

Academic Regulations of the Master's degree course in Science and Technologies for Agriculture and Mountain Areas (STAM)

Art. 1

Objective

These regulations govern the objectives, organization, and operation of the degree program in Science and Technologies for Agriculture and Mountain Areas—STAM (hereinafter, the degree program)—in accordance with the principles and provisions of the University Charter, the University's General Regulations, and the University's Academic Regulations.

Art. 2

Name and class

1. The Department of Agricultural and Forestry Sciences (DAFNE) offers a Master's Degree Program in Science and Technologies for Agriculture and Mountain Areas, an interclass degree program belonging to classes LM-69 "Agricultural Sciences and Technologies" and LM-73 "Forestry and Environmental Sciences and Technologies".
2. The program is divided into the following curricula:
 - Digital Agriculture;
 - Mountain Areas Management.

The program is taught entirely in English.

Art. 3

Objectives of the Program

Advances in sensor technology, artificial intelligence, automation, tracking, and robotics are revolutionizing production systems, and this revolution is expected to accelerate in the coming years through the implementation of digital management of mountain areas and agriculture. The acquisition of data through sensors and digital technologies makes low-cost, high-resolution analytical procedures available, increasing the amount of data available and usable for timely planning and the improvement of agricultural and livestock activities in general, as well as specific activities related to

the management, preservation, and conservation of mountain areas. The sustainability of agricultural production and activities in mountain areas depends heavily on the proper use of inputs in these processes; from this perspective, the introduction of digital decision-support tools and the modern technologies associated with them is becoming increasingly essential. This concept is fully aligned with the first mission of the National Recovery and Resilience Plan (which “aims to provide a decisive boost to the revival of the country’s competitiveness and productivity”) and its second mission (which aims for “a radical ecological transition toward complete climate neutrality and sustainable environmental development to mitigate threats to natural and human systems”).

The availability of a large volume of data in the form of time series (big data) will, on the one hand, enable the selection of the most appropriate and effective measures to be introduced for improving agricultural production in terms of quantity and/or quality, for reducing costs and the impact on the environment (soil, water, atmosphere), on animals (improved welfare, increased productive and reproductive efficiency), and on humans (safety, attractiveness of work in the agricultural sector and/or mountain areas); on the other hand, it will enable the development of innovative tools suitable for efficient, modern, and sustainable mountain area management capable of addressing and resolving future challenges.

The role we are seeking to fill is that of a technician capable of introducing and applying new technologies—particularly digital, precision, and “smart” technologies—in the management of farms or rural areas (with a particular focus on mountainous regions); in other words, a “data scientist” who is familiar with the available hardware and software, the available predictive and implementation models, and who, based on the needs of the farm or the mountainous area, can select and implement them in the most efficient way possible. Given its interdisciplinary nature, the master’s degree program will aim to train not a traditional agronomist, but an agronomist who can interface with the world of new digital technologies and with professionals who develop software, sensor systems, innovative startups, and technological services for agriculture, etc. This professional will be able to provide engineering professionals with the agronomic and zootechnical information necessary for the design of new technologies for agriculture and livestock farming. To apply these technologies efficiently, the trained professional must understand, in addition to the more strictly digital-engineering fundamentals, the aspects related to the physiology and needs of organisms, agricultural crops, livestock operations, and agroecosystems in general. A fundamental requirement for the professional profile we aim to develop is the ability to use digital tools that are increasingly widespread today.

Graduates of the STAM program “Science and Technologies for Agriculture and Mountain Areas”—must understand how the agroecosystem functions as a whole and interpret data observed and obtained through various means, including new technologies (from remote sensing to proximity sensors to sensor technology applied in livestock farming, etc.). Students will follow a curriculum designed to deepen their study of natural and agricultural ecosystems through the application of modern digital technologies to plant ecophysiology and genetics, as well as to introduce the digitization of systems for environmental monitoring and energy sources.

Graduates of the master's program will be able to:

- map available (smart, digital) technologies, including in terms of adaptability, effects, risks, etc.
- assess digital transitions and drivers of change toward greater resilience that can deliver more public goods and ecosystem services, including job creation to improve social inclusion;
- interpret data and relate it to the biological realities of natural and artificial ecosystems to better manage them and select the most productive and sustainable variants.

The program is characterized by an international and interdisciplinary approach and offers the opportunity to pursue study tracks in cooperation with foreign universities (e.g., double degree programs). While the technologies covered are innovative, they are designed to be adopted not only in high-tech environments but also by SMEs and companies operating in marginal and mountainous areas.

Graduates with a master's degree in “Science and Technologies for Agriculture and Mountain Areas” will be qualified to work as agronomists and foresters specializing in digitalization and precision farming, environmental data scientists, managers and consultants for the adoption of sustainable technologies in agriculture and land management, specialists in agro-environmental planning at public or private institutions, and researchers or designers of advanced technological systems. They will be able to find employment in agricultural, agri-food, and livestock companies; technology startups and sensor industries; land management agencies, parks, and reserves; international organizations (FAO, EU, etc.); and the technical/specialized education and training sector.

