3D Architecture Visualization Track
Using: SketchUp, V-Ray, Lumion, LayOut, Enscape

DESCRIPTION

SketchUp is a powerful free graphic modeling tool that Energy Logic has successfully adopted to streamline the from-plans rating take-off process for our clients. It has proven to be a strong tool when reviewing probationary ratings and performing quality assurance. This training is designed to familiarize you with SketchUp tool and provide you with practice designing a model using the tool. Then we will use the scripts developed by Energy Logic to generate a report designed for easy input into REM/Rate. Using SketchUp will improve your speed and accuracy in performing.

V-Ray for SketchUp is Plug- in render engine for sketch, it converts the model into real photo by editing in (Materials – Lighting – Mapping) it takes paths to get your model rendered by trying and error.

- Covers the techniques of modeling and building skinning
- Covers the basic workflow of rendering simple scene with V-Ray for SketchUp.
- Covers ways to use a variety of V-Ray Lights for both day and night renders for an exterior scene.
- Discusses the Quality of materials in V-Ray for SketchUp.
- Covers the basics on using Sun and Sky Aerial Perspective in V-Ray for SketchUp.
- Covers the full Usage of Lumion in creating 3D scenes and animations.
- What is the best techniques for animations and post productions

----

OBJECTIVES

Enable trainees to do the following:

- Knows all the Requirements to create 3D modeling using SketchUp
- The students will be armed with the background and knowledge to apply Vary for
- SketchUp: Students will learn how to create, edit and modify Materials, lights and render
- The 3D shots by 5SRW system rendering module
- Learning how to rendering still Images and Animation using Lumion

----

PREREQUISITES

- Basic knowledge and skills about using AutoCAD or Revit
- Architecture Background would a must

GRADING

Attendance   40%
Assignments   60% (Workshops & Projects)
To pass the course and receive CAD MASTERS certificate you should:

- Attend at least 80% of course hours
- Score more than 70% as a total score + Technical evaluation by the instructor

+2 010000 50300
+2 010000 93429
Cairo: 2 Hassan Afify St., Makram Ebeid, Nasr City.
Alex: Mostafa kamel st., Smoha
Kuwait: Mubarak Al kabier., Sabah Al Salem.
www.cadmasters.org

Diploma Outline:

SketchUp 3D Modeling

- SketchUp large toolset – essentials II – Modeling techniques
- Advanced techniques - Export from : 3D Max, CAD, Rhino and Revit
- Materials – Cameras – files bar – Draw - tools
- Large tool set + section plane +components + scenes + views+ exporting 2d and 3d
- Materials+ preferences +shadows + GEO LOCATION

V-Ray for SketchUp
Understanding the V-Ray for SketchUp Environment and 5SRW

- Introduction to V-Ray for SketchUp
- The Ribbon and Application menu
- Introduction to V-Ray for SketchUp
- V-Ray framing system
- Using Templates and Parameters

Introduction to framing and Cameras

- Import and Export Format
- Create advanced Camera tools
- What is Physical Camera in vary
- The render output and Camera
- Aspect ratio and Focal Length
- Fix over exposures with V-Ray Frame Buffer

Lightings

- How V-Ray Light works
- How V-Ray IES works
- How to light with HDRIs
- How to light with Rectangle light
- Create a light balance for exteriors, using V-Ray Real Time (RT)
- How to create an interior light hierarchy mixing IES and V-Ray Lights
- How to use Sphere Light
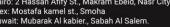- V-Ray Dome + V-Ray Sky

Materials

- Material Editor , Categories and V-Ray workspace
- Bump , Reflection , refraction and mapping
- Understand Color Mapping
- Texture editor and parameters.
- V-Ray texture editor materials
- Create materials for Carpets and Curtains
- Use V-Ray Reflections
- Complex materials using reflection/Glossy maps
- V-Ray Light material, Wood and Pool material.

+2 010000 50300
+2 010000 93429

Cairo: 2 Hassan Afify St., Makram Ebeid, Nasr City.
Alex: Mostafa kamel st., Smoha
Kuwait: Mubarak Al kabier., Sabah Al Salem.

www.cadmasters.org

Final render
- How to use V-Ray Lens controls to create Bloom & Glare
- V-Ray settings of render
- Presets and ambient occlusion
- V-Ray swarm system
- Use the Render Elements

Workshops
- Exterior workshop rendering trial
- Interior workshop rendering trial

Lumion

- **Fast Production:** Lumion offers fast rendering capabilities compared to other software, allowing designers to produce images and videos of their projects in a short time.
- **Realistic Outputs:** The software provides high-quality outputs with realistic lighting, shadows, and textures, making the designs look very close to reality.
- **Animation and Video Production:** Lumion provides tools to animate elements within the design and produce engaging videos, helping architects visually convey ideas and concepts to clients.
- **Integration with Design Software:** Lumion seamlessly integrates with popular architectural design software such as AutoCAD, Revit, and SketchUp, enabling designers to transition smoothly from the design phase to rendering.
- **Customization and Variety:** The software offers an extensive library of ready-made elements such as plants, people, vehicles, and furniture, allowing for customization of designs to meet the specific needs of each project.
- **Ease of Use:** Lumion features a user-friendly interface that is suitable for architects and designers, allowing users to learn quickly and produce designs with ease.
- **Continuous Updates:** Lumion provides regular updates that introduce new features and performance improvements, ensuring the software remains a powerful and modern tool in architectural rendering.

LayOut

LayOut allows for the creation of *shop drawings* for any project, Whether *interior* or *exterior*.
This is achieved by generating sections in SketchUp and exporting the file to LayOut for further refinement.
- Within LayOut, users can utilize the *Scrapbook* feature to add components like arrows, people, plants, furniture, and more to enhance the presentation.
- The program provides tools for text, dimensions, and labels, ensuring clarity and precision in the drawings.
- LayOut also supports image integration, allowing the addition of regular photos or rendered images to clarify specific materials used in the project.
- Files can be exported as images in various formats or as complete PDF documents.

Advantages of LayOut:
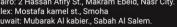Speed and ease of use, higher quality output with improved material rendering.

+2 010000 50300
+2 010000 93429

Cairo: 2 Hassan Afify St., Makram Ebeid, Nasr City.
Alex: Mostafa kamel st., Smoha
Kuwait: Mubarak Al kabier., Sabah Al Salem.

www.cadmasters.org

Enscape

Enscape is a *real-time rendering* tool, constantly updating
Its features to provide live render previews. Key aspects include:

- Explanation of material types, focusing on properties like *albedo*, *diffuse*, *reflection*, and *deflection* for materials like glass and curtains that require transparency or reflection effects.
- Detailed instructions on handling lighting objects and their effects on different scenes.
- A large asset library, available both online and offline, with some components compatible with *V-Ray* (approximately 8GB). For instance, while rendering in V-Ray, users can import Enscape assets with their respective materials directly into V-Ray. However, the reverse is not possible.
- The latest version of Enscape includes an *AI Enhancer* feature, which uses artificial intelligence to process elements like grass and people, improving overall image quality and realism.
- Users also learn to create animations, whether for *interior* or *exterior* scenes, and how to compile and refine these animations using programs like *CapCut* or *Camtasia*.

+2 010000 50300
+2 010000 93429

Cairo: 2 Hassan Afify St., Makram Ebeid, Nasr City.
Alex: Mostafa kamel st., Smoha
Kuwait: Mubarak Al kabier., Sabah Al Salem.

www.cadmasters.org