The course is part of the multidisciplinary project “Laboratory of Places”, involving the Politecnico di Milano and Canova Association in partnership with national and international centres of high training collaborating in a series of summer workshops. The workshop is supported by ICOMOS Italia (International Council on Monuments and Sites) and ISPRS (International Society for Photogrammetry and Remote Sensing) and Ente di Gestione dei Sacri Monti.

The mission of “Laboratory of Places” is to combine geomatics techniques and restoration for interdisciplinary knowledge and the preservation of historical and architectural heritage. During this edition, the case of study will be some building of the Sacred Mount Calvary of Domodossola.

The main topic of the school is the survey techniques designed for three-dimensional modeling of ancient buildings and the extraction of all metric information useful in planning reconstruction, restoration, maintenance and conservation of cultural heritage. The participants, divided into groups, will deal with 3D surveying of the building, the extraction of metric and material information from the acquired data with the aim to understand the original morphology and provide material for a preliminary project for the recovery and reuse of the structure. The aim of the course is to provide the minimum theoretical tools and insights on latest techniques, with day and evening workshops. Practical activities will be structured so that each participant can experience first-hand the various survey techniques using a variety of equipment and software. The major focus will be on operational issues related to the measurement technique using TLS (Terrestrial Laser Scanner), the processing of the acquired data for the extraction of plans, sections and the creation of 3D models. Simultaneously, aerial (with UAV) and terrestrial close range photogrammetric methods will be presented, focusing the training activities on three-dimensional reconstruction of the site from images and the production of photogrammetric classics such as orthophotos. A special day will be reserved for the ultimate innovative 3D survey techniques “portable mobile mapping systems” offered by Leica Geosystems, partner and sponsor of our summer school. It is not a commercial event, but a technological one where participants will assist to a real survey using the Leica Pegasus:Backpack and working using the acquired data.

The course is open to students of architecture, archaeology and engineering as well as professionals in Cultural Heritage and the Historic Preservation sector. The “Laboratory of Places” can be a valuable source for those interested in deepening their own understanding of the latest survey and representation methods as well as their utilization in a contemporary business practice.

**Summer school program**

The program includes both practical and theoretical lessons. Main topics involving in-depth study will be 3D Survey Techniques applied to Cultural Heritage:

- TLS (Terrestrial Laser Scanner) instrumentation
- Close Range Photogrammetry techniques for architecture
- UAV Photogrammetry
- Close Range Photogrammetry techniques for decorations and little objects
- Mentions of classical survey techniques (Total Station, GPS) are also programmed as fundamental support in the architectural survey. During the course data will be elaborated on field in order to assure complete training for the students.

**Full days seminars:**

- "A travel into the Ossola architecture"
  Dr. Maurizio Cesprini

- "Advanced basics of photography aimed for Cultural Heritage Survey"
  Dr. Geert J. Verhoeven

- "Pegasus Mobile:Backpack - New technologies of mobile mapping"
  Dr. Simone Oppici

The final evaluation consists in a public presentation of the group work and it is scheduled on the last day of the workshop. All course participants are encouraged to bring a personal laptop (with a mouse) and a digital camera.

**MAXIMUM NUMBER OF PARTICIPANTS: 25**

During the school, the participants will be divided into groups. The photos on this flyer refer to previous editions of the summerschool.

**Tutors**

- Prof. Cristiana Achille
  Professor of Architectural Survey
  Politecnico di Milano – ABC Dep. - 3D Survey Group, Milan, Italy

- Prof. Francesco Fassi
  Professor of Architectural Survey, Topography and Photogrammetry
  Politecnico di Milano – ABC Dep. - 3D Survey Group, Milan, Italy

- Eng. Ph.D. Fausta Fiorillo
  Professor of Graphic Representation
  Politecnico di Milano – ABC Dep. - 3D Survey Group, Milan, Italy

- Arch. Ph.D. Alessandro Mandelli
  Politecnico di Milano – ABC Dep. - 3D Survey Group, Milan, Italy

- Arch. Luca Perfetti
  Politecnico di Milano – ABC Dep. - 3D Survey Group, Milan, Italy

- Dr. Marta Caroselli
  Researcher
  SUPSI - Department of the environment, construction and design, Lugano, Switzerland

- Dr. Geert J. Verhoeven
  Researcher - LBI for Archaeological Prospection & Virtual Archaeology
  Ludwig Boltzmann Gesellschaft GmbH - Austria

- Prof. Richard Laing
  Professor of Built Environment Visualisation
  The Scott Sutherland School of Architecture & Built Environment Robert Gordon University, Aberdeen, UK

- Ken Marquardt
  Canova Association President
  Dr. Maurizio Cesprini
  Canova Association

- Dr. Elena De Filippis
  Director of “Ente di gestione dei Sacri Monti”

- With the welcome support of:
  Eng. Arch. Maurizio Di Stefano
  ICOMOS Italia President
  Prof. Stefano Della Torre
  Director of A.B.C. Dep.
  Politecnico di Milano – ABC Dep., Milan, Italy

**Organized by:**

- Politecnico di Milano
  A.B.C. Dep. - Architecture, Built Environment and Construction Engineering

**School directors:** Francesco Fassi, Cristiana Achille, Ken Marquardt
Registration form

To be delivered or shipped WITHIN 30 April 2018 to the secretariat of the course (via email) together with a CV.

I authorize the inclusion of my data in your computer files, in accordance with the provisions of the law on the protection of personal data.
I authorize to use my personal data to send communications on continuing education courses and the development of a statistical survey. At any time, in accordance with Legislative Decree 196/03. I can still have access to my data, request the modification or cancellation.

□ YES □ NO

FIRST NAME:________________________________________
SURNAME:_______________________________
DATE AND PLACE OF BIRTH:__________________________
EDUCATION:________________________________________
C.F. / IVA:____________________________________________
TITLE :____________________________________________
SOCIETY:____________________________________________
ADDRESS:____________________________________________
CAP:________________________________________________
TOWN:______________________________________________
PHONE:_____________________________________________
MOBILE PHONE:_____________________________________
EMAIL:_____________________________________________
DATA:______________________________________________
SIGNATURE: _________________________________________

Important Dates:
Workshop date: 23.07.2018 - 01.08.2018
Registration before: 30 April 2018.
Communication of acceptance: 15 May 2018

Venue:
The Sacred Mount Calvary of Domodossola (also known as Sacro Monte Calvario) is a Roman Catholic sanctuary on the Mattarel-la Hill, overlooking Domodossola (Piedmont, northern Italy). It is one of the nine Sacri Monti of Piedmont and Lombardy, included in the UNESCO World Heritage list.

Registration fee: 650€
It includes fullboard accommodation at Sacred Mount Calvary of Domodossola. The fee is so divided in two parts:
• 250€ to be paid to Politecnico di Milano at registration acceptance communication
• 400€ to be paid to the Canova Association at the summer-school opening day

For further information please contact:
cristiana.achille@polimi.it - francesco.fassi@polimi.it
associazione@canovacanova.com

... or see the web sites.
http://www.sitech-3dsurvey.polimi.it/
http://www.canovacanova.com
Facebook: https://www.facebook.com/laboratoriodeiluoghi/

Laboratory of Places 2018
History, Survey, Evolution
Summer School: Surveying Cultural Heritage
7th Edition
Sacred Mount Calvary of Domodossola
July 23rd to August 1st, 2018

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