Art. 4

Governing bodies of the degree program

1. The governing bodies of the degree program are:

- a) the Degree Program Council of STAM - Science and Technologies for Agriculture and Mountain Areas;

- b) the Chair of the degree program;
- c) the Quality Assurance (QA) Working Group.

2. The Degree Program Council consists of a minimum of 6 faculty members of the Degree Program, at least 4 of whom are tenured professors, in accordance with the University's regulations and the applicable accreditation requirements. The Degree Program Council also includes student representatives enrolled in the program, in accordance with the Department Regulations. Elections for student representatives are held in accordance with the University's General Regulations.

At the invitation of the Chair, substitute faculty members and those holding teaching contracts may attend meetings of the Degree Program Council without the right to vote, except in cases where the Council is addressing matters related to the program's academic structure, the assignment of substitute teaching positions, contracts, or teaching responsibilities.

Regarding the convening of the Degree Program Council, the validity of meetings, voting procedures, and the recording of proceedings, the provisions set forth in the University Statutes and General Regulations shall apply.

Art. 5

Rights and duties of students

Students are entitled to educational activities that are organized and of a quality appropriate to the objectives of the degree program. Within the framework of the degree program, they exercise the rights granted to them by the University Statutes, the University General Regulations, the University Academic Regulations, and other applicable regulations. They actively participate in the activities of the degree program and are expected to behave responsibly.

Art. 6

Admission requirements

1. Admission to this degree program is on a rolling basis.
2. Students must submit a pre-enrollment application to obtain admission approval through the University's official channels. Students who have submitted their application for admission approval will receive a notice to attend an interview, as required by regulations. Students will be notified of the results of the entrance exam-via email.
3. For admission to the program, even if the student is requesting a transfer from another Master's degree program, candidates must meet the following academic requirements:

- a bachelor's degree in the L25 class (Agricultural and Forestry Sciences and Technologies) (of at least 180 credits) earned at an Italian university or a degree earned abroad that is recognized as equivalent;

- proficiency in English, both written and oral, at a level sufficient to utilize international scientific literature (CEFR Level B2), demonstrated by an appropriate language certificate or verified during the interview referred to in paragraph 6.

4. Admission to the Master's Degree program may also be granted, based on an evaluation by the Degree Program Council, to those holding a three-year bachelor's degree in another field, a master's degree, a four-year degree, or a degree obtained abroad, provided they have earned at least 24 credits (ECTS) distributed as follows:

12 ECTS in the scientific educational sectors of physics, mathematics, informatics, statistics, chemistry and information system:

- from PHYS-01 to PHYS-06
- from MATH-01 to MATH-06
- INFO-01, Informatics
- STAT-01, Statistics
- from CHEM-01 to CHEM-07
- IINF-05/A, information systems

12 ECTS in the educational sectors of agriculture, forestry, botany, plant physiology:

- From AGRI-01 to AGRI-14
- BIO-01/A – General Botany
- BIO-01/B – Systematic Botany
- BIO-01/C – Applied and Environmental Botany
- BIO-02 – Plant Physiology

5. An examination committee selected by the Degree Program Council verifies the students' admission requirements and academic preparation and verifies that any curricular requirements not yet met are fulfilled before enrollment in the Master's Degree program.

6. The assessment referred to in paragraph 5 is conducted via an interview, in person or remotely, following the candidate's identification, and includes an evaluation of English language proficiency.
7. Students who have not yet obtained a bachelor's degree may also take the assessment of personal preparation for master's degree programs, subject to certain conditions and provided they meet the necessary academic requirements.
8. Students who meet the academic requirements and pass the assessment of personal preparation may enroll in the first year of the master's degree program within the deadlines indicated on the student portal.

Art. 7

Organization of the educational activities

1. The organization of teaching activities is guided by criteria of quality, effectiveness, and efficiency, as well as by the principles of good administration.
2. Faculty members' teaching activities are conducted in accordance with University regulations and applicable laws.
3. The course is delivered in a traditional format, i.e., in person. According to current regulations (Ministerial Decree 1835 of December 6, 2024), online delivery is permitted for a maximum of 10% of the total credits.

Art. 8

Exams and assessment methods

1. Exams are always held in person, in accordance with the procedures established by the University Academic Regulations and the schedule set by the Department.
2. Students may take exams for courses scheduled for the academic year in which they are enrolled and for which instruction has been completed, as well as exams for courses from academic years prior to the one in which they are enrolled.
3. Students who, by the end of the summer session, have passed all but one of the exams for their current year of enrollment and previous years may request from the Department's Academic Office to take one of the required exams for the following year in advance, starting with the fall session.
4. Elective exams may be taken at any time and may be selected from among the courses—other than the required ones—offered in the STAM degree program. Students may also choose from courses offered in other master's degree programs at the University, provided that the content of these courses

is consistent with the objectives of the degree program and the student's individual academic plan. The assessment of consistency with these objectives is the responsibility of the Degree Program Council and must then be approved by the Department Council.

5. Prerequisites between the various exams are established by the Degree Program Council.
6. Exams may be written, oral, or practical, or a combination of these formats.
7. Midterm exams may be administered by faculty members in a manner that does not interfere with the regular conduct of parallel courses.

