Line Academy

Engineering Your Success Story

30 DAYS TRAINING ON

MUNICIPAL MAPMAKING, 3D MODELING AND RENDERING

Jal Vinayak Marg, Na Tole, Pulchowk, Lalitpur

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ABOUT THE TRAINER

Subina Tuladhar
Architect
Urban Designer

Subina Tuladhar is an architect passionate about creating innovative and sustainable designs. Over the past six years, she has worked on diverse projects, combining creative vision with practical experience to deliver meaningful and functional spaces.

She holds a Master's degree in Urban Planning, completed in 2024 from Khwopa Engineering College, and a Bachelor's degree in Architecture from Nepal Engineering College. Her academic and professional journey has been driven by a commitment to excellence and a desire to create spaces that enhance the quality of life for the communities they serve.

For Subina, architecture is not merely about constructing buildings; it is about crafting meaningful experiences and making a positive impact on the environment. Whether working on residential developments, commercial spaces, or urban landscapes, she approaches every project with a focus on sustainability, functionality, and aesthetics.

She has been giving online classes of sketchup autocad and lumion since 2019.

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ABOUT THE COURSE

In the realm of modern design and architecture, mastering digital tools is crucial for success. This course offers a focused curriculum on three pivotal software applications: AutoCAD for municipal map making, SketchUp for 3D modeling, and Lumion/Enscape for rendering. Over the course of 30 days, students will engage in hands-on learning, developing expertise in creating detailed maps, constructing intricate 3D models, and producing stunning visual renderings. By the end of the program, participants will not only have acquired technical skills but also the creative insight necessary to thrive in various design fields, preparing them for impactful careers in architecture and urban planning.

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BENEFITS OF TRAINING AT LINE ACADEMY

- **Certified and Experienced Trainers**: Learn from municipal mapping experts like Subina Tuladhar, who bring over a decade of real-world experience in designing and implementing mapping projects at both local and regional levels.
- **Proven Track Record**: Line Academy has a strong history of successfully preparing participants for specialized training programs, with excellent feedback and impactful outcomes in municipal map-making.
- **Comprehensive Training Facilities**: Enjoy well-equipped virtual classrooms, interactive sessions, and access to up-to-date municipal mapping tools and resources.
- **Real-World Insights**: Trainers incorporate practical examples from their experience in urban planning, infrastructure development, and GIS applications, bridging the gap between theoretical knowledge and practical implementation.
- **Personalized Learning Support**: Benefit from one-on-one guidance, doubt-clearing sessions, and tailored strategies to ensure a thorough understanding of municipal mapping processes.
- **Effective Skill Development**: Gain hands-on experience with mapping tools, project simulations, and practice exercises that replicate real-world mapping challenges.
- **Flexible Training Options**: Line Academy offers flexible class schedules to accommodate working professionals, including weekend and evening sessions.
- **Networking Opportunities**: Connect with other professionals, urban planners, and trainers to expand your professional network and explore opportunities in the field of municipal map-making.

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COURSE OUTLINE

- Part 1: Municipal Map Making using AutoCAD
- Part 2: 3D Modeling using Sketchup
- Part 3:Rendering using Lumion and ENSCAPE

Part 1 : Municipal Map Making using AutoCAD (13 DAYS)

1.1 Introduction to AutoCAD

- Overview of CAD and its applications
- Understanding the AutoCAD interface
- Menus, toolbars, command line
- Workspace customization
- Units and drawing setup

1.2 Basic Drawing Tools

- Line, Polyline, Circle, Arc, Ellipse
- Rectangle, Polygon, Hatch, Fill
- Using Object Snap (OSNAP) and Grid Snap
- Zooming and panning tools
- Creating and managing layers

1.3 Modifying Tools

- Move, Copy, Rotate, Scale
- Trim, Extend, Offset, Fillet, Chamfer
- Mirror, Array
- Explode and Join commands

1.4 Annotation and Text

- Adding single-line and multi-line text
- Text styles and formatting
- Dimensioning basics:
- Linear, Aligned, Angular, Radius, Diameter
- Dimension styles and settings
- Adding leaders and annotations

1.5 Advanced Drawing Techniques

- Creating blocks and inserting them
- Attributes and dynamic blocks
- Using external references (XREFs)

1.6 Working with Layouts and Printing

- Model space vs. Paper space
- Setting up viewports
- Plot styles and plotting settings
- Printing to scale
- Exporting to PDF/JPEG

1.7 Practical Applications

- Municipal Map making (Architectural/ Structural drawing) using Bye laws
- Creating electrical and plumbing layouts
- Interior Layouts and Planning
- Landscapes
- Contours
- Importing and exporting drawings

1.8 Final Project and Assessment

- Completing a real-world design project
- Review and corrections
- Exporting and presentation of designs
- Certificate of completion

Part 2 : 3D Modeling using Sketchup (13 DAYS)

2.1 Introduction to Sketchup

- Overview of SketchUp and its applications
- Installing SketchUp and setting up preferences
- Understanding the interface
- Toolbars, menus, and trays
- Navigation tools: Orbit, Pan, Zoom
- Understanding file formats (SKP, DWG, 3DS, etc.)
- Basic settings and templates

2.2 Basics of 3D Modeling

- Drawing tools: Line, Rectangle, Circle, Arc, Polygon
- Push/Pull tool for extruding objects
- Move, Rotate, and Scale tools
- Creating 3D objects
- Basic shapes: Cubes, Cylinders, Sphere

