

# FUNDAMENTAL MODELLING OF ARCHITECTURE

Upon successful completion of this course, the participant are expected to be able to:

- Operate a 3D parametric modelling tool.
- Interpret design intent to be used in technical modelling.
- Develop a 3D BIM model appropriately.
- Extract & prepare related design deliveries such as drawings, material schedule, schedule of accommodation and etc.
- Utilise 3D BIM model as interaction, communication and collaboration tools.
- Apply BIM base process flow of technical modelling.
- Identity problem and associated challenges in delivering BIM based process flow.

# COURSE OUTLINE:

## DAY 1

### Introduction

- + Introduction to basic concept
- + Introduction to userinterface
- + Features and function
- + Model navigation

### Architecture Modelling

- + Adding Elevation and gridlines
- + Creating wall
- + Adding doors and windows

## DAY 2

### Architecture Modelling

- + Creating floor
- + Creating staircase
  - + Creating shaft opening
- + Creating roof
- + Adding Furniture components

### Annotation and Tagging

- + Labelling and Tagging
- + Dimensioning
  - + Room Tag

## DAY 3

### Modelling Output

- + Creating door and window schedule
- + Creating schedule of accommodation

### Creating Drawing Sheet

- + Adding project information
- + Creat sheet drawing
  - + Adding sheet to the project
  - + Adding new views in sheets

## FOR MORE INFORMATION:



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**MODELLING SKILL COURSE**  
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# FUNDAMENTAL MODELLING OF STRUCTURE

Upon successful completion of this course, the participant are expected to be able to:

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- Utilise 3D BIM model as interaction, communication and collaboration tools.
- Apply BIM base process flow of technical modelling.
- Identity problem and associated challenges in delivering BIM based process flow.

# COURSE OUTLINE:

## DAY 1

### Introduction

- + Introduction to basic concept
- + Introduction to userinterface
- + Features and function
- + Model navigation

### Structure Modelling

- + Link with architecture model
- + Copy monitor (levels)
- + Create new views in structural plans
- + Importing drawing files
- + Add grid lines to imported

## DAY 2

### Structure Modelling

- + Cosmumization component family libraries
- + Adding structural columns & rectangular beams to the level
- + Creating structural floor
- + Creating load bearing wall
- + Draw wall opening
- + Adding stump, pile caps & square piles

### Annotation and Tagging

- + Labelling and Tagging
- + Dimensioning

## DAY 3

### Creating Drawing Sheet

- + Adding project information
- + Creat sheet drawing
- + Adding sheet to the project
- + Adding new views in sheets

### Creating Component Libraries

- + Creating pile caps families
- + Setup pile caps libraries parameter & pile caps material parameter
- + Create title block
- + Setup parameter & text
- + Inserting image in tittle block

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# FUNDAMENTAL MODELLING OF MECHANICAL & PLUMBING

Upon successful completion of this course, the participant are expected to be able to:

- Operate a 3D parametric modelling tool.
- Interpret design intent to be used in technical modelling.
- Develop a 3D BIM model appropriately.
- Extract & prepare related design deliveries such as drawings, material schedule, schedule of accommodation and etc.
- Utilise 3D BIM model as interaction, communication and collaboration tools.
- Apply BIM base process flow of technical modelling.
- Identity problem and associated challenges in delivering BIM based process flow.

# COURSE OUTLINE:

## DAY 1

### Theoretical & model navigation

- + Fundamental concept of BIM Mechanical & Plumbing
- + The nature of parametric tools
- + Model review and navigation
- + Show & hidden model element of a building
- + Presentation of design intent

## DAY 2

### Model Authoring

- + Extraction information from schematic & shopdrawing
- + Setting up project template
- + Setting up elevation & gridline by copy monitor
- + Link CAD Drawing
- + Placement of mechanical & plumbing components
- + Duct & pipe routing for the mechanical & plumbing system
- + Interference check & manage system browser

## DAY 3

### Deliverable Extraction

- + Tagging and annotation for drawings
- + Title block setup and drawing preparation
- + Schedule of material



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# FUNDAMENTAL MODELLING OF ELECTRICAL

Upon successful completion of this course, the participant are expected to be able to:

- Operate a 3D parametric modelling tool.
- Interpret design intent to be used in technical modelling.
- Develop a 3D BIM model appropriately.
- Extract & prepare related design deliveries such as drawings, material schedule, schedule of accommodation and etc.
- Utilise 3D BIM model as interaction, communication and collaboration tools.
- Apply BIM base process flow of technical modelling.
- Identity problem and associated challenges in delivering BIM based process flow.

