Annex N

Subject Benchmark Statement of Agronomy, I and II Cycles of Higher Education

VI and VII Cycles of the National Qualifications Frameworks (NQF)

2024

I. Introduction

The Subject Benchmark Statement for Agronomy establishes the academic standards for higher education programmes at the Bachelor's and Master's levels. It defines the minimum learning outcomes, along with the required teaching, learning, and assessment methods, resources, and other key components necessary to achieve those outcomes. The Statement is aligned with the National Qualifications Framework of Georgia, the European Higher Education Qualifications Framework, the European Qualifications Framework for Lifelong Learning, as well as labor market needs, national and international standards, best practices, and relevant legal requirements.

All institutions offering Bachelor's and Master's degree programmes in Agronomy are required to meet the minimum learning outcomes outlined in the Subject Benchmark Statement. However, to promote innovation, diversity, and flexibility, educational institutions have the autonomy to design the specific content of their programmes and to choose their own methods of delivery. They may also define additional learning outcomes beyond the minimum requirements.

This Subject Benchmark Statement sets out the minimum requirements and provisions that must be observed and fulfilled by all higher education institutions that offer, or plan to offer, Bachelor's and Master's programmes in Agronomy. The content and structure of these programmes, along with the teaching and assessment methods, are determined by each institution in accordance with Georgian legislation and the specific regulations established within its framework.

The aim of the Subject Benchmark Statement is to support the development of higher education programmes in Agronomy that are aligned with both national and international standards. This alignment promotes student mobility, facilitates progression to higher levels of study, supports professional development, ensures international recognition of qualifications, and enhances graduates' employability and competitiveness in the local and global labor market.

Familiarization with this Subject Benchmark Statement is recommended for the following groups:

- Academic, invited, and administrative staff of higher education institutions involved in the development and implementation of Agronomy programmes;
- Members of accreditation, authorization, and appeal councils engaged in evaluating educational programmes, assessing their compliance with accreditation standards, and making related decisions;

- Individuals seeking to enroll in Agronomy-related educational programmes;
- Students interested in understanding the knowledge, skills, and competences they will acquire upon completion of Bachelor's or Master's programmes in Agronomy;
- Employers seeking information about the qualifications and competences of graduates from Bachelor's and Master's programmes in Agronomy.

The English title of this Subject Benchmark Statement is **Subject Benchmark Statement for Agronomy.**

The validity period of this Subject Benchmark Statement is seven years.

II. Description of the Field of Study

Agronomy is an academic discipline grounded in both scientific and practical knowledge, focused on the production of high-quality, competitive agricultural crops.

Agronomy encompasses knowledge of crop cultivation and management, soil fertility and yield optimization, quality improvement of agricultural products, as well as modern farming systems. Agronomy also involves the development and introduction of high-quality, resource-efficient crop varieties; the optimal use of agricultural machinery and equipment; the implementation of modern plant nutrition systems; and the application of advanced methods for managing plant diseases and pests. It also promotes the use of bio (organic) production techniques. To achieve these objectives, agronomy relies on scientific research, practical applications, laboratory methods, and field experiments.

A key objective of higher education in agriculture, considering regional priorities, is to prepare highly qualified and competitive graduates with Bachelor's or Master's degrees in Agronomy. These graduates should be employable, career-oriented, and equipped with strong theoretical knowledge, research skills, and practical expertise in the field.

The Bachelor's programme in Agronomy offers comprehensive knowledge and practical skills related to the fundamental principles and methods involved in agronomic processes. It covers the planning and management of agrotechnological operations, as well as the distinctive characteristics of agricultural production.

The Master's degree programme in Agronomy focuses on the development of advanced and systematic skills in planning and managing agronomic processes, while also deepening research competencies. The knowledge and skills acquired through Bachelor's and Master's programmes in Agronomy prepare graduates to pursue further studies at the Master's or Doctorate level.

According to Order №69/n of the Minister of Education, Science, Culture, and Sport of Georgia, dated 10 April 2019, which approves the classification of fields of study, the following qualifications may be awarded within the framework of educational programmes covered by this Subject Benchmark Statement:

1) Bachelor/Master of Agronomy

2) Bachelor/Master of Science (BSc/MSc) in Agronomy

III. Learning Outcomes

The learning outcomes defined in the Subject Benchmark Statement for Agronomy are designed to develop the knowledge, skills, autonomy, and responsibility that graduates must demonstrate upon completing their Bachelor's or Master's studies. These outcomes represent the minimum standards that all higher education institutions are required to meet. Institutions may also define additional learning outcomes in their programmes, reflecting best international practices and the latest advancements and experiences in the field. Furthermore, they have the flexibility to present the learning outcomes in three distinct categories—knowledge and understanding, skills, and responsibility and autonomy—either separately or in an integrated format.

