

**Academic institution**

Department of Architecture and Urban Studies

**Director**

Prof. Luigi Cocchiarella

**Duration**

No. 28 hours

**Place**

The course will take place online, on Microsoft Teams

**Registration**

The ONLINE REGISTRATION procedure, available at the link:

<https://www.polimi.it/index.php?id=5782&uid=4745>

must be completed WITHIN and NOT AFTER the deadline indicated on the course registration web page

**Full registration fee: € 330**

**Registration fee reduced by 15%: € 280**

(access to registration with a reduced fee of 15%: members enrolled in the CNAPP / Order of Milan; participants in other / previous courses of our program, corporate and public administration groups of at least three participants; PhD students and students of the Politecnico di Milano)

**Registration fee reduced by 10%: € 297**

(PhD students and students from other universities can access registration with a reduced fee of 10%)

The registration fee for the course is VAT free pursuant to art. 10, DPR n. 633 of 26/10/1972 and subsequent amendments

**Administration**

Dr. Marina Bonaventura

tel: +39 02 2399 5165

e-mail: [bimplus-dastu@polimi.it](mailto:bimplus-dastu@polimi.it)

**Policy**

The organizers reserve the right not to carry out the event if the minimum number of subscribers is not reached, upon prior notice to interested parties via email.



**POLITECNICO**  
MILANO 1863

**Permanent Training Event**

VIZ to BIM:

## METHODS AND TOOLS FOR ADVANCED VISUALIZATIONS

2a EDITION

28 HOURS

**Academic Institution**

Dipartimento di Architettura  
e Studi Urbani (DASTU)

## Participants

Architects, engineers, designers, graduate students and students, surveyors, industrial experts, geologists, technicians and corporate and public administration groups.

## Basic competences recommended

No previous computer knowledge is required. A general knowledge of the Windows operating system, of at least one CAD and graphic processing software program is recommended.

## Goal

This new course, established in the context of the professional training offer BIM Architecture Plus, intends to provide, through the knowledge of the tools and techniques of the most used programs in the field of Architectural Visualization, an approach and a method to achieve an operative and transversal workflow. An optimized workflow that starts from the BIM project and then goes through the most powerful and used software in ArchViz in order to describe and 'tell' architecture and space and to be able to investigate and communicate the designer's ideas. In this way architecture is put at the center through a technical, artistic, creative and critical path and so also the ability to know how to read, interpret and communicate the architecture itself. During the lessons, the acquisition of a new forma mentis is stimulated: the spirit of observation of reality or the study of light in space and a careful analysis of the physical and aesthetic characteristics of the materials. A preparatory moment to refine your design sensitivity, a real "architectural training" process, which in line with the program of professional courses BIM Architecture Plus, will refer not only to the scale of the building but also to the scale of the natural context it's built. All the exercises of the course will have as a common denominator the work on a reference: a building chosen as a container scene in which to experiment with the tools that are gradually explained. Software used: Autocad, Revit, 3ds Max, Corona Renderer, Photoshop.

## Programme

LESSON 1 - Intro and theory – BIM to VIZ – Modeling (first part)  
Presentation of the course; The fundamentals of ArchViz; Reading: knowing how to understand architecture; Academy's philosophy; Emreal: get emotions through photorealism; ArchViz as a generative tool; From theory to practice: presentation of the project Intro to 3ds Max (3ds structure, graphical interface, visualization management, scene management, working with files); Preliminary

operations; CAD to VIZ workflow (optimization of cad files and their alignment); BIM to VIZ workflow (Link Revit and Manage Links, optimization of the 3D model); Basic modeling (purposes of 2D shapes, 3D primitives, modifiers and sub-objects)

### LESSON 2 - Modeling (second part)

Modeling: a question of method; The virtual sculptor: tools and techniques for architectural modeling

### LESSON 3 - Modeling (third part)

The modeling of architectural elements; Exercise: modeling of the course reference; Concept modeling: from VIZ to BIM (exporting models in Revit as conceptual masses)

### LESSON 4 - Rendering

Rendering as an algorithm; Why Corona Renderer: Corona's philosophy; Use Corona: the Toolbar, the VFB, the power of LightMix, Cameras; The optimization of the settings: GI vs AA, Path Tracing vs UHD Cache

### LESSON 5 - Lighting

The art of lighting; Light in architecture; Daylight (Corona Sun & Sky system, Daylight system, Image Base Lighting) Artificial lights; Painting and sculpting with light: advanced lighting techniques.

### LESSON 6 - Shading (first part)

PBR materials (physically correct materials); The study of materials; Basic materials for architecture.

### LESSON 7 - Shading (second part)

Advanced materials for architecture; Final exercise; Image planning: learning how to tell architecture

## Activities

The course has a pretty operational character, with communications and activities led by the teacher, aiming at experimenting a methodological process and at learning principles and practices characterizing the modeling and management of information in a BIM environment.

## Working materials

Participants will be provided with digital materials for the step-by-step development of the proposed theme, an appropriate bibliography and / or in-depth website will also be indicated.

## Place

The course will take place remotely on the Microsoft Teams platform, room's tutor Matteo Cavaglià

## Dates and time

The course, lasting 28 hours, will take place on the following dates and times:

December 13 to 22, 2021 - dates: 13, 14, 15, 16, 20, 21, 22 (time: 14:00-18:00)

## Teacher

Luca Sormani

## Software

Participants will use their own software, even trial; program used is Corona render 6, in combination with Revit, 3DSMax, AutoCAD; instructions for installation and settings of software and plugin will be provided.

The course also offers useful professional bases for obtaining software certifications related to the program topics.