საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

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Bachelor's Educational Program

Program Title

მთის სოფლის გარემოს მდგრადი განვითარება

Sustainable development of mountain rural environment

Faculty

აგრარული მეცნიერებების და ბიოსისტემების ინჟინერინგის ფაკულტეტი

Faculty of Agricultural Science and Bio-systems Engineering

Program Head/Heads

Professor Noe KHOZREVANIDZE

Qualifications to be awarded and the extent of the program in terms of credits

Bachelor of Environmental Studies in Sustainable Development of Mountain Village Environment

Will be awarded in case of completion of at least 240 credits provided by the program.

Language of Teaching

Georgian

Prerequisite for admission to the program

Only the person with a state certificate confirming complete general education or a document equivalent to it, has the right to study at the bachelor's level who will be enrolled in accordance with the procedure established by the legislation of Georgia.

Program Description

In the educational program, the competences defined for the bachelor's degree and the requirements of the employment market are considered according to the framework of higher education qualifications. The preparation of the Bachelor's degree is carried out through credits determined by compulsory and free components. Compulsory components include: education courses and field practice.

The educational program is compiled using the ECTS system. 1 credit is equal to 25 hours, which includes both contact and independent work hours. The capacity of each semester is - 30 ECTS credits. The duration of the program is 4 years (8 semesters). One semester includes 20 weeks. The education process lasts 16 weeks. XVII week is assigned to the thematic project and exam preparation, XVIII-XIX week is the final exam. If necessary, XX week is assigned to an additional exam. A student passes the additional exam only if he/she has scored 41 to 50 points after passing the final exam. The capacity of the educational program is 225 compulsory credits, elective courses- 10 credits and 5 credits of free components.

The maximum score for each course in each semester is 100. The maximum score for the midterm assessment is 60. The midterm assessment consists of 2 components: an ongoing activity and a midterm exam. The maximum evaluation of current activities is 30 points. The maximum grade of the mid-semester exam is 30 points. The sum of the points of the current activity and the mid-semester exam is 60, the minimum competence limit is 30 points, the maximum score of the final exam is 40, the minimum positive score of the final assessment is 11.

The duration of the first academic year is 2 semesters. The student will study 12 education courses (60 credits) during two semesters.

The duration of the second academic year is 2 semesters. The student will study 12 compulsory education courses (60 credits) during two semesters.

The duration of the third academic year is 2 semesters. During two semesters, the student will study 12 education courses (60 credits), of which 1 education course (5 credits) is elective, and 55 credits is a compulsory education course.

The duration of the fourth academic year is 2 semesters. During two semesters, the student will study 10 compulsory courses (60 credits). These include field practice (15 credits), free components (5 credits), and 1 elective course (5 credits), while 35 credits are compulsory courses.

Program Objective

The objective of the interdisciplinary educational program for the sustainable development of the mountain rural environment is to prepare a specialist with a bachelor's degree in environmental science oriented to the rural, municipal, regional and international labor market, who will have knowledge of the concepts of sustainable development of the modern environment, the ability to understand the theories and principles of sustainable development of the rural environment, and to understand the issues of mountain science and will be able to understand the ongoing natural processes in the field of the mountain environment within the scope of their own competence and to define priorities adequately. The educational program ensures the formation of civic self-awareness for the student and the formation of democratic values, ethical and professional respect norms.
The education courses provided by the educational program fully include the established general and sectoral competencies, which clearly reflects what knowledge, skills and competencies the graduate will have.

Learning Outcomes/Competences (general and professional)

Learning outcomes: The "Sustainable Development of the Mountain Rural Environment" undergraduate educational program gives the student the opportunity to acquire knowledge, develop skills and demonstrate them in the following areas:

1. **Defines** functional areas of environmental protection, concepts of sustainable development, modern principles of entrepreneurial activity in rural areas in a constantly changing, multicultural environment.
2. **Identifies** the features of sustainable economic, ecological, social development of mountain villages and the environment of the Caucasus region
3. **Selects** general and specific methods of sustainable development of mountain rural environment, standard and different approaches related to sustainable development processes, characteristics of micro and macroclimatic environment. Uses general and specific methods of sustainable development of the mountain rural environment to participate in the development of the objective, mission, structure, tasks and correct strategy for the protection of the rural environment
4. **Analyzes** the main orientations, principles of sustainable development of mountainous areas, vital and livelihood concepts of sustainable rural environment protection
5. **Explains** the essence of sustainable development of the environment of the mountain village, the features of the emergence of opportunities for the village and its sustainable new environment
6. **Explains** the importance of maintaining the sustainability of rural vitality and the specific characteristics of the mountainous region
7. **Discusses** the diversity of the economic, social and ecological environment of a mountain village
8. **Evaluates** issues of sustainable mountain development, draws conclusions based on theoretical knowledge of practical methods and presents them publicly to the academic or professional community.
9. **Plans** to continue studying independently at the next level of higher education - master's degree
10. **Participates** in the process of formation of professional values, protects the principles of civic responsibility and ethical norms. Shares accepted norms of mountain environment protection, preservation and development, as well as professional ethics.