Art. 9

Other educational activities

1. Other educational activities are defined by the Degree Program Council and may include summer schools, other program-related educational activities, and internships designed to facilitate entry into the workforce, which are expressly recognized on the basis of specific agreements entered into with public and private entities, including international ones.
2. In the case of training or orientation internships, credits (1 credit = 25 hours of activity) will be awarded upon the student's submission of a brief report documenting the activities carried out, countersigned by the academic advisor. In the case of project work, credits will be awarded upon the presentation and discussion of the work carried out before a committee appointed by the Director, in the presence of the academic advisor. Professional training activities, such as project work, may also be carried out by students working in groups, always under the guidance of an academic advisor.
3. Internships and thesis projects will preferably be carried out in companies with a focus on technological applications (startups, consulting firms, high-tech agricultural companies, etc.), and local organizations equipped with digital technologies, with particular attention to those operating in mountainous or protected environments (e.g., Natura 2000 areas, parks). The Degree Program Council promotes the establishment of specific agreements to facilitate these activities.
4. Students may independently propose elective educational activities (AFS). Up to 50% of the credits expected for AFS can be acquired through internships, courses, summer or winter schools, and examinations without a numerical grade. The Degree Program Council will verify the coherence of the educational activities proposed by the student with the educational objectives of the course, taking into account the student's stated reasons. The remaining 50% of the academic credits required to complete the AFS must be earned through graded exams.

Art. 10

Inclusion

The degree program promotes the full participation of students with disabilities, specific learning disabilities, or other educational challenges in academic and educational activities.

Art. 11

Academic advising and tutoring

As part of the department's initiatives, the program offers academic advising services, including in collaboration with Italian and international organizations and institutions.

The tutoring program guides and supports students throughout their studies, with the aim of making them active participants in the educational process, encouraging their attendance at classes, and fostering their active participation.

Art. 12

Faculty and student mobility

The degree program promotes faculty and student mobility. In accordance with the educational and training needs of the degree program, it participates in national, European, and international mobility programs, facilitating the mobility of its faculty and students and making its organizational and educational resources available to visiting faculty and students. The degree program promotes the establishment of Erasmus+ and international agreements, study abroad experiences as an integral part of the program, and the possibility of dual degrees.

Art. 13

Final examination

1. To take the final exam, students must have earned the number of credits required by the curriculum, excluding the credits assigned to the final exam, regardless of the number of years they have been enrolled in the program. The credits awarded for the final exam are specified in the program description.
2. The final examination consists of the preparation, under the guidance of an advisor, of a thesis—which may be related to an internship conducted at institutions or companies consistent with the educational path of the degree program—and its defense before a committee in a public session. The

procedures for assigning, writing, submitting, and defending the thesis, as well as the thesis's requirements, are determined by the Department Council and the Degree Program Council.

3. The thesis must comply with the formatting guidelines that the department will publish on its website.

4. The thesis must be submitted to the co-supervisor at least 15 days before the date of the graduation ceremony.

5. The final graduation grade is expressed on a scale of 110, with the possibility of adding "with honors" to the highest score (110/110). The Committee will assign the grade based on the criteria set forth in the current University and Department regulations on the matter.

Art. 14

Recognition of credits

1. Students transferring to the STAM degree program from other degree programs—whether at the University of Tuscia or other universities—that belong to the same LM-69 and LM-73 classes or to other categories, including those covered by former Ministerial Decree No. 509/1999, or from first- and second-level Master's programs, may request recognition of credits earned in their previous program.

2. The body responsible for credit recognition is the Department Council, which may also deliberate upon a proposal from the Degree Program Council, as provided for in the University Regulations. In defining the rules regarding credit recognition, the Department Council aims to recognize the greatest number of credits earned by the student by establishing course equivalencies. The Degree Program Council may conduct interviews to assess the knowledge actually possessed by the student. Failure to recognize credits must be adequately justified and communicated to the applicant. In the case of a transfer between programs belonging to the same class, the number of credits directly recognized for the student within the same scientific-disciplinary sector may not be less than 50% of those already earned.

Art. 15

Quality Assurance and Evaluation of Teaching

1. The degree program contributes to the University's self-evaluation system in the forms and manner prescribed by current regulations.

2. The Quality Assurance (QA) Working Group for the degree program oversees the proper implementation of procedures related to the degree program in accordance with timelines and frequencies consistent with those required by applicable regulations, ensures that information on the SUA degree program profile is continuously updated, and provides support to the Chair of the degree program during the preparation of the Annual Monitoring Report and the review report. Furthermore, it ensures the proper flow of information between Joint Committees and the Quality Assurance Board. The QA Working Group consists of the Chair of the Course, faculty members designated by the Degree Program Council, the head of the Department's Academic Secretariat, and student representatives.
3. The Quality Assurance (QA) Working Group operates collegially, keeping the Degree Program Council constantly informed.

Art. 16

Final provisions

1. For matters not covered by these Regulations, reference is made to the University Academic Regulations and the Departmental Regulations.
2. The provisions contained in these Regulations may be amended upon the proposal of the Chair, at least one-third of the members of the Degree Program Council, or the student representatives.