# COURSE OUTLINE:

**DAY 1**

## Model navigation

- + The nature of parametric tools
- + Model review and navigation
- + Show & hidden model element of a building
- + Presentation of design intent
- + Fundamental concept of electrical BIM Modelling

**DAY 2**

## Model Authoring

- + Extraction information from schematic & shopdrawing
- + Setting up project template
- + Import CAD
- + Linking model and copy monitor
- + Load and editing family
- + Placement and routing component
- + Interference check and manage system browser

**DAY 3**

## Deliverable Extraction

- + Schedule/Quantities of material
- + Tagging and annotation for drawing
- + Title block setup and drawing preparation

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# BIM AUTOMATION WITH VISUAL PROGRAMING

Upon successful completion of this course, the participant are expected to be able to:

- Understand dynamo workflow.
- Using tools properly
- Can apply the results to a job
- Develop a 3D BIM model with automation.
- Identity problem and associated challenges in delivering BIM based process flow.

# COURSE OUTLINE:

## DAY 1

### Introduction

+ About Dynamo

### Getting Started

- + User Interface
- + Graphs
- + Graph Controls
- + Package Manager

## DAY 2

### Data Manipulation

- + Lists
- + Managing lists
- + Preset Values
- + Math
- + Strings

## DAY 3

### Working with Geometry

- + Points
- + Curves
- + Surfaces
- + Solids

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REVIEW SKILL COURSE  
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# FUNDAMENTAL COORDINATION & SIMULATION

Upon successful completion of this course, the participant are expected to be able to:

- Operate a 4D tool.
- Interpret design intent to be used in technical modelling.
- Develop a 4D BIM model appropriately.
- Extract & prepare related design deliveries such as drawings, material schedule, schedule of accommodation and etc.
- Utilise 4D BIM model as interaction, communication and collaboration tools.
- Apply BIM base process flow of technical modelling.
- Identity problem and associated challenges in delivering BIM based process flow.

# COURSE OUTLINE:

## DAY 1

### Introduction

- + About Autodesk Naviswork
- + Familiarize you with Autodesk Navisworks interface

### Selecting and Manipulating Objects in the Scene

- + Explain various methods of selecting objects
- + Explain the use of various item tools

### Viewpoints, Animations, and Measurements

- + Familiarize you with the process of creating viewpoints
- + Explain how to measure objects in the scene

### Reviewing and Sectioning the Design

- + Familiarize you with the process of reviewing the designs in Autodesk Navisworks
- + Familiarize you with the process of creating and reviewing comments in the design

## DAY 2

### Autodesk Navisworks Productivity Tools

- + Show you how to add links to the objects in Autodesk Navisworks scene
- + Show you how to compare two versions of the models to find differences
- + Teach you how to link external databases to Autodesk Navisworks objects

### Working with the Autodesk Rendering Module

- + Explain how to apply materials to the objects in the scene
- + Explain how to apply lighting to the scene

### Working with the Animator and Scripter Modules

- + Introduce you to the Animator module of Autodesk Navisworks
- + Introduce you to the Scripter module of Autodesk Navisworks

## DAY 3

### Creating Construction Simulations Using the Time Liner Module

- + Familiarize you with the TimeLiner window
- + Teach you how to automatically create tasks for all sets in Autodesk Navisworks scene

### Introduction to the Quantification Module

- + Familiarize you with Quantification Workbook window
- + Teach you how to perform quantity takeoffs on the objects in the scene
- + Teach you how to export the quantity takeoffs data in various formats

### Working with the Clash Detective Module

- + Teach you how to view various clash results
- + Teach you how to fix clashes using the Switchback option

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# FUNDAMENTAL COMPONENT CREATION

Upon successful completion of this course, the participant are expected to be able to:

- Create component costum
- Add parameters for sharing information
- Understanding basic of geometry
- Using component in project file
- Modify component

# COURSE OUTLINE:

## DAY 1

### Introduction

- +Introduction of Families
- +The Structure of Families within Revit

### Creating out First Family - The Basic Principles

- + The revit family environment
- +Building the structure
- +Making it parameters
- +Create the geomatry
- +Using within a project

### Adding Different Geometry Types to our Family

- +Blends
- +Revolves
- +Sweeps
- +Swept Blends
- +Void Forms

## DAY 2

### Adding complexity

- + Levels of Detail
- +Joining Geometry
- +Enabling Visibility
- +Subcategories
- +Adding Material
- +Model line & model text
- +Embellishing with 2D
- Scheduleing and shares parameters
- Flip control
- Type Catalogue

### Family Templates and Hosting

- +Ceiling based
- +Floor based
- +Roof based
- +Wall based
- +Face based
- +Line based
- +Two level based
- +Profile Families
- +Curtain panels