Methods of achieving learning outcomes (teaching-learning)

☒ Lecture ☒Seminar (group work)☒ Practical ☒ Laboratory ☒Practice
☒ Course work/Project ☒ Consultation ☒ Independent work

In the educational process, depending on the specifics of a particular study program, the following teaching-learning methods are used, which are given in the relevant education course programs (syllabi):

1. Discussion/debates – is one of the most common methods of interactive learning activity. The discussion process dramatically increases the quality of student engagement and activity. The discussion can turn into an argument, and this process is not limited to questions asked by the teacher. It develops the student's ability to reason and justify his own opinion.
2. Cooperative teaching - is a teaching strategy when each member of the group is obliged not only to study by himself/herself, but also to help his/her teammate to study the subject better. Each member of the group works on the problem until all of them have mastered the issue.
3. Collaborative work - teaching using this activity involves dividing students into groups and giving them learning tasks. Group members work on the issue individually and simultaneously share their opinions with the rest of the group. Depending on the set task, it is possible to redistribute functions among the members during the work of the group. This strategy ensures maximum involvement of all students in the learning process.
4. Case study - the teacher will discuss specific cases with the students and they will study the issue in every way and thoroughly. For example, in the field of engineering safety, it can be a discussion of a specific accident or disaster, in political science - a specific, for example, analysis of the Karabakh problem (Armenia-Azerbaijan conflict), etc.
5. Demonstration method – this method of activity involves visual presentation of information. It is quite effective in terms of achieving results. In many cases, it is better to present the material to the students both audio and visual at the same time. The material to be studied can be demonstrated by both the teacher and the student. This method helps us to make visible the different stages of understanding the learning material, specify what the students will have to do independently; At the same time, this strategy visualizes the essence of the issue/problem. Demonstration may take a simple form.
6. The inductive method defines a form of transfer of any knowledge, when the course of thought in the process of learning is directed from facts to generalization, that is, when conveying material, the process proceeds from specific to general.
7. The deductive method defines a form of transfer of any knowledge, which is a logical process of discovering new knowledge based on general knowledge, that is, the process proceeds from the general to the specific.
8. The method of analysis helps us to break down the learning material as a whole into constituent parts. This facilitates detailed coverage of individual issues within a complex problem.
9. The method of synthesis involves grouping separate issues to form a single whole. This method helps to develop the ability to see the problem as a whole.
10. Verbal or oral method. This method includes lecture, narration, conversation, etc. In the mentioned process, the teacher conveys and explains the learning material through words, and the students actively perceive and assimilate it by listening, memorizing and understanding.
11. The method of written work, which involves the following types of actions: making extracts and notes, summarizing the material, drawing up theses, writing a report or essay, etc.
12. Explanatory method – based on reasoning around the given issue. When presenting the material, the teacher cites a specific example, which is discussed in detail within the given topic.
13. Project development and presentation - while working on the project, the student uses the acquired knowledge and skills to solve a real problem. Project-based teaching increases students' motivation and responsibility. Project work includes stages of planning, research, practical activity and presentation of results in accordance with the chosen issue. The project will be considered implemented, if its results are presented visibly and convincingly, in a correct form. It can be performed individually, in pairs or in groups; Also, within one subject or several subjects (integration of subjects); After completion, the project can 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 - 41-50 assessment points, which means that the student needs more work to pass and is allowed to take the additional exam once with independent work;
- **(F)** - Failed - 40 evaluation points and less, which means that the work done by the student is not enough and he/she has to study the subject again.

In case of acceptance of FX in the component of the educational programme, GTU will schedule an additional exam at least 5 days after the announcement of the results of the final exam.

Fields of Employment

- Mountain sustainable development projects of the Ministry of Regional Development and Infrastructure of Georgia;
- Ministry of Environment Protection and Agriculture of Georgia;
- International and local programs for sustainable development of mountain villages;
- Mountain sectoral farming unions and cooperatives;
- Greenhouses;
- International and local environmental organizations;
- Regional service centers of Ltd "Mekanizatori ";
- Local and international food and food safety organizations;
- The relevant service area of the trade network (agrarian markets, super and hypermarkets);
- Agricultural products processing enterprises and companies;
- Agro-production arrangement services;
- Governmental and non-governmental organizations of agrarian profile;
- State/private research, consulting and service centers;
- Sectoral, state/private and non-governmental organizations of mountain sustainable development;
- Highland regional agro-tourism organizations;
- Forest farms, nature reserves and national parks;
- Local and international organizations working on rural social issues;
- Organizations working on problems of mountain natural resources;
- Local or international organizations working on sustainable protection of mountain natural disasters and environment.

Opportunities for continuing education

Master's degree educational programs

Human and material resources needed to implement the program

The program is provided with appropriate human and material resources. The academic staff of the university, as well as visiting specialists with appropriate competencies, lead the educational components provided by the educational program. For more information on human resources, see the attached documentation.

Number of attached syllabi: 71