



School of Engineering

Programme Title

Mechanical Engineering and Technology

Qualification Awarded

Bachelor's in Mechanical Engineering and Technology

Programme Credits

240 ECTS

Language of Instruction

Georgian

Objectives of the programme

Objective of the programme is to provide graduate:

- with broad knowledge in mechanical engineering and technology, particularly in the technology of machine manufacturing, mechanics of machines, technological machines and automated complexes, building and producing autos and tractors;
- with the engineering skills, that will help graduate to solve the tasks and problems in the field of engineering;
- with the knowledge and skills, which will make the graduate competitive in the labor market.

Career Options

Upon completion of the programme graduate will have the opportunity to get employed in the machine industry; also in any organization using automated electro-mechanical lines and equipments.

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 programmes 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

General Competences:

The graduate 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 to unfamiliar and changing environment;
- participate in a team-work;
- use modern information and communication technologies;
- plan and conduct research and make conclusions based on analyses of results;
- process scientific literature, structure the publication and present to public;
- appreciate differences and cultural diversity.

Specific Competences:

The graduate will have knowledge of:

- basics of mechanisms and machines design;
- profile elements of the steel and their mechanical characteristics;
- basics of thermodynamics and heat transfer;
- basics of liquid mechanics.

Will be able to:

- use measurement tools and evaluate measurement errors;
- design mechanisms and cars;
- create construction drawings for machine manufacturing;
- design hydraulics of machines;
- design automated control systems.

Knowledge and Understanding:

The graduate will have knowledge of:

- technology of machine manufacturing;



- principles of efficient use of machines and devices;
- mechanical engineering technologies and their characteristics;
- research methods of kinematic analysis of mechanisms and machines;
- classification and calculation methods of machine parts;
- automation systems and their elements;
- automatic control theory;
- mathematical and computer modelling (simulations).

Applying Knowledge to Practice:

The graduate will be able to:

- determine the resources needed for mechanical engineering projects;
- implement practically engineering projects;
- design, create, update and exploit machines and devices;
- participate in engineering system design process.

Ability to Make Conclusion:

The graduate will be able to:

- collect and interpret data related to the mechanical engineering and technology, mechanics, technological machines and automated complexes, construction and production of mechatronics, autos and tractors;
- analyse abstract data and situations;
- analyse critically, justify decisions and conclusions;
- make problem oriented decisions.

Communication Skills:

The graduate will be able to:

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

Ability to Learn:

The graduate 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:

The graduate will:

- acknowledge importance of the specialization;



- acknowledge role of mechanical engineering in the development of other fields;
- understand production with the new technologies in machine industry.

Learning and Teaching Methods

In order to achieve the learning outcomes, the purpose of each study course is to determine the appropriate learning and teaching methods. In general, within the bachelor's study programmes, following methods are used:

- verbal method;
- discussions / debates;
- demonstration method;
- team-work;
- case studies;
- brain storming;
- induction method;
- deduction method;
- role and situational games;
- practical and laboratory studies;
- analysis.

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

For measuring learning outcomes different assessment methods are used, such as: homework, tests, practical exam, presentations, analyzes of work, project etc. According to the programmes teaching methods are included in syllabus.

Students 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)

Components:

	ECTS
University general education	50
Programme general education	43
Core education	129
Practical education	8
Elective subjects	10
ECTS total	240

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.

