

## 2D CAD

- Introduction
- File management
- Orthographic drawings
- View management
- Display management
- Layer management
- Selection methods
- Parametric drawings
- Symbol creation using block
- BOM / Joinery details creation
- Isometric drawings
- Perspective drawings
- Annotations and Dimensions
- Team work
- Layout management
- Publish and Plot

### **Courseware Issued:**

AutoCAD

- Reference Guide with Workbook

**DURATION: 64 hrs**

## **3D AutoCAD**

- 3D modeling concepts in AutoCAD
- Understand and use viewpoint and UCS
- Wireframe modeling
- Solid modeling & editing
- Mesh modeling & editing
- Surface modeling & editing
- Create & manage 2D views from 3D models
- Materials, lights & rendering
- Working with images
- Import and export

### **Courseware Issued:**

AutoCAD - 3D Modelling

- Reference Guide

**DURATION: 40 hrs**

# Computer Aided Land Survey Using AutoCAD Civil 3D

- Introduction to Land Survey and AutoCAD Civil 3D
- Survey creation based on the survey data from
  - Theodolite
  - Total Station
  - LiDAR
  - Google Earth
  - DEM Files
- Surface Styles
- Surface Analysis
- Earthwork Calculation
  - Cut and Fill Volume
  - Grading
  - Profile View Generation
- Site Layout

## **Courseware Issued:**

Computer Aided Land Survey Using AutoCAD Civil 3D

- Reference Guide

**DURATION: 24 hrs**

# AutoCAD Civil 3D

- Contents of Computer Aided Land Survey
- Transportation Design
  - Design Criteria
  - Alignment Creation
  - Corridor Creation
  - Intersection Design
  - Roundabout Design
  - Custom Assembly Creation
- Report Generation
  - Earthwork Calculation
  - Quantity Takeoff
- Pipe Layout
  - Design Rules
  - BOM
- Plotting

## **Courseware Issued:**

AutoCAD Civil 3D

- Reference Guide

**DURATION: 80 hrs**

## MX Road

- View controls
- Survey inputs and validation
- String Names and Drawing styles
- Point Selection Methods
- Surface checker
- String creation and editing
- Surface analysis
- Earthwork calculation
- Alignment creation
  - Horizontal
  - Vertical
  - Best Fit
- Carriageway design
- Junction design
- Shoulder design
- Pavement design
- Dynamic reports
- Section views
- Final drawings

### **Courseware Issued:**

MX Road

- Reference Guide

**DURATION: 64 hrs**

# REVIT Architecture

- Introduction to BIM & REVIT Architecture
- Place and modify Walls & Complex Walls
- Add and modify Wall Profiles
- Place Doors, Windows & Components
- Dimensions and Constraints
- Create Floors and Ceilings
- Curtain Walls & Stairs
- Conceptual Models
- Annotation & Schedules
- Sheets and Title Blocks
- Views, Camera, Walk-through, Render & Solar Study
- In-Place Families
- Family Creation
- Site Design
- Link Projects & Collaboration
- Design Phase
- Realistic Presentations
- Import And Export

## **Courseware Issued:**

REVIT Architecture

- Reference Guide with Workbook

**DURATION: 120 hrs**

# **Building Estimation and Costing**

- Introduction
- Customizing Currencies & Catalog Creation
- Work Breakdown Structure
- Manual Takeoff Tools:
  - Area
  - Backout
  - Linear
  - Count
- Automatic Takeoff Tools:
  - Model
  - Search
  - Single Click
- Assembly & Validate Takeoff Data
- Compare & Display
- Report Generation & Export

## **Courseware Issued:**

Building Estimation and Costing

- Reference Guide

**DURATION: 24 hrs**

## MAX for Engineers / Architects

- Introduction to 3ds Max
- Modeling using basic primitives
- Transforming objects
- Customizing working units
- Arranging objects using utility tools
- Modeling using parametric modifiers
- Editing Poly Models-using Caddy Interface
- Spline Modeling
- Landscaping and Modeling using Compound Objects
- Construct using Architectural objects
- Views-Lights and Cameras
- Textures-Basic & Advance
- Particle Systems & Forces
- Importing other formats
- Basics of Animation
- Walk-Through
- Advanced Rendering

### **Courseware Issued:**

MAX for Engineers / Architects

- Reference Guide

**DURATION: 80 hrs**

## Design Visualization.Pro

- Introduction to 3Ds Max Design
- Understanding about Primitives and selection methods
- Modeling using parametric modifiers and shapes
- Interoperability with AutoCAD and REVIT Architecture models
- Handling Slate Material Editor using libraries
- Understanding about the lighting concepts
- Working with Particle Systems and Environmental Effects
- Handling daylight effects
- Working with latest Rendering Engines
- Understanding the Animation Concepts
- Working in Track views for animating the REVIT Models
- Video post for Animations

### **Courseware Issued:**

Design Visualization.Pro

- Reference Guide

**DURATION: 40 hrs**

# Navisworks

- About Autodesk Navisworks
- User interface
- Files and File types
- 3D sectioning
- Object Attributes & Properties
- Grids and Levels
- Switchback
- Clash Detection
- Timeliner
- Animating Objects
- Work with Camera
- Scriptor
- Quantification
- Catalogs
- Resources
- Adding Materials to a Model
- Lighting
- Sun and Sky Lights
- Exposure Control
- Ground Planes
- Photorealistic Rendering