### Using Formula

- +Basic function and arithmetic
- +Angles and Triangles
- +Conditional Statement
- +Formula with text
- +Numerical fungtions

## DAY 3

### Families Inside Families

- +How & why to nest
- +Shared families
- +Nested profile families
- +Parametric Array

### 2D Families

- + Detail components
- +Tags

### Concept Massing & Adaptive Component

- + The revit massing environment
- +Concept mass family modeling
- +Early stage mass family
- +Pattern based curtain panel family
- +Adaptive components

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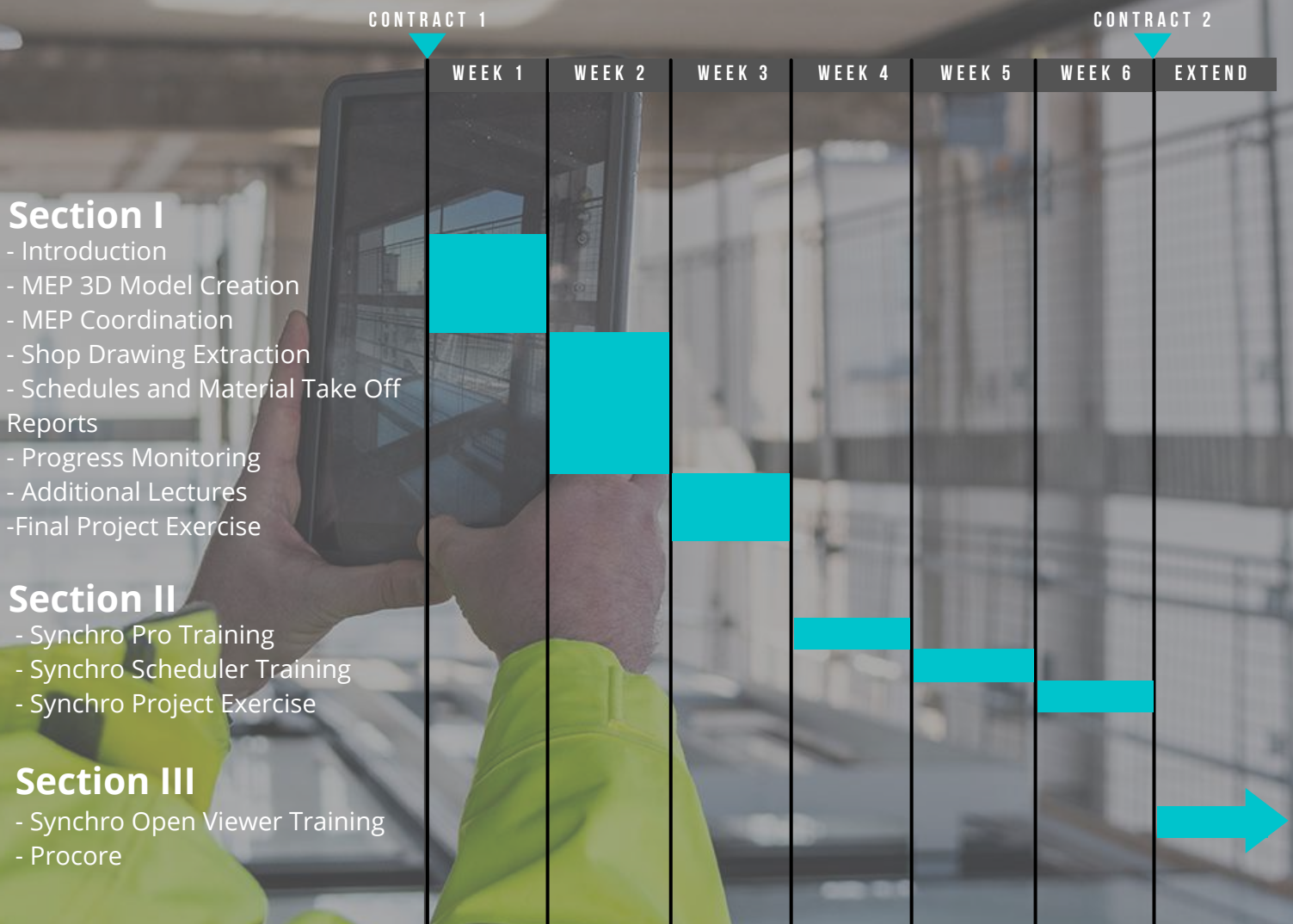
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EXISTING  
CONDITION  
&  
ASBUILT  
DRAWING

Laser scanning is generally used for:

- Asbuilt Drawing
- Construction Verified
- Engineering Design
- Pre Fabrication
- Clash Detection

# BIM SERVICES:



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