2.3 Modifying and Editing Tools

- Using the Offset tool
- Creating and editing groups
- Working with components
- Difference between Groups and Components
- Creating reusable components
- Applying the Follow Me tool
- Using the Eraser tool and Undo/Redo feature

2.4 Working with Materials and Textures

- Applying materials and textures
- Editing and customizing materials
- Importing custom textures
- Understanding UV mapping
- Material scaling and alignment

2.5 Layers and Organization

- Using tags (layers) for better organization
- Assigning objects to tags
- Hiding and isolating tags
- Scene management and creating views

2.6 Advanced Modeling Techniques

- Intersecting objects and planes
- Using the Solid tools
- Creating organic shapes
- Using plugins for advanced modeling (e.g. Curviloft, Artisan)
- Importing and exporting models

2.7 Camera and Visualization

- Setting up cameras and perspective views
- Creating sections and cuts
- Using scenes for animation and presentations

2.8 Importing and Exporting

- Importing CAD files (DWG, DXF)
- Exporting models to CAD,photos
- Collaborating with other software (AutoCAD)

2.9 Final Project and Assessment

- Creating a complete 3D model (e.g., a house, furniture, or a product)
- Applying materials, textures, and details
- Presentation of the final project
- Certificate of completion (if applicable)

Part 3 : Rendering using LUMION and ENSCAPE (4 DAYS)

3.1 LUMION

3.1.1 Introduction to Lumion

- Overview of Lumion and its applications in visualization
- Understanding system requirements and installation
- Interface overview
- Navigation and controls
- Toolbars and menus
- Understanding the Lumion workspace (Scene, Library, and Effects)

3.1.2 Importing and Managing 3D Models

- Supported file formats skp
- Importing 3D models from SketchUp, Revit, AutoCAD, and others
- Scaling, positioning, and orienting models
- Managing imported models
- Model reloading and updates

3.1.3 Scene Building and Environment Setup

- Adding and editing
- Customizing landscapes
- Using the object library
- Adding trees, plants, and rocks
- Placing vehicles, people, and furniture
- Controlling object placement and duplication

3.1.4 Materials and Texturing

- Applying Lumion materials to surfaces
- Editing material properties
- Reflection, gloss, and transparency
- Bump and displacement maps
- Importing custom textures
- Using the material library for realistic finishes

3.1.5 Lighting and Shadows

- Adding natural lighting
- Sun and sky adjustments
- Using artificial lights
- Spotlights, omni lights, and area lights
- Controlling shadows and ambient occlusion
- Night and evening lighting setups

3.1.6 Weather and Atmosphere Settings

- Adjusting sky and clouds
- Adding fog, rain, and snow
- Controlling temperature and atmosphere
- Time of day adjustments for realistic environments

3.1.7 Camera and Animation

- Setting up camera views and perspectives
- Creating camera paths for animations
- Adjusting field of view and depth of field
- Adding keyframes and smooth transitions
- Render types: Images, animations, and panoramas

3.1.8 Exporting

3.1.9 Final Project and Assessment

- Developing a complete visualization project
- Exterior: Architectural building or landscape
- Interior: Living room, office, or custom space
- Applying materials, lighting, and effects
- Rendering final images and animations
- Project presentation and review

3.2 ENSCAPE

3.2.1 Introduction to Enscape

- Overview of Enscape and its applications
- System requirements and installation
- Understanding real-time rendering
- Enscape interface and toolbar basics

3.2.2 Setting Up Enscape

- Installing and enabling the Enscape plugin
- Linking your 3D model to Enscape

3.2.3 Materials and Textures

- Applying materials in host software
- Enscape Material Editor:
- Editing material properties (bump, gloss, transparency, emissiveness)
- Adding displacement maps
- Importing custom textures and materials
- Using realistic materials for interiors and exteriors

3.2.4 Lighting and Shadows

- Understanding natural lighting
- Sun and sky settings
- Adjusting time of day
- Adding artificial lighting
- Spotlights, omni lights, and area lights
- Controlling light intensity and color
- Realistic shadow and reflection settings

3.2.5 Environment and Atmosphere

- Skybox and horizon settings
- Controlling weather conditions (clouds, fog, etc.)
- Adjusting environment brightness and contrast
- Adding vegetation and entourage for realism
- Creating nighttime and evening scenes

3.2.6 Camera Settings and Views

- Setting up camera perspectives
- Adjusting field of view (FOV) and depth of field (DOF)
- Using 2-point perspective for architectural visualization
- Creating and saving views
- Customizing camera animations

3.2.7 Rendering Basics

- Rendering high-quality still images
- Introduction to panorama rendering
- Real-time walkthroughs and virtual reality (VR)
- Rendering speed optimization

3.2.8 Rendering Techniques

- Adding furniture, people, and vehicles
- Placing vegetation and lights
- Managing large-scale models effectively
- Advanced post-processing with Enscape Visual Settings

3.2.9 Animation and Walkthroughs

- Creating walkthrough paths and animations
- Adjusting camera motion and speed
- Adding smooth transitions between scenes
- Exporting high-quality animations and videos

3.2.10 Final Project and Assessment

- Designing and rendering a complete project:
- Exterior (e.g., residential building or landscape)
- Interior (e.g., living room, office, or commercial space)
- Applying materials, lighting, and visual settings
- Rendering final images, animations, or VR walkthroughs
- Project review and feedback

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