## **Courseware Issued:**

Navisworks Ref

- Guide

**DURATION: 24hrs**

# STAAD.PRO

- Introduction to Structural Engineering
- Introduction to STAAD.Pro V8i
- Model Generation and Editing
- Assigning loads
- Automatic load Generations:
  - Slab, Wind and Moving loads
- Creating Load Combinations
- Concrete Design
  - Column and Beam Design
- Seismology
  - Seismic Analysis and Design
  - Dynamic Analysis
    - Response Spectrum
    - Time History Analysis
- FEM/FEA
  - Introduction
  - Water Tank Design
  - Slab Design
  - Staircase Design
  - Shear Wall Design
  - Bridge Deck design using STAAD.Beava

- Steel Design
  - Introduction
  - Steel Frame Structure Design
  - Overhead Transmission Line Towers Design.
  - Steel Structure Design with Pushover Analysis
- Foundation Designs
  - Isolate, Combined, Strip, Mat And Pile Cap
- Report Generation and Plotting

**Courseware Issued:**

STAAD.Pro

- Reference Guide with Workbook

**DURATION: 80 hrs**

## **ETABS**

- Introduction
- Plane Frame Modelling
- Space Frame Modelling
- Load Pattern and Definition
- Analysis and Analysis Reports
- Concrete Frame Design and Detailing
- Steel Design and Detailing
- Composite Beam Design
- Introduction to Dynamic Analysis

### **Courseware Issued:**

ETABS

- Reference Guide

**DURATION: 40 hrs**

## RCC Detailing

- Introduction
  - RCC Detailing
  - AutoCAD Structural Detailing
- Effective Usage of Country Specific Templates and Standards
- Element Creation
  - Automatic
  - Manual
- Slab Creation with Surface Distribution
- RCC Detailing of
  - Foundation
  - Column
  - Beam
  - Slab
  - Staircase
  - Retaining Wall
  - Concrete Pipe
  - Concrete Tank
- Drawing Preparation
- Bar Bending Schedule
- Export
- Print

### **Courseware Issued:**

RCC Detailing

- Reference Guide

**DURATION: 40 hrs**

## PRO Steel

- Creating and Working with Workframes
- Working with Display and Area Classes
- Inserting Steel Shapes
- Shapes Manipulation
- Working with Plates
- Creating Connections
  - End Plate
  - Base Plate
  - Bracing
  - Purlin
  - Web Angle
  - Shear Plate
- Working with Structural Elements
  - Handrail
  - Stair
  - Ladder
- User created shapes
- Part Family
- Detailing
  - Symbol Creation
  - Grouping
  - Material Takeoff
  - Dimension

### **Courseware Issued:**

PRO Steel

- Reference Guide

**DURATION: 64 hrs**

## REVIT MEP

- Introduction
  - MEP Design
  - REVIT MEP
- Work Sharing
- Family Creation
  - Solid Modeling
  - Equipment
  - Light Fixture
  - Devices
- HVAC Design
  - Heating and Cooling Load Analysis
  - Logical Systems
  - Mechanical System and Duct Work
  - Mechanical Piping System
  - Inspect System
- Electrical Design
  - Lighting analysis
  - Power and Communication Design
- Plumbing Design
- Fire Protection System
- Schedules
- Documentation
- Sheet Setting
- Printing

### **Courseware Issued:**

REVIT MEP

- Reference Guide

**DURATION: 80hrs**

## ANSYS Civil

- Introduction to Structural Engineering
- Introduction to FEM/FEA
- Introduction to Ansys + CivilFEM
- Model generations
- Assigning loads
- Concrete Design
  - Beam
  - Column
  - Slab
  - Staircase
  - Water Tank
  - Foundation
- Seismic Analysis and Design
- Bridge design
- Steel Design

### **Courseware Issued:**

ANSYS Civil

- Reference Guide

**DURATION: 80hrs**

## **MICROSOFT Project**

- PPM Concepts
- Calendar
- Task / Relationships
- Work Breakdown Structure
- Constraints and Recurring Task
- Define and Assign Resource
- Resource Analysis and Leveling
- Baseline
- Update Project Progress
- Tracking
- Earned Value Analysis
- Customization and Formatting
- Generate Reports

### **Courseware Issued:**

MICROSOFT Project

- Reference Guide with Workbook  
(With related stream)

**DURATION: 64 hrs**

## AECOsims Building Designer

- AECOsims User Interface
- Different Modules in AECOsims Building Designer
- Working with AECOsims Architectural Building Designer
- Federated Models of the Project
- Creating UCF and PCF
- Configuring grids and floors
- Drafting and Modifying Tools
- Creating an Architecture Model
- Creating dynamic views of the model
- Part & Families
- Drawing templates
- Working with content libraries
- Importing and exporting models
- Rendering

### **Courseware Issued:**

AECOsims Building Designer

- Reference Guide

**DURATION: 100 hrs**