3.1. Learning Outcomes of the Bachelor's Programme in Agronomy

A graduate of the Bachelor's programme in Agronomy:

- Describes the characteristics of plant biology, the biochemical and physiological processes in plants, ecological factors, and their impact on the ecosystem;
- Discusses general principles of plant protection, the main pests and diseases of agricultural crops, and integrated control measures against them;
- Assesses soils according to soil genesis; correlates climatic conditions with the growth and development of specific plants; and develops soil fertility management plans tailored to relevant crops.
- Reviews the basic methods of developing and evaluating new plant varieties and hybrids;
- Considers the fundamental requirements of food safety and food security in the implementation of agronomic processes;
- Describes the bioecological and agronomic characteristics of agricultural crops and selects

appropriate cultivation practices;

- Selects mechanised technologies for the cultivation and maintenance of agricultural crops;
- Describes the general principles of organic farming and agricultural branches;
- Searches for and analyzes information on agronomic issues and formulates well-founded conclusions.
- Develops and implements a research/practical project/thesis specific to the field of agronomy and presents it in forms and technologies appropriate to the context;
- Possesses a thorough command of the terminology specific to the field and prepares professional documentation;
- Communicates with stakeholders in Georgian and
  Foreign languages and uses modern information and communication technologies.

3.2 Learning Outcomes of the Master's Educational Programme in Agronomy

A graduate of the Master's educational programme in Agronomy:

- describes in depth the characteristics of natural and artificial ecosystems, the principles of plant selection and adaptation, and modern agronomic and biotechnological research methods for breeding new varieties and hybrids;
- determines the fertility potential of soil, considering its morphological, physico-chemical properties;
- assesses the damage caused by harmful organisms, plans and organises plant protection measures;
- based on relevant methodologies, develops scientifically/practically approved schemes of agronomic activity;
- makes well-founded agrotechnological decisions with the aim of achieving scientific and practical results;
- on the basis of scientific research results, effectively directs the efficient and optimal functioning of agricultural production;
- possesses a thorough command of the terminology specific to the field and prepares professional documentation;
- produces a research-based paper, in compliance with the principles of academic integrity and using the latest research methods, and presents it before the academic and professional community;
- demonstrates professional skills of communication, coordination and cooperation with colleagues and managers of agricultural production.

IV. Qualification to be awarded

According to the classification of fields of study approved by Order No. 69/n of 10 April 2019 of the Minister of Education, Science, Culture and Sport of Georgia, the qualifications specified in this section may be awarded within the field of Agronomy.

The formulation of the qualification is determined based on the content, structure and goals of the educational programme.

If a Bachelor's or Master's degree programme in the field of Agronomy is oriented towards the theoretical study of the discipline and the development of practical skills, the formulation of the qualification to be awarded may be as follows:

Bachelor of Agronomy
Master of Agronomy

If the primary objective of a Bachelor's or Master's degree programme in Agronomy is to equip graduates with scientific research skills, the formulation of the qualification to be awarded may take the following form:

Bachelor of Science (BSc) in Agronomy
Master of Science M(Sc) in Agronomy

V. Teaching, Learning and Evaluation

The teaching, learning, and assessment methods outlined in this Subject Benchmark Statement are recommendations grounded in the principles of student-centered learning. The primary goal of education in Agronomy is to prepare specialists equipped with current knowledge and practical skills. To achieve the objectives and learning outcomes of Bachelor's and Master's programmes in Agronomy—and to effectively evaluate these outcomes—it is essential to implement teaching, learning, and assessment methods aligned with the programme's goals. Student assessment should be multifaceted, ensuring that the objectives and learning outcomes of each course are thoroughly evaluated. As students' progress from the Bachelor's to the Master's level, research-based teaching approaches should be adopted to develop their ability to plan and conduct independent research.

5.1. Teaching and Learning Methods

Teaching, learning, and assessment methods should be based on student-centered teaching principles and correspond to the goals and learning outcomes of the educational programme. In addition to developing field-specific skills, these methods should also foster the development of transferable skills. Assessment methods should include feedback from the programme staff to students, aimed at enhancing their knowledge, skills, and values.

