School of Engineering

Programme Title:

Construction Engineering

Qualification Awarded:

Bachelor's in Construction Engineering

Programme Credits:

240 ECTS credits

Language of Instruction:

Georgian

Objectives of the Programme:

Goals of the programme are: to prepare qualified specialist in the field of construction; to provide students with the broad theoretical knowledge in the field and help them develop practical skills; teach the students construction engineering design calculations and the basic methods and mechanisms for constructing industrial and civil facilities; to provide graduates with the knowledge and skills that make them competitive in the labour market.

Career Options:

Upon completion of the programme graduates will have wide range of opportunities to get employed in construction companies, in organizations providing design and construction expertise.

Admission Prerequisites:

Admission to the programme is carried out in accordance with the Law of Georgia on Higher Education and in accordance with the provisions of the unified national examinations approved by Order N19/N of 18 February 2011.

To facilitate the mobility of high school graduates and prospective students, it is permissible to enrol in an educational programme without passing unified national examinations, in accordance with the rules and terms defined by the Ministry of Education and Science of Georgia, for those that are:

- foreign citizens or persons without citizenship, who received complete general education or its equivalent abroad;
- Georgian citizens who received complete general education abroad or its equivalent and during the last two years of complete general education had been studying abroad;
- foreign citizens, who have studied/ are studying and have received credits/qualifications abroad from a Higher Educational Institution recognized by the legislation of that country;

- Georgian citizens, who, for the term defined by the Ministry of Education and Science of Georgia, lived/are living, studied/are studying and have received credits/qualifications abroad from a Higher Educational Institution recognized by the legislation of that country.

Enrolment in educational programs is also possible through mobility, in accordance with the Rule of Transfer Between High Educational Institutions defined by the by Order N10/N of February 4, 2010 by the Minister of Education and Science of Georgia.

Learning Outcomes (Competences)

After completing the Bachelor's Degree in Construction Engineering, graduates will own general and specific competencies listed below:

General Competences:

Graduates will be able to:

- analyse and critically evaluate ideas, discuss and debate;
- write and communicate in a native language professionally;
- write and communicate in a foreign language (English);
- adapt in unfamiliar and changing environment;
- participate in a team-work;
- use modern information and communication technologies;
- plan and conduct research; make conclusions based on analyses of results;
- work with the scientific literature; structure the publication and present to public;
- appreciate differences and cultural diversity.

Specific Competences:

The graduate will have knowledge of:

- types of ground and their mechanical properties;
- types of foundation and their use;
- reading of topographic maps;
- properties of reinforced concrete and technology of its use;
- profile elements of metal and their mechanical properties.

The graduate will be able to:

- use nivelier and theodolite;
- create design drawings;
- select heating and ventilation equipment to be installed in the building;
- select proper construction machines on the construction site.

Competences developed in the Program are evaluated in accordance with the six criteria for the first level of Higher Education set by the National Qualification Framework:

Knowledge And Understanding:

Graduates will have knowledge of:

- basics of Natural and Exact Sciences;
- types of building materials and their properties;
- stem systems calculation methods in both statistic and dynamic loads;
- basics of calculations of reinforced concrete structures;
- basics of calculations of metal and wood constructions;
- principles of construction machine functions;
- construction technology.

Applying Knowledge to Practice:

Graduates will be able to:

- construct the foundation of the building based on engineering-geological survey results;
- read construction drawings;
- test the samples on stretching, compressing, cutting, twisting, bending, resisting;
- calculate stem systems (beam, arch, roof, frame) on static and dynamic loads;
- select reinforcement cross sections in reinforced concrete constructions;
- select metal profiles;
- monitor the construction site;
- design water supply and sewerage networks in the building;
- select equipment for creating microclimate in the buildings;
- provide security measures in the buildings.

Ability to Make Conclusion:

Graduates will be able to:

- make reasonable conclusion during the expertise examination of the construction;
- analyse the situation and make correct conclusion in case of any problem;
- make adequate conclusion about the foundation type and size;

- define alternative ways during both designing and the implementation process of the project; justify and defence own conclusions;
- write down acts of hidden works and make conclusions on the performed work.

Communication Skills:

Graduates will be able to:

- present own ideas in front of professional audience;
- work in teams;
- participate in discussions and debates around the profession related topics.

Ability to Learn:

Graduates will be able to:

- plan and direct the study process;
- effectively manage time and study resources;
- define tasks and methods of the field; find modern scientific literature, fundamentally analyse it and deepen knowledge with the new information.

Values:

Graduates will be able to:

- acknowledge importance of the specialization;
- understand the importance of each step in project design and construction process;
- become aware of modern intensive technologies in construction.

Learning and Teaching Methods

In order to achieve learning outcomes, the purpose of each study course is to determine the appropriate learning and teaching methods. In the frame of the program, the following methods are used: the verbal method, discussions / debates, demonstration method, team work, case-studies, brainstorming, inductive method, deductive method, role and situational games, practical and laboratory studies and analysis.

Within the framework of academic freedom, the lecturer is entitled to specify and use methods that are not included in the program and/or not use any of the learning and teaching methods from the program, based on the course content.

The following evaluating tools are used in order to measure the learning outcomes: homework assignments, tests, practical exams, presentation of completed works, reports, projects and other tools. According to the training courses, teaching methods are written in syllabus.

Knowledge Assessment System

Student's knowledge is assessed by a score system out of 100 points. The assessment is multicomponent and meets the rules of calculating higher educational program credits, approved by the Order N3 issued on 5 January 2007 by the Minister of Education and Science of Georgia.

During the assessment of student's knowledge, all the academic staff and any invited personnel are obliged to use the above-mentioned rule. Following scheme is used to assess the knowledge:

1. **Five types of positive assessment:**
   (A) Excellent – score between 91-100;
   (B) Very good – score between 81-90;
   (C) Good – score between 71-80;
   (D) Satisfying – score between 61-70;
   (E) Sufficient – score between 51-60.
2. **Two types of negative assessment:**
   (FX) Fail to pass – score between 41-50, which means that the student needs to work more and he or she is able to redeliver exam after the independent preparation;
   (F) Fail – score 40 and below, which means that work done by students is not sufficient and he or she must study the course again.

During the assessment of study outcomes forming and summary assessment forms are used. These include, but are not limited to: homework tasks, laboratory work, tests, oral and written exams, presentations, essays, projects.

Study plan (Curriculum)

Curriculum and semester plan are available. The description of the study components is described in the syllabi.

Human and Material resources

Agricultural University of Georgia employs outstanding academic and invited personnel with successful experience (see annex) for its educational programmes.

Educational programmes are financially and materially supported. For implementation of the programmes university allocates relevant financial resources. Programmes are also supported materially. Educational programmes are taught at Kakha Bendukidze University Campus, which is equipped with all the necessary inventory and other resources needed for high quality education.