Corso di formazione professionale

GIS TO BIM: G.I.S. OPEN SOURCE GIS FOR URBAN ANALYSIS AND PLANNING - ED2 In lingua inglese

Direttore del corso
Prof. Luigi Cocchiarella

DIPARTIMENTO DI ARCHITETTURA e STUDI URBANI

L'iniziativa è organizzata e promossa da:

POLITECNICO DI MILANO

Corso in collaborazione con l'Ordine degli Architetti PPC della Provincia di Milano. Riconosciuti 20 cfp agli Architetti. Frequenza minima: 80%

In caso di "accreditamento" del corso da parte dei Consigli Nazionali rappresentativi degli Ordini Professionali, i dati dei partecipanti saranno comunicati agli Ordini professionali di riferimento.

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=4570

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, coporate 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
e-mail: 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.

MODELLAZIONE ARCHITETTONICA
DIPARTIMENTO ARCHITETTURA E STUDI URBANI
BIM PLUS

POLITECNICO MILANO 1863

Permanent Training Event

GIS to BIM:

G.I.S. OPEN SOURCE FOR URBAN ANALYSIS AND PLANNING

2ND EDITION

28 HOURS

Academic Institution

Dipartimento di Architettura
e Studi Urbani (DASTU)

Participants

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

Basic competences recommended

No previous computer knowledge is required. Basic knowledge of CAD design and/or GIS software is recommended.

Goal

In the framework of the BIM Architecture Plus professional training offer, this new course is proposed by the MAUD-Lab - Mapping and Urban Data Lab of the Dastu department. In consideration of the fundamental link between architecture and context and between the corresponding modelling workflows, the course focuses on the advanced management of spatial data, highlighting the synergies with the BIM environment. The G.I.S. (Geographic Information System) is a tool that allows to analyse, represent, interrogate entities on the territory. The functionalities of a G.I.S., such as the storage of spatial data, their elaboration and above all their representation in the form of maps or tables, are integrated with the common operations that can be carried out on databases, such as statistical analysis or graphs. These capabilities distinguish geographical information systems from any other information system, allowing users to have a versatile tool that allows them to visualise and analyse information for explaining events and planning strategies. The course is structured in 7 meetings of four hours each. Each lesson is organised into a lecture and a guided exercise on data provided by the teacher to be followed by a question and answer session. The software's functions will be illustrated through the use of explanatory slides, accompanied by exercises aimed at producing thematic maps from the processing of the data provided. This exercise will be developed according to the theoretical content of the presentation.

Programme

LESSON 1 - Open source GIS and spatial data sources. Introduction to QGIS software; illustration of the QGIS software interface; overview of free and institutional data sources available at the various territorial scales (national, regional, local).

LESSON 2 – Benefits of data integration GIS + BIM. Differences between data format and standards in GIS and BIM (scale, coordi-nation system, representation of 3D geometry, multi-user access, layers management), GEOBIM data integration. Brief introduction on international GIS data sources at global scale including both raster and vector datasets (e.g. USGS; Esri Open Data Hub, Natural Earth Data, Terra Populus, UNEP).

LESSON 3 - Georeferencing and reference systems. Short theoretical notes on reference systems and related projections; reference systems and projections used in the Lombardy region; setting of the reference systems and change of coordinates of the territorial data in QGIS; overlapping CAD data (architectural project) and GIS data.

LESSON 4 - Advanced territorial data analysis functions. Search and installation of plugins; illustration of some QGIS plugins (for example: open street map, dxf and relationships with CAD, BIM data [RVT], cadastral data [CXF]; illustration of the main geoprocessing and geome-try commands in QGIS.

LESSON 5 - Geoprocessing and calculation functions. Geoprocessing tools: guided tutorial with QGIS; advanced calculations on spatial data tables (for example: calculation of indicators, automatic analysis tools, etc.).

LESSON 6 – Thematic mapping. QGIS for the representation of spatial data and the production of thematic cartography; layout with QGIS and management of the related elements; advanced automatic and manual management of printing legends.

LESSON 7 – Raster data management (Digital Elevation Model, Satellite images) and mapping in Qgis. Raster data processing and spatial statistics. Exercise with data provided by the teachers.

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 GIS environment and their nexus with BIM.

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, Tutor: Fabio Manfredini.

Dates and time

The course, lasting 28 hours, will take place on the following dates and times:
June 23 - July 9, 2021 - June 23, 24, 30, July 02, 07, 08, 09 (09:00 to 13:00)

Teachers

Fabio Manfredini
Viviana Giavarini
Maryam Karimi
Luigi Carbone

Software

The software QGIS 3.10.11. 'A Coruña' (Long Term Release) will be used; for the interactions with Revit release 2021 is recommended, or 2020 or 2019, even trial; instructions on installation and settings of software and plugins will be provided The course also offers useful professional bases for obtaining software certifications related to the program topics.

MODELLAZIONE ARCHITETTONICA
DIPARTIMENTO ARCHITETTURA E STUDI URBANI
BIM PLUS