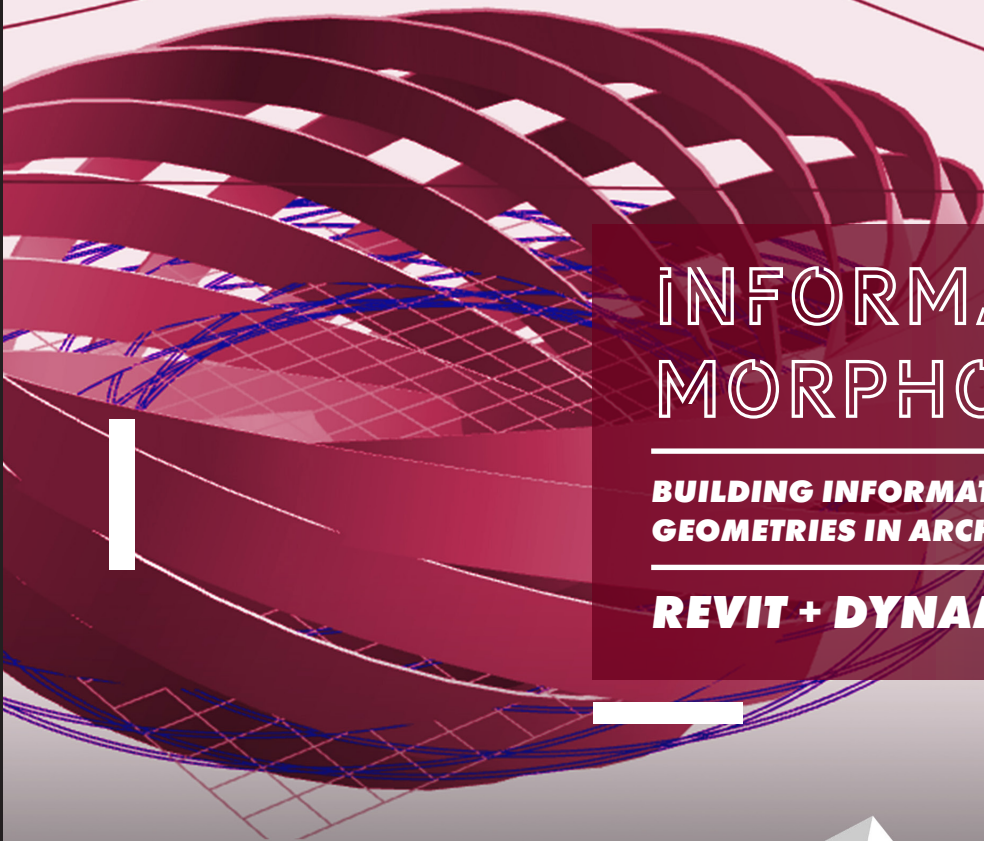
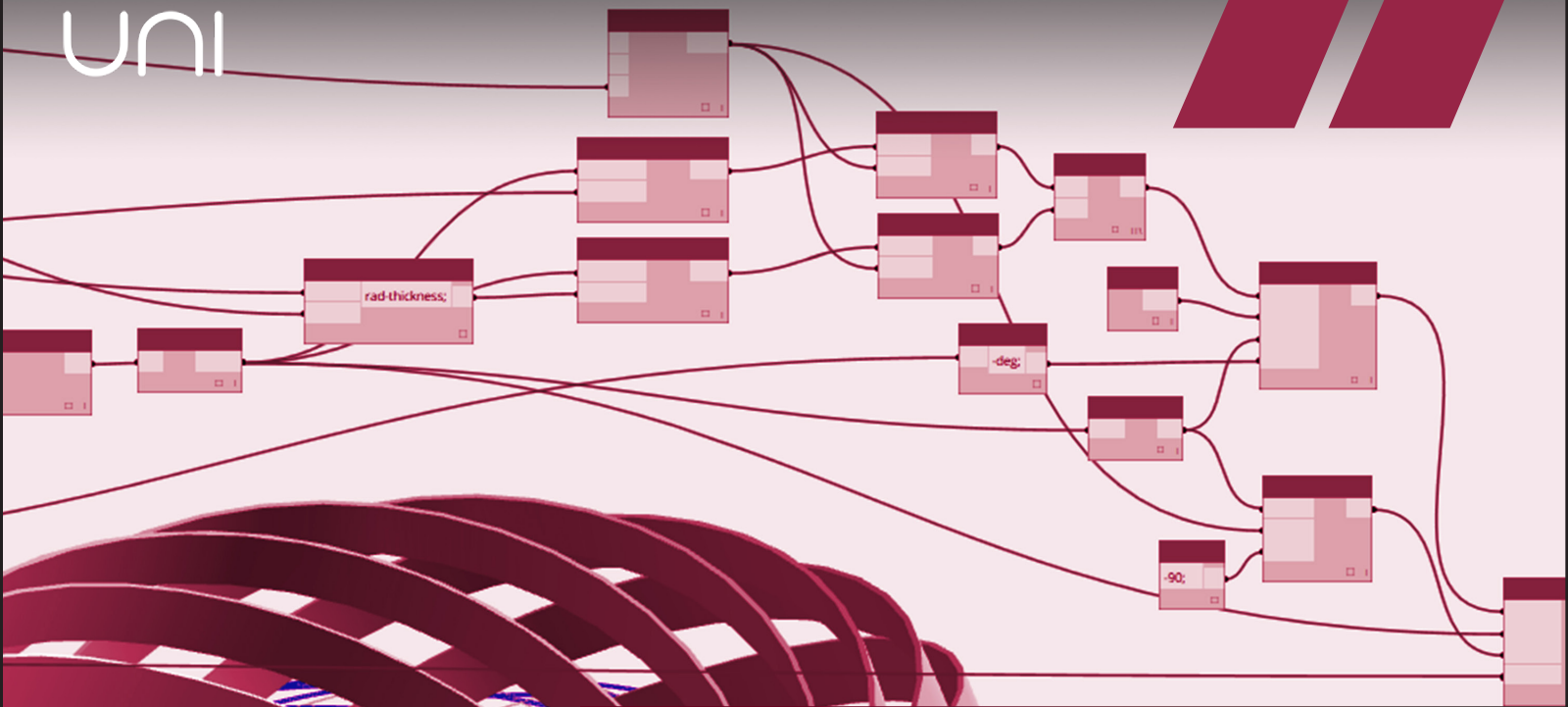