Based on the content and objectives of the programme, higher education institutions are authorised to apply the methods listed below or to use alternative methods of their choosing. Additionally, it is permissible to employ teaching and learning methods not explicitly mentioned here, provided they are specified in the syllabus of the respective course.

- During programme delivery, higher education institutions may employ the following methods, among others: Lecture;
- Seminar;
- Laboratory works;
- Practical training;
- Independent Work:
- Internship;
- Individual or group project.

To ensure the high quality of Master's theses, institutions offering Master's programmes must establish clear guidelines for the preparation, submission, and evaluation of research theses, detailing all necessary procedures.

5.2. Assessment Methods

The assessment forms—both interim and final—outlined in each course syllabus may include components that evaluate a student's knowledge, skills, and competencies. Within the framework of academic freedom, instructors independently select evaluation methods and clearly define assessment criteria and their corresponding scores, all of which must be detailed in the course syllabus. Instructors are expected to provide sound justification for their chosen assessment methods and criteria. Effective assessment not only evaluates learning but also supports student motivation and the development of learning skills.

5.3 Development of Student's Practical Skills

Practical education is a vital component of the programme. It offers students the opportunity to apply and further develop the competences acquired in the academic setting under real-life conditions. The primary aim of internships is to equip students with the practical skills necessary to effectively apply their theoretical knowledge to specific situations.

VI. Additional Information

6.1. Academic Staff

Bachelor's and Master's programmes in Agronomy may be delivered by higher education institutions through the involvement of a sufficient number of academic staff and invited specialists with appropriate qualifications. Their expertise and competencies are essential to ensure the stable and effective operation and development of the programmes, as well as the achievement of the defined learning outcomes.

6.2. Material Resources and Infrastructure

Considering the specific requirements of Bachelor's and Master's programmes in Agronomy, higher education institutions must provide teaching facilities equipped with the necessary technical resources. This ensures that academic staff, invited specialists, and students have the essential conditions to achieve the programme's goals and learning outcomes. Practical sessions must take place in laboratory and field environments that meet the relevant standards.

6.3. Employment

Graduates holding a Bachelor's or Master's academic degree in Agronomy may be employed in the following areas:

- Large and small farms;
- Greenhouse farms;
- Agro-consulting centers / companies;
- Ministry of Environment Protection and Agriculture of Georgia and all Regional Divisions under its subordination;
- Service area relevant to the trading network;
- Scientific-research institutes and corresponding profile laboratories;
- Agricultural product processing enterprises and companies;
- Governmental and non-governmental organizations of agricultural profile; State/private research and consulting and service (service) agencies;
- International projects financed by donors;
- General Educational Institutions;
- Become an employer and create a farm independently;
- etc.

6.4. This Subject Benchmark Statement for Higher Education in Agronomy shall enter into force upon approval.

In accordance with the "National Qualifications Framework and Classification of Fields of Study" approved by Order No. 69/n of 10 April 2019 of the Minister of Education, Science, Culture and Sport of Georgia, higher education institutions are obliged to bring their Agronomy programme(s) into compliance with this Subject Benchmark Statement within one year of its approval, unless the programme(s) are due to submit an accreditation application to the Centre in less than one year. If a programme is required to submit an accreditation application within less than one year of the entry into force of this order, the programme indicated in the application must already be aligned with the approved Subject Benchmark Statement for Higher Education in Agronomy. When submitting an accreditation application for a new programme to the National Center for Educational Quality Enhancement, the institution is obliged to ensure full compliance of the programme(s) with the requirements of this Subject Benchmark Statement.

VII. Members of the Subject Benchmark Statement Development Group

7.1. Members of the Document Development Group

Members of the Sectoral Council of Higher Education in Agriculture

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11	Zoia Sikharulidze	LEPL Batumi Shota Rustaveli State University	Doctor of Biology, Head of the Department of Resistance Genetics at the Institute of Phytopathology and Biodiversity, Chief Researcher.

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25	Valerian Amiranashvili	Ltd. – Agronect	Founder of Ltd. – Agronect, Head of Operations.
26	Rusudan Gigashvili	N(N)LE – Sectoral Platform "Future Farmer"	Chairperson of the Sectoral Platform "Future Farmer."
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