrounds

7. Rendering

- Render Settings
  - Rendering to screen and file
  - Adjusting the render quality
  - Rendering parts of the scene, as well as the whole scene
  - Changing the output format size and file type
  - Progressive rendering and interrupting the render
  - Logging render settings and comments

- Tone Mapping
  - Adjusting the brightness of the rendered image
  - Changing the contrast of the rendered image
  - Changing the colour balance by adjusting the Gamma Settings

8. Recalling Render Settings

- Recalling settings
- Backing up Vio render settings
- log and comment settings
- Migrating Vio settings

9. Sun Studies

- How to access the Sun Study Command
- Setting the views for the Sun Study
- Setting the Day and times for the Sun Study
- Compiling the Sun Study renders into a drawing or HTML file

10. Rich Photorealistic Content (RPC)

- The options for the RPC dialogue
- Inserting an RPC object
- Rotating an RPC object
- Using Object Properties to change RPC's
- Scaling an RPC object

11. Studio ShadowCast

- The advantages of using Studio ShadowCast rather than a ground plane
- Selecting the Studio ShadowCast Scheme

12. Using Vio for a Walkthrough of Your Model

- Defining a walkthrough
  - Initial Set up an initial walkthrough
  - Defining a path
  - Customising a toolbar or lock toolbars for easier access to the commands
  - Modifying the camera locations and set their orientation

- Generating a walkthrough
  - Modifying the walkthrough parameters
  - Creating the walkthrough renders
  - Combining the renders into a video file

During the 12 Modules of the course, you will complete 24 lessons and associated questions including 15 exercises.

The course can be completed in one or multiple sessions and is equivalent to a half day classroom course. The duration will vary as individuals may take longer depending on their availability to study as well as their knowledge and skill level before starting the course. On average learners have completed the course within 17 hours of study with the maximum time taken of 26 hours.

You will have access to the course for 12 weeks from your enrolment date in which to complete the course. Once you have successfully completed and received a certificate for the course you will have unlimited access to revisit the course.

Accreditation for SACAP registered professionals

Caddie Visual Image Output (Vio) Photorealistic Rendering course has been assessed and evaluated by the South African Institute of Architectural Technologists (SAIAT), a South African Council for the Architectural Profession (SACAP) recognised voluntary organisation, as a Category 1 Continuing Professional Development (CPD) event for SACAP registered professionals.

SACAP registered professionals can earn 2.5 credits towards their CPD with a Certificate of Achievement for Caddie Visual Image Output (Vio) Photorealistic Rendering course.