

## English Version

### **PRESENTATION**

The Doctorate in Representation and Survey Sciences (formerly in Survey, analysis and representation of architecture and the environment) was activated starting with cycle XVIII (Academic Year 2002/2003); the Doctorate merged two other Doctorates, one in Drawing and survey of building heritage (activated beginning with cycle V) and Survey and Representation of architecture and the Environment (activated beginning with cycle VI).

Ever since it was founded (academic year 2005-2006), the Doctorate for which renewal is being requested is taught at the NATIONAL DOCTORATE SCHOOL in 'Representation and Survey Sciences' from which it has taken its name in order to better qualify the school itself and facilitate internationalization.

The School was founded in June 2005 following a resolution by the Academic Senate of the University of Florence and groups different kinds of doctorates (ICAR 17) already held in several universities. For the first three years, the school was established in Florence. The aim of the national interuniversity consortium that decided to found the school was to exploit the synergy created between the different doctorates to achieve a high level of scientific and technological specialization.

Furthermore, in order to maintain a uniform cultural base shared by the entire scientific reference community, a network was created last year for all ICAR 17 doctorate students, allowing them to exchange information and create scientific and critical reference data for the entire community involved in Drawing. The network is intended to be used to maintain ongoing constructive criticism of nationwide research and share the educational principles adopted in the field of Representation and Survey.

### **SCIENTIFIC AND EDUCATIONAL OBJECTIVE OF DOCTORATE**

The overall educational aims of the Doctorate, in line with those of the School, focus mainly on the education/training of researchers in the following fields: architectural drawing, survey, documentation and critical interpretation of our architectural and environmental heritage.

These aims intend to form a PhD Researcher deeply involved in the contents of the scientific area (ICAR 17), and therefore able to teach and apply innovative research methods in that field, and, following each person's skills and disposition, be highly specialized in order to carry out unique research studies and/or satisfactory professional activities.

To achieve this objective, the researchers are taught the scientific and methodological skills required to organize and develop studies on issues pertaining to Drawing. In this regard, given the inevitably diverse kind of initial education received by post-graduate students, educational activities will primarily concentrate, first and foremost, on improving their basic knowledge, and prepare them to develop their own doctoral dissertation.

The specific objectives of the Doctorate is to provide satisfactory understanding of the main scientific notions of representation and the drawing and survey of architecture, bearing in mind the stable and structural relationship between architecture and the urban environment and context.

Scientific knowledge and know-how therefore focus on the following areas:

- Drawing intended as a language for knowledge and communication. History and methods.
- Architectural and environmental survey. History, methods and tools.
- Science of representation and geometry. History, methods and tools.
- Integrated technologies and innovative forms of representation. Tools and methods.

Education and training focus primarily on the application of theoretical, philological and experimental methods to the subjects taught in the Doctorate within the framework of a rigorously scientific approach to the general issues of representation.

Theory involves the study of representation, including recent IT techniques and how it can be used to create models.

Philology is applied to the study of archival, bibliographic and iconographic sources. Experimentation involves exploiting the many instruments and tools available in the labs of the Department and applying them to the issues in question.

The first year of the Doctorate course, primarily dedicated to teaching and training, involves theoretical lessons, seminars, workshops and stages organized in Rome and in other locations used by the Departments affiliated to the National School, as well as in different research centers and institutions in Italy and abroad involved in the main subjects and aims of the study course. To enhance the possibility of meeting and exchanging information with other institutions and Doctorate schools, our Department of History, Drawing and Restoration of Architecture has implemented an experimental, videoconference communications project using new technology in order to achieve the objectives of the Department of Drawing, Analysis and Survey of Architecture.

### **RESEARCH TOPICS**

Since this is a disciplinary doctorate, the research topics involve the contents of the specific discipline, Drawing (ICAR 17), in particular the representation of architecture and the environment in the broadest sense possible, in other words as a cognitive tool of the laws governing formal structure, a tool to analyse existing values, and a tool to express and visually communicate the design concept at all levels – architectural, urban and territorial. Contents include: the scientific fundamentals of drawing, theory and methods; survey as a tool to understand reality, its direct and instrumental methods (topographic, photogrammetric and computerised methodology), its metric, morphological and thematic restitution procedures and techniques (also digital); drawings as a graphic, infographic and multimedia language applied to processes required to understand existing objects, as well as design processes, from the formulation of an idea to its final development. Contents will also include history as a transversal thematic issue necessary to understand the development of these thematic sectors as well as study in-depth the more meaningful steps in their evolution.

### **RESOURCES AVAILABLE TO DOCTORATE STUDENTS (CLASSROOMS, LABORATORIES)**

The following Laboratories of the Department of History, Drawing and Restoration of Architecture are available to doctorate students:

Laboratory of Innovation in architectural survey, representation and analysis (Location: Piazza Borghese)

Laboratory of Drawing of the Environment and Architecture (Location: Castro Laurenziano)

Laboratory of Analysis and Survey of urban transformations (Location: via Gramsci) Laboratory of Analysis of materials (experimental)

The laboratories are equipped with equipment for topographical survey (total stations, etc.), photogrammetric survey (chemical and digital metric cameras, analytical stereorestitutors, etc.), computerised equipment for digital survey (3D laser scanner) and graphic elaboration or modelling, as well as prototyping instruments (3D printers). Apart from the Laboratories, classrooms are available to doctorate students with restitution, graphic elaboration, and online digital and virtual modelling programmes.

### **NOTA BENE**

It is important to point out that the Doctorate, initiated in 2002 with the XVIII cycle entitled: Survey, Analysis and Representation of Architecture and the Environment, was the result of a merger between the doctorates in 'Drawing and Survey of Building Heritage' and 'Survey and Representation of Architecture and

the Environment'. Since 2005, after affiliation to the NATIONAL DOCTORATE SCHOOL in "Representation and Survey Sciences" the name of the doctorate was changed.

The School is part of a consortium of the following doctorates:

- Representation of Architecture and the Environment, Bari Polytechnic;
- Theory and History of Representation, University of Catania – Siracusa;
- Representation and Survey of Architecture and the Environment, University 'G. D'Annunzio' Chieti – Pescara;
- Survey and Representation of Architecture and the Environment, University of Florence;
- Representation and Survey Sciences, University of Palermo;
- Survey and Representation of Mediterranean Architecture, Mediterranean University of Reggio Calabria.

The school promotes:

- coordinated organisation of different educational and research activities;
- seminars, training courses and conferences etc. required for basic institutional educational activities;
- joint educational activities, divided in credits;
- initiatives to internationalise the School and individual doctorates.