



Master's Educational Program

Program Title

ორგანული სოფლის მეურნეობა

Organic Agriculture

Faculty

აგრარული მეცნიერებების და ბიოსისტემების ინჟინერინგის ფაკულტეტი

Faculty of Agricultural Sciences and Biosystems Engineering

Program Head

Professor Eldar GUGAVA

Qualification to be Awarded

Master of Agricultural Sciences, with speciality in Organic Agriculture

Will be awarded upon completion of at least 120 credits of the educational program

Language of Teaching

Georgian

Prerequisite for Admission to the Program

A person with at least a bachelor's degree or equivalent academic degree, enrolled on the basis of the results of master's examinations (General Master's Examination and examination/s as determined by the GTU) is eligible to study at the Master's program. Examination questions/tests will be posted on the GTU website at least one month prior to the examinations. Admission to the program without passing Master's exams is possible according to the rules established by the Ministry of Education and Science of Georgia.

Program Description

The program is based on the ECTS system; 1 credit is equal to 25 hours, which includes both contact and independent work hours. The distribution of credits is presented in the curriculum. The program lasts 2 years (4 semesters) and includes 120 credits. A research component of 45 credits and an education component of 75 credits, including 50 credits of compulsory education courses in the specialty and 15 credits of elective courses.

Industrial internship - on organic farming, which takes place in the third semester - 8 credits. Master's students will undergo practical training in organic farming at a branch enterprise on the basis of a relevant contract.

One semester consists of 20 weeks, including 15 weeks of academic study.

The academic calendar is issued by Rector GTU before the beginning of the semester and published on the website.

In the first semester, the Master's student takes 4 compulsory courses (of 5 credits) and two elective courses of 5 credits.

In the second semester, the Master's student takes 4 required courses of 5 credits and one elective course of 5 credits and has a Master's research project/prospectus covering 5 credits.

In the third semester, the Master's student studies 2 compulsory 6-credit courses and undergoes an industrial internship - on organic farming (8 credits), and undergoes a theoretical/experimental research/colloquium comprising 10 credits.

In the fourth semester, the Master's student completes and defends the Master's thesis, comprising 30 credits.

The order on appointment of the Master's supervisor and the Title of Master's thesis is established by the Dean's Office and approved by the Faculty Council in accordance with the personal work plan of the Master's student. See the personal work plan of the Master's student.

Research Component - The research component of the Master's degree program includes 45 credits. Its mandatory elements are: - Master's research project/prospectus (5 credits); - Theoretical/experimental research/colloquium (10 credits); - Completion and defense of the Master's thesis (30 credits). The Master's student completes the research component according to the topic of the Master's thesis, which is carried out at Georgian Technical University and at an organization of relevant profile, defined by a memorandum of cooperation.

Master's research project/prospectus is assessed with a maximum of 100 points.

Criteria and scales of evaluation of Master's research project/prospectus are given in the rules of evaluation of the research component of the Master's educational program on the GTU website.

Theoretical/experimental research - a Master's student starts the colloquium in the second year of study, in the third semester, and it implies the submission and presentation of material related to the Master's topic/separate part of it. At the colloquium he/she should demonstrate the scope and depth of research on a particular issue, present the results obtained.

The main purpose of the colloquium is to systematize the master's knowledge, to present the results of the work done, to master modern research methods, to independently formulate and solve the issues raised during the work. To develop skills necessary for communication with the professional community.

To evaluate the colloquium, the results of the research will be submitted in writing to the Dean of the Faculty before the end of the relevant academic semester (no later than the 15th academic week), who will form a commission of 3-5 people. The commission should include representatives of the academic staff of the relevant area/direction. The colloquium is evaluated according to 5 criteria: relevance of the conducted research methods and orientation to the problem, quality of the conducted research, drawing a conclusion on the basis of the conducted research, determining the further direction of the research, ability to present the topic.

Criteria and scales of colloquium evaluation are given in the rules of evaluation of the research component of the educational program of Master's degree on the GTU website.

Completion and defense of the qualification work - when the completed qualification work is submitted and publicly defended, the qualification work is evaluated with 100 points. It is necessary to publicly defend it. Public defense of the qualification work is evaluated by the examination commission consisting of 5-7 members according to the 100-point evaluation system according to the following criteria: description of the research problem and relevance, practical significance - score up to 4 points; analysis of literature on the topic of research

- score up to 4 points; use of research methods - score up to 4 points; judgment of the results of the research - score up to 4 points; conclusion on the basis of the research - score up to 4 points; quality of work design and quality of its presentation - score up to 5 points.

Program Objective

The objective of the program is to prepare, in line with the demand of the labor market, qualified personnel for the development of organic agriculture in the agricultural sphere who will be able to find employment in today's growing competitive environment based on acquired scientific knowledge; to teach the student the theoretical and practical issues of the field, which will be research-oriented and necessary for specialists working in the mentioned field, for the production of organic horticultural and livestock products, organization and management of organic farming system along the agricultural line, in accordance with the existing standards, to protect and preserve the unique biological diversity of Georgia, using a variety of methodological approaches, to implement scientific research methods, to minimize pollution accompanying agricultural activities.

Learning Outcomes/Competences (general and professional)

Knowledge and Understanding - upon completion of the educational program, the master will have knowledge of agricultural science in the specialty of organic agriculture, which will allow the development of new and original ideas for the production of organic agricultural products, will understand the monitoring of natural and industrial stocks of phylogenetic resources and the profitable priorities for sustainable use and exploitation;

Ability to apply knowledge in practice - the master will be able to independently conduct biological farming, conduct research, as well as build and manage an organized system of organic (bio, eco) farming; increase soil fertility by biometrics, link the priorities of economically profitable areas with the sustainable use of the most important species (endemics) of the unique and richest phylogenetic fund of Georgia.

