



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution № 733 of the
Academic Council of GTU
dated July 6, 2012

Amended by
Resolution № 01-05-04/76 of the
Academic Council of GTU dated
June 22, 2022

Master's Educational Program

Program Title

ნავთობისა და გაზის ტექნოლოგიები

Oil and Gas Technology

Faculty

სამთო-გეოლოგიური

Mining and Geology Faculty

Program Head/Heads

Associate Professor Natela MAISURADZE

Qualification to be Awarded

Master of Oil and Gas Technology

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, who is enrolled based on the results of the master's exams (general master's exam and exam/exams determined by GTU), has the right to study in the master's program. Exam questions/tests will be posted on the website of the Teaching Department of GTU.

At least one month before the start of the exams, those wishing to enroll in the program must present a relevant certificate confirming knowledge of a foreign language (English, German, French, Russian) at least at the B2 level or must pass an exam at the GTU exam center. Enrolment in the program without passing the master's exams is possible according to the rules established by the Ministry of Education, Science, Culture and Sports of Georgia.

Program Description

The program is compiled by the European Credit Transfer and Accumulation System (ECTS). At the Georgian Technical University, 1 ECTS credit is equal to 25 hours, which includes both contact and independent work hours. The distribution of credits (ECTS) according to subjects is presented in the curriculum.

The duration of the program is 2 years

The program includes teaching and research components.

Educational component (study courses): compulsory – 64 ECTS. Elective- 21 ECTS. Research component - 35 ECTS.

Academic year schedule:

The academic year consists of two semesters, fall and spring. In each semester, the educational process will be conducted according to the order of the rector "On the academic schedule of the semester".

Program Objective

- To provide students with deep and systematic knowledge of oil and gas technologies in the search for natural hydrocarbon deposits - in the direction of exploration, well drilling and deposit processing.
- To develop the ability to plan and implement oil and gas field prospecting, rational field processing measures, analytical and experimental studies.
- Develop the ability to find original ways to solve problems in oil and gas technologies using the latest methods and approaches.

Learning Outcomes/Competences (general and professional)

Determines the lithological-stratigraphic complexes favorable for oil and gas accumulations, the length and direction of the horizontal well, the objects of facies and formation analyzes on the shelf;

Discusses modern models of sedimentary basins, stages of assessment of oil and gas accumulation zones, new technical means of drilling deep wells, filtration parameters of fissure collectors, main issues of international business;

Describes the technology of drilling wells using modern methods, the principles of separation of formations and facies, the structure of the shelf region of the earth's crust, the peculiarities of the processing of fissure-type deposits, the methods of controlling the processing of oil and gas deposits, the methods of increasing the oil production of the layer, the rules of operation of horizontal wells;

According to geological and geophysical data, it predicts the existence of natural hydrocarbon deposits, the results of using methods to increase oil production;

Uses the methods of assessing the prospects of oil and gas-containing objects, the methods of mathematical statistics, the methods of solving problems of field processing;

Calculates individual technological processes of drilling wells, characteristics of the productive layer, technological parameters of horizontal wells;

Determines the regularities of detection of oil and gas deposits, the quality of anchor column cements, the plan of well repair works;

Justifies the technical condition of the wells, the expediency of using methods of geological, geophysical, geochemical research and impact on the oil and gas layer;

Shares the norms established in the field and approved by the state, formulates own opinion and proposals, both orally and in writing.

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 the program of a specific training course, the following activities of teaching-learning methods are used, which are reflected in the programs (syllabi) of the relevant training course: verbal or oral, discussion/debate, deduction, group (collaborative) work, problem-based learning, analysis, demonstration, explanation, written work, action-oriented learning, project development and presentation.

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.

In case of receiving FX, an additional exam is prescribed, not less than 5 days after the announcement of the results. The mark obtained in the additional exam is not added to the mark obtained in the final mark.

Fields of employment

State Oil and Gas Agency, Oil and Gas Corporation of Georgia, oil and gas extraction companies, "Sokargaz" LLC, "Tbilisi-Energy" LLC, oil and gas transportation company, educational institutions.

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: 22