uni



INFORMATIVE MORPHOLOGIES

**BUILDING INFORMATION AND PARAMETRIC
GEOMETRIES IN ARCHITECTURE**

REVIT + DYNAMO + PYTHON

v5.08



Are you interested in taking your Revit Skills to the next level? harnessing the power of BIM using your own Plug-ins?

Are you ready to learn a very exciting and powerful tool that will take your ideas and concepts to a whole new realm?

**COURSE DESCRIPTION \ **

This Two-day introductory course, will walk you through the parametric modeling features that Revit Architecture has to offer. Revit Architecture by Autodesk is one of the leading applications in the industry for Building Information Modelling and is reshaping the way we design and build.

The ability to create smart 3D models, where each object has attributes that collectively create a robust database for coordinating and extracting information, is one of the most relevant skills any designer should learn today.

After this course, you will know the basics of Revit Architecture, and you will feel confident to start creating your BIM models and retrieve information for your presentations.

This introductory course explains the very basics of Dynamo. At the end of this course, you will be comfortable navigating the Dynamo world. You will be familiar with not just the software, the user interface, the library, the nodes and the search menus but you'll have some good references to go to for questions you may have in the Dynamo community.

The course is not only geared towards drilling technical knowledge, but also designed to show you the benefits of thinking and solving problems a certain way that might be new to you. Of course, the technical know-how is fundamental, but so is acquiring the attitude towards automation and visual programming in our everyday workflows. This course introduces you to the basics of Dynamo and shows you the benefits these tools have in the daily practice of architecture, engineering, and construction.

In this course you'll also learn how to automate Revit's more cumbersome and repetitive tasks by script your own Plug-ins using Revit's API and Python Scripting Language.

**STRUCTURE \ **

Program has been structured to teach the advanced modeling capabilities of Revit Architecture and start modeling your first architectural project using the power of BIM. With the help associated plugins like Dynamo and Pyrevit that help in achieving parametric fabrications, with a real design exercise. Participants will learn how to build and manage parametric data structures (from basic simple lists to complex data Structures) and to develop data driven geometry and envelopes. This will help them in understanding and taking the data visualization to next level. The workshop technical tutorials will include:

DAY 1 | WEEKDAY (6 HOURS)

- 1. KNOWING THE INTERFACE.**
- 2. LEVELS AND VIEWS**
- 3. CONCEPTUAL MODELING AND DESIGNING**
- 4. SCHEDULES AND FILTERS**
- 5. PHASES**
- 6. CREATING FLOORS, WALLS AND DOORS**
- 7. SKIN FACADES**
- 8. COMPONENTS**
- 9. STRUCTURAL COLUMNS**
- 10. STAIRS, RAILINGS AND SHAFTS**
- 11. ROOMS**
- 12. VISUAL DISPLAY**
- 13. OUTPUTS FOR PRESENTATION**

DAY 2 | WEEKDAY (6 HOURS)

- 1. INTRODUCTION TO DYNAMO**
- 2. NODES, GROUPS AND ORGANIZING**
- 3. DATA STRUCTURES**
- 4. MATH AND LOGIC**
- 5. CODE BLOCKS AND LIST LACING**
- 6. LIST MANAGEMENT**
- 7. REVIT GEOMETRY VS. DYNAMO GEOMETRY**
- 8. CUSTOM NODES AND PACKAGE MANAGER**
- 9. INTRODUCTION TO PYTHON**
- 10. SETTING UP THE DEVELOPMENT ENVIRONMENT**
- 11. INTRODUCTION TO REVIT API**
- 12. PRINT "HELLO WORLD"**
- 13. SETTING PLUG-IN PARAMETERS**
- 14. CREATING OUR UI FORM**