Ability to make conclusions - will be able to formulate valid conclusions and determine the relationship between them, considering contemporary, practical needs, based on an awareness of clearly defined problems, taking into account and analyzing the results obtained as a result of research.

Communication skills - the graduate will acquire the ability to communicate with the academic community on important issues in the field of agriculture; also, will be able to understand and process information obtained in the course of communication, prepare written reports and presentations of conducted research using information and communication technologies, cooperate fruitfully with the interested public on the basis of acquired knowledge, provide them with high quality consulting.

Ability to learn - the graduate will be able to understand current issues in the field of agriculture, obtain the latest relevant information, printed or other materials, and independently conduct research based on that information to ensure continuous professional development and adapt to a changing environment.

Values – the master will develop high standards of professional collaboration, will be able to raise and independently resolve issues in the field of organic agriculture, evaluate and contribute to the creation of value in the field.

Methods of Achieving Learning Outcomes (teaching-learning)

- Lecture Seminar (group work) Practical Laboratory Practice
 Course work/Project Master's Thesis Consultation Independent work

In the learning process, depending on the specifics of a particular study course program, teaching methods are used, which are outlined in the relevant study course programs (syllabi):
(discussion, debate, presentation, group work, etc.)

1. **Discussion/debate** – this is the most widely spread method of interactive teaching. A discussion process greatly increases the quality of students' involvement and their activity. A discussion may turn into an argument and this process is not merely confined to the questions posed by the teacher. It develops students' skills in reasoning and substantiating their own ideas.
2. **Cooperative learning** - this is a teaching strategy in which each group member is required not only to learn independently, but also to help his teammate learn the subject better. Each group member works on a problem until everyone has mastered it.
3. **Collaborative work** - using this method implies dividing students into separate groups and giving each group its own task. The group members work at their issues individually and at the same time share their opinions with the rest of the group. According to the problem raised, it is possible to shift the functions among the group members in this process. This strategy ensures the students' maximum involvement in the learning process.
4. **Problem-based learning (PBL)** - a method that uses a specific problem as the initial stage of the process of acquiring and integrating new knowledge.
5. **Demonstration method** - this method implies a visual presentation of information. It is quite effective in terms of achieving results. In many cases, it is better to present the material to students in both audio and visual form simultaneously. The material being studied can be demonstrated by both the teacher and the student. This method helps to make visible the different stages of understanding the learning material, to clarify what students will have to do independently; At the same time, this strategy visualizes the essence of the issue/problem. The demonstration can take a simple form.
6. **Method of analysis** - helps to break down the learning material as a whole into its component parts. This facilitates detailed coverage of individual issues within a complex problem.
7. **Synthesis method** - involves grouping separate issues into a whole. This method helps to develop the ability to see the problem as a whole.
8. **Verbal or oral method.** This method includes lecture, narration, conversation, etc. In the above process, the teacher conveys and explains the learning material through words, and students actively perceive and internalize it by listening, memorizing, and understanding.

9. **Writing work method** - implies the following forms of activity: copying, taking notes, making a synopsis of the material, composing theses, writing an abstract or essay, etc.

10. **Laboratory method** - involves the following types of actions: staging tests, showing video material, dynamic material, etc.

11. **Practical methods** - combine all those forms of teaching that form practical skills of the student. In this case, the student independently performs this or that action on the basis of acquired knowledge, for example, industrial and pedagogical practice, field work, etc.

12. **Explanatory method** - is based on discussing a given issue. In the process of explaining the material, the teacher brings concrete examples, the detailed analysis of which is made in the framework of the given topic.

13. **Project development and presentation** - during the work on the project, the student uses the acquired knowledge and skills to solve a real problem. Project-based learning increases students' motivation and responsibility. The work on a project includes the stages of planning, research, practical activity, and presentation of the results in accordance with the chosen issue. A project is considered to be realized if its results are presented in a clear and convincing manner and in a correct form. It can be done individually, in pairs, or in groups. It can also be done within one subject or within several subjects (subject integration). Once completed, the project will be presented to a wider audience.

Student's Knowledge Assessment System

The student's knowledge is assessed on a 100-point scale.

Positive grades are:

- (A)-Excellent - 91-100 points;
- (B)-Very Good – 81-90 points;
- (C)-Good – 71-80 points;
- (D)-Satisfactory – 61-70 points;
- (E)-Sufficient – 51-60 points.

Negative grades are:

- (FX) - Failed to pass – 41-50 points, which means that the student needs more work to pass and is allowed to take an additional exam once with independent work;
- (F) - Failed - 40 points or less, which means that the work done by the student is insufficient and he/she will have to study the subject again.

Fields of employment

- Ministry of Agriculture of Georgia and its subordinate regional department and agency;
- Ministry of Environmental and Natural Resources Protection; large and small farms;
- Greenhouse farms;
- Laboratories of agricultural profile;
- Agricultural research and advisory service centers;
- Scientific and educational institutions of agrarian specialty (laboratory assistant, researcher);
- Enterprises for processing of agricultural products.

Opportunities for continuing education

PhD educational programs

Human and material resources needed to implement the program

The program is provided with adequate human and material resources. For additional information, please find the attached documentation

Number of attached syllabi: 21