

**43. PRECISION AGRICULTURE<sup>1</sup>**

Level I

**Department of Agricultural, Food, Environment and Forest Sciences and technologies  
(DAGRI)**

*The master is held in collaboration with  
the University of Tuscia, the University of Teramo and the University of Salerno*

<b>Course coordinator</b>	Marco Vieri
<b>Executive Committee</b>	Michele Pisante Raffaele Casa Domenico Ronga Simone Orlandini Marco Vieri
<b>Contact person for information regarding teaching organization, class schedule, course content</b>	Marco Vieri marco.vieri@unifi.it
<b>Practical-professional profile of the course and industry sector of reference</b>	<p>The first level Master's degree in Precision Agriculture (PA) responds to the growing demand for qualified professionals in the various technical, technological, digital and management aspects necessary for the implementation of PA.</p> <p>The labor market in agriculture, lagging behind European forecasts and forced by governance actions relating to ecological, digital and generational transitions, requires these new professional skills to move from the current 2-3% of corporate adoption to a general adjustment in the next years. Precision Agriculture represents the most advanced integrated agricultural production management system which, through rational decisions per unit of area and per unit of time, determines clear economic, environmental and social benefits.</p> <p>The objectives of Precision Agriculture are to take into account the variability in time and space of the factors that influence the agricultural production process, to improve the efficiency of the inputs in the dynamic management of the process.</p> <p>Improving efficiency means using fewer resources to obtain the same result, or obtaining a better result with the same use of inputs (e.g. water, fertilizers, plant protection products, etc.). The good agricultural practices commonly proposed do not adequately take into consideration the dynamism of agricultural systems, which gives rise to a strong temporal variability in responses to production factors, also due to genotypic and phenotypic differences in the cultivated species. Precision Agriculture aims to understand this spatial and temporal variability and modulate interventions, based on the variability, to optimize the results of the production process in economic and/or environmental terms. To achieve this objective, Precision Agriculture makes use of the best technology can offer in terms of proximal and remote sensors. Sensory and data analysis infrastructures have optimized the ability to monitor variability and implement suitable management to take into account the variability itself, often called site-specific management.</p> <p>A recent survey on the state of the art of Precision Agriculture in Italy, relating to the research projects carried out and in progress, confirms the orientation towards development underway in the European Union and how its commitment is destined to increase rapidly over time, also for the financial support aimed at the planned system innovation</p>

	<p>by the Community Agricultural Policy.</p> <p>However, for Precision Agriculture to find full and rational application, it is necessary to respond to the related training and information needs, to manage the complexity of the tools and processes, in order to rationalize the interventions and enhance the benefits. The methodological approach of the master is based on a multi-skills, inter-intra and multi-disciplinary approach, with the primary objective of providing the professionalism required by the new agriculture, increasingly interactive and interconnected in the different phases of the agri-food chain, from field to the final consumer.</p>
<b>Access prerequisites</b>	A degree obtained according to the regulations ex D.M. n. 270/2004 or ex DM n. 509/1999 or previous or equivalent regulations pursuant to the law 1/2002 or law 240/2010
<b>How the admission procedure takes place</b>	Selection by qualification and interview
<b>The test is aimed at verifying</b>	The training bases necessary for a sufficient understanding of the subjects covered and the reasons for interest in the profession of AP technician.
<b>Duration</b>	The period foreseen for carrying out the frontal teaching activity is from February to the beginning of July 2024 and will take place on Fridays and Saturdays. The period from July to October is dedicated to the internship and the preparation of the thesis. The final exam is scheduled for early November 2024.
<b>Teaching methods</b>	Distance synchronous lessons
<b>Language of instruction</b>	Italian
<b>Verification of knowledge of the language in which the course is delivered</b>	The Master's course is held in Italian. Foreign students are required to have B2 level knowledge of the Italian language, with verification by the Organizing Committee.
<b>Attendance requirements</b>	Compulsory class attendance for admission to the final exam will be tolerated with a maximum number of absences equal to 25% of the total hours, proportionally between the hours scheduled for teaching and hours scheduled for the internship. It will be possible, in addition to following distance lessons in interactive streaming, access the recording of the lessons
<b>Location of the course</b>	University of Florence
<b>Foreseen lecture schedule</b>	Classes take place on weekends (Friday and Saturday)
<b>Examinations procedures and schedule</b>	Final internship report to be discussed in plenary generally in October; two interim evaluations typically in May and July also to coordinate internships
<b>Final examination</b>	At the end of the course there is a final test which consists of: presentation of a paper.

<b>Available places and enrolment fees</b>	
<b>Full-fee students</b>	
<b>Minimum number</b>	12
<b>Maximum Number</b>	24
<b>Enrolment fee</b>	3000 euro
<b>Free supernumerary places</b>	
<b>UNIFI employees</b>	2

<b>Description of the activities and training objectives of the internship</b>	<p>The practical exercises will be concentrated according to specific cultural needs, and will be organized at various cutting-edge companies and centers in Italy in the application of precision agriculture.</p> <p>An internship is foreseen which can be carried out at the Bonifiche Ferraresi company or at private organizations and companies to be agreed with the master's organizing committee with the stipulation of a specific agreement.</p> <p>The final test will consist of the preparation and discussion of a written paper which will focus on an in-depth topic addressed during the training course and internship.</p> <p>The identification of the topic and the preparation of the essay takes place under the supervision of a Master's teacher.</p>
--	--

---

<sup>i</sup> This document is a translation of the form A.1 relating to the characteristics of the course attached to the Decree of the Deputy number 848 (record 153310) of 2th of July 2024, drafted in Italian and issued on the Master | Didattica | Università degli Studi di Firenze | UniFI and which therefore constitutes the only official document. This English translation cannot be used for legal purposes and has the sole purpose of supplying information in English on the content of the public notice.