1. INPUTS AND STRING MANIPULATION FUNCTIONS
2. EXTRACTING AND ADDING REVIT API
3. CREATING THE FLOOR AND WALLS LAYOUT
4. CREATION OF REVIT FAMILIES
5. CREATING DOORS AND ADDING LIGHTING PARAMETERS
6. PLACING PRIMARY AND SECONDARY LIGHTS
7. USING THE RANDOM LIBRARY FOR MULTIPLE TESTING
8. DEBUGGING ERRORS
9. EXCEPTION HANDLING
10. PYREVIT ADVANCED TOPICS
11. COURSE REVIEW

Development Environment Setup //

In this course, you'll learn how to set up your own development environment from scratch and also the use of helpful tools for the creation of your Revit Plugins such as PyRevit and Revit Look Up.

Define your Plug-In parameters //

Learn how to design your own tools by identifying key parameters that will drive the usage of your application and create UI Forms to allow users to interact with your tool. Learn how to make decisions based on usability to allow a wider usage of your tool.

Revit API //

Learn how to use Revit API to interact with your application, and call native API elements, Geometry manipulation, and design logic. We'll dive into Revit API Docs for you to learn how the SDK is structured and how to read the documentation.

Optimization & Error Handling //

Once you have developed your Plug-In, you'll also learn some useful techniques for optimizing your plug-ins and correcting errors with different debugging techniques, and also some techniques for testing and deployment.

**TAKE AWAYS \ **

- How to set up grids and levels for a project.
- Creating Massings & Exploring Design Options
- Creating Schedules & Filters
- Set Project Phases
- Creating Architectural objects (Floors, Walls, Doors, Stairs & Facades)
- Creating Room Layouts
- Creating Presentation Documents, Plan-sheets, Renders, etc.
- Learn the fundamentals of Dynamo
- Learn the difference between text programming and visual programming
- Acquiring an attitude to solve problems using a programming approach
- Getting familiar with the Dynamo Forum and community
- Learn fundamentals of Python
- Learn how to create your own tools inside Revit and program them according to your own needs

**REQUIREMENTS \ **

- There are no prerequisites, anyone from the design background or an enthusiast in the field of design are invited for this workshop.
- Participants should bring their own computer with above mentioned software installed. Further details will be sent to the registered participants.

TOOLS \ \

All the participants should have following tools installed on their workstations:

Autodesk REVIT (<https://www.autodesk.in/products/revit/architecture>)

DYNAMO (<https://dynamobim.org/download/>)

PYREVIT (<https://ein.sh/pyRevit/>)

Revit API (<https://www.revitapidocs.com/2018.2/news>)



REGISTRATION \ \

A total of **15 seats** are available for the workshop per workshop coordinator. Registration will close 3 days prior to the workshop or till the seats last.

Please follow the link to complete the registration:

1 PASS permits 1 PARTICIPANT in 1 WORKSHOP

[Refer to the eduPass Section to learn more about the Professional/Student/Group/Multiple registration.](#)

CALENDER \ \

The workshop will be held on:

OCT 05 : 11:00 AM - 6:30 PM (SATURDAY)

OCT 06 : 11:00 AM - 6:30 PM (SUNDAY)

VENUE: Third Floor, 145/1, Shahpur Jat, New Delhi





ClassroomTM Competitions

Classroom competitions are a part of this series of workshops and is meant for all the designers who want to explore their way with hands on experience to gain skills and create real world projects. Under this series you participate in workshops at one of these Micro-studio and get awarded a trophy.

In association with **UNI**, we are now expanding our vision of creating these micro-studios globally with a fusion of online design community and offline classrooms.

This fusion will help us in combining different ideologies and diverse methodologies, to create a continuum which links ideas such as exploration, debate and collaboration at a global level to understand and create '**Architecture of Everything**'

Competitions.uni.xyz





EDUPASS

EDUpass is a pass which can be used to participate in any workshop in this series (registration to be done 3 days prior the commencement of the workshop). Multiple EDUpasses can be purchased and used in a group to attend a single workshop or a single participant can register for multiple workshops.

For example, If you had purchased 6 passes, you can register to 6 different workshops or bring along 5 other friends/colleague with you to attend a single workshop of your choice.



HOW DOES IT WORK?

A Participant can purchase as many passes as he/she wants and 1 PASS permits entry to any 1 workshop and classroom competition of his/her choice.



Competitions.uni.xyz

**mail : contact@uni.xyz
facebook : [@uni.xyz](https://www.facebook.com/uni.xyz)
instagram : [@uni.xyz](https://www.instagram.com/uni.xyz)**