



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Amended by
Resolution № 01-05-04/07 of
the Academic Council of GTU
dated February 6, 2023

Master's Educational Program

Program Title

ნავთობისა და გაზის ტექნოლოგიები

Oil and Gas Technologies

Faculty

სამთო - გეოლოგიური

Mining and Geology

Program Head/Heads

Professor Teimuraz BARABADZE

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

Russian

Prerequisite for Admission to the Program

A person who holds a bachelor's degree or an equivalent academic degree in the field of engineering, production and construction, as well as in the field of natural sciences, mathematics and statistics (geology, geophysics, chemistry) is eligible to study in the master's educational program.

Applicants will be admitted on the basis of the results of the Master's examinations (General Master's Examination and examination/s as determined by GTU).

Examination questions/tests will be posted on the website of the Department of Education of GTU at least one month before the examinations.

Those wishing to enroll in the program must present a relevant certificate confirming knowledge of a foreign language (English, German, French) at least B2 level or must pass an exam at the GTU examination center.

Enrollment in the program without passing the master's exams is possible according to the rules established by the legislation of Georgia.

When teaching on a Russian-language master's educational program, it is necessary for the applicant to possess the Russian language at least at the appropriate level of the B2 level (see the European Linguistic Portfolio).

In order to check the level of language knowledge, the applicant must present a certificate of level II of the international certificate TORFL (The Test of Russian as a Foreign Language) (corresponding to level B2 of the ALTE European system of testing), as proof of knowledge of the language of instruction. Such an applicant is exempt from the language of instruction test.

In the absence of a similar certificate or other relevant document, the applicant is obliged to undergo a test in order to reveal the actual competence of the language in which the teaching is carried out in the educational program chosen by him.

Program Description

The program is compiled by the European Credit Transfer and Accumulation System (ECTS). At the Technical University of Georgia, 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 – 71 ECTS. Optional - 19 ECTS.

Research component - 30 ECTS.

Academic year schedule:

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

Program Objective

- To provide students with deep, systematic knowledge in the field of exploitation, transportation and storage of hydrocarbon raw materials, with critical analysis of modern achievements, evaluation and formation of conclusions;
- To acquire skills of independent research, design and industrial-technological work in exploration and processing of oil and gas deposits, drilling of wells, transportation and storage of hydrocarbons;
- To develop the necessary professional competencies for successful work in the field of oil and gas.

Learning Outcomes/Competences (general and professional)

Describes the principles and technologies of oil and gas production, methods of drilling oil and gas wells, transportation of oil, oil products and gases, development of hydrocarbon deposits and project management in the oil and gas complex, traditional and modern methods of warnings and liquidations of complications and accidents;

Discusses global and regional ecological-geodynamic problems in the oil and gas field, the main complex of coring, methods of increasing oil supply and eliminating accidents, modern drilling and technological equipment for the production of drilling technological fluids;

Determines the hierarchy of onshore and shelf hydrocarbon resource forecasting, prospecting and prospecting, patterns of formation and zoning of groundwater in oil and gas basins, basic principles of economics and management, types of tectonic deformations, indicators of well development, parameters of drilling solutions and complications related to the operation of a drill string, environmental protection measures during utilization, transportation and storage of oil products;

Chooses effective methods of controlling the development of natural and man-made geodeformation processes on land and on the shelf, rational methods of oil and gas search and exploration, ways of solving complex problems related to optimal production planning, organization and management activities, basic technical and economic indicators of well drilling and equipment for the elimination of complications;

Evaluates the results of the use of specific technologies of geophysical control in the drilling of oil and gas wells, the need for materials for drilling wells, the prospects and possibilities of using technical progress in the case of warnings and liquidation of complications and accidents;

Establishes operational plans related to research, development, design, construction, sale and management of technological processes and productions in the field of exploitation, transportation and storage of hydrocarbons, hydrogeological maps and productive layer profiles;

Documents the most efficient technology of prospecting, exploration, drilling of oil and gas wells, development of oil and gas reservoirs, and optimal methods of transportation and storage of hydrocarbons, the mechanism of oil delivery in fractured reservoirs;

Interprets the materials of hydrogeological sampling of geological trenches and wells, develops measures aimed at increasing the efficiency of drilling rigs in order to eliminate complications and accidents, collects, processes, analyzes and systematizes information on research topics;

Summarizes the results of geological-geophysical and hydrodynamic research of wells, temperature and pressure measurements of the layer, the current economic and administrative situation in the oil and gas sector;

Demonstrates readiness for production-technological, organizational-management and project activities, ethical norms of oral and written business communication and values of intercultural language competences to solve the tasks related to the development of innovative methods of research work, with drilling of oil and gas wells, processing and exploitation of hydrocarbon deposits, their transportation and storage.

Methods of achieving learning outcomes (teaching-learning)

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

also:
discussion/debate,
demonstration,
analysis,
synthesis,
induction,
deduction
inquiry-based learning,
case analysis,
brain storming,
verbal or oral,
written work,
explanation,
action-oriented learning,
projects 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 grade obtained in the additional exam is not added to the grade obtained in the final assessment.

Fields of Employment

State and private mining and geological enterprises, oil and gas corporations, oil and gas exploration, extraction, transportation and storage companies, national oil and gas agencies.

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