

### **GIScience and Unmanned System for the integrated management of the territory and the natural resources - with majors**

- 1) Production and management of geo-information**
- 2) GIScience for environmental conflict management and participation on public decision making (distance learning)**
- 3) Cartography and GIS for green infrastructures (distance learning)**
- 4) Geoinformation and new technologies for sustainable agriculture (distance learning)**
- 5) Geotechnologies and geoinformation for territorial planning (distance learning)**
- 6) Design and management of spatial data infrastructures and GIS development for the protection and management of the territory (distance learning)**
- 7) GIScience and Geoinformatics (distance learning)**

#### Professional outlets:

*1) Production and management of geo-information (face to face);* The academic path prepares multipurpose professionals expert on evaluation and management of existing spatial information and in the planning of necessary actions to acquire new information by defining the most appropriate technologies (in particular the role of the Unmanned Systems) according to the needs of the organization. These GIScience professionals can find employment opportunities in the public sector, businesses and non-profit organization as: experts on spatial data valorisation; experts on design and management of spatial data infrastructure; experts at national and European level about the policies of territorial information under the INSPIRE Directive; GIS experts and managers; 5 spatial analysts; experts and responsible of territorial databases; experts and manager of georeferenced marketing.

*2) GIScience for environmental conflict management and participation on public decision making (distance learning);* The academic path GIScience for environmental conflict management and participation in public decision making (distance learning) prepares multipurpose professionals expert on management of inclusive decision-making processes and environmental conflicts in the framework of sustainable territorial citizenship implementing the Aarhus Convention and the European and national related policies. These GIScience professionals can find employment opportunities in the public sector, businesses and non-profit organization as experts on the use of mapping and GIS for visualization of scenarios related to complex territorial choices; experts on management of the crowdsourcing of information and geographical knowledge; GIS and inclusive mapping experts during EIA, SEA, and

Assessment of Implications processes; experts on cartographic visualization in participatory processes and management of environmental conflicts.

3) *Cartography and GIS for green infrastructures (distance learning)*; The academic path on cartography and GIS for green infrastructures (distance learning) prepares multipurpose professionals expert on design of green infrastructures (green and blue) in the framework of the European integrated policies for biodiversity conservation climate change. These GIScience professionals can find employment opportunities in the public sector, businesses and non-profit organization as experts on the use of cartography and GIS for the visualization of development scenarios, facilitating public debate on alternatives during processes of design and management of green/blue infrastructures; GIS experts on design of ecological networks and connections between protected areas; GIS experts on management of city parks and connections with the green infrastructure; GIS experts on design of land and river ecological corridors; GIS experts on road ecology.

4) *Geoinformation and new technologies for sustainable agriculture (distance learning)*; The academic path on geoinformation and new technologies for sustainable agriculture (distance learning), prepares multipurpose professionals expert in the treatment of geographical information and related technology for the improvement of the environmental performance of agriculture and the spread of sustainable agricultural practices. These GIScience professionals can find employment opportunities in public administrations, business, organizations, as experts on the appropriate tools for managing interactions between agriculture and ecosystems and the consolidation of sustainable farming practices with low use of external inputs and fossil fuels. Among the possible employment opportunities: GIS experts; spatial analysts; experts on interaction among agricultural.

5) *Geotechnologies nad geoinformation for territorial planning (distance learning)*; The academic path on Geotechnologies and geoinformation for territorial planning (distance learning) prepare multipurpose professional experts in the use of new geographic information technologies for the management and governance of the territory. These GIScience professionals can find job opportunities in public administration, professional studies, institutions, companies, freelance professionals, as experts in the use of a wide range of tools and techniques for the territorial and environmental survey, cartography and GIS in spatial planning at urban and regional scale, participating in the innovative development of relations between BIM (Building information Modeling), IIM (Infrastructure Information Modeling) and GIS.

6) *Design and management of spatial data infrastructures and GIS development for the protection and management of the territory (distance learning)*; *Design and management of spatial data infrastructures and GIS development for the protection and management of the territory (distance learning)*, Prepare multipurpose professional experts in design and management of Spatial Data Infrastructures,

*WebGIS, GIS development. These GIScience professionals can find employment opportunities in the public sector, institutions, companies, organizations, as: experts in the use, design, implementation and management of geoportals for the publication of spatial data in accordance with the RDNT Italian standard and INSPIRE; experts in the compilation of metadata according to the RDNT Italian standard; in the processing of data produced by Public Administration and in the management of Topographical geodatabases through the use of GeoUML Methodology according to the RDNT specifications; in the design and management of WebGIS made with Open Source technology and in the development of new GIS applications.*

7) *GIScience and Geoinformatics (distance learning)*; The academic path prepares multipurpose professional expertst in geo-information and geoinformatics. These GIScience professionals have solid knowledge and skills in Python programming, in the management and development of projects related to the territory, from the management of spatial data to the production of WebGIS systems. As GIScience professionals they can find employment opportunities as external experts, managers in public administrations, professional bodies companies, independent consultants, implementing a wide range of instruments and techniques for the development of custom GIS software solutions, webGIS, cartographic production, management, development and analysis of databases, geodatabases and big earth data.

Director: Massimo De Marchi

Level: 2

Duration: one-year

Period: November 2021/ September 2022

Teaching method: taught class / distance learning

Language: Italian / some workshops will be held in English or Spanish

Short Specialization degree's location: Dipartimento di Ingegneria Civile Edile ed Ambientale – ICEA, Via Marzolo 9, 35131, Padova

Places available: min: 10 / max EU citizens: 37 / max non-EU citizens: 5 (total: 42)

Additional places for students with disabilities: 1

Additional places for students DAC LIST: 1

Registration fee: Euro 3.822,50 (first payment: 2.682,50 euro / second payment: 1.140,00 euro)

Registration fee for students DAC LIST: Euro 782,50

Registration fee for students with disabilities: Euro 22,50

Benefits / Scholarship: n. 2 possible study awards (Euro 1.000,00)

Criteria for selection: evaluation of qualifications

Application submission deadline: October 8th, 2021

Website: <https://www.dicea.unipd.it/master-GIS-science-droni>

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