საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Academic Board of GTU
2012.06.07
Order № 733

Modified by
Academic Board of GTU
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Resolution # 01-05-04/95

Master's Educational Program

Name of the program

Oil and Gas Technology

Faculty

Mining and Geology Faculty

Program Supervisor

Associate Professor Valeri Khitarishvili

Qualification to award

Master of Mining and Geoenginering in specialization of Oil and Gas Extraction, Transportation and Storing Technics and Technologies
In case of implementation of no less than 120 credits of the educational program

The language of teaching

Georgian

Precondition for admission to the program

The master of mathematics has the right to have at least a bachelor or equivalent degree with a person who is enrolled on the basis of the results of the Master's Exams (Exams / Tests defined by Graduate Examination and GT). Examination issues / tests will be posted at the GT Teaching Department ,website at http://www.gtu.ge/study/index.php at least one month before exams. Enrollment on the program without the passing of the tests will be possible by the rule established by the Ministry of Education and Science of Georgia.

Description of the program

The program is drawn up by ECTS system, 1 credit is equal to 25 hours, which involves contact and independent work hours. Distribution of credits in the training plan. The program lasts 2 years (4 semesters) and includes 120 credits. The study component is 75 credits and research component is -45 credits. Research component plan Master's Research Project / Prospectus - 5 credits, theoretical experimental research / colloquium - 10 credits, master's thesis - 30 credits.

Each year's educational process is a two-semester of 40 weeks (20 weeks in the first semester, 20 weeks in the second semester) and is as follows: 15 Weeks Training Plan, one week - VIII Week, for the mid-semester assessment. Overall is 16 weeks (I-XVI weeks). XVII weeks documentary materials delivering final exams from XVIII to XX.
(The additional exam can be completed 5 days after concluding experience and only if the student has not got 51 points and the score is not completed, but at the same time it is necessary to have 41 points to get additional exams).
In the course of the semester, Master's study course passes one midterm exam (VIII week) - 30 points, one final exam (XVIII XIX weeks), which is estimated at 40 points. During the course of the course, lectures, seminars and practical courses are conducted within 30 weeks (15 weeks in each semester). Maximum score of 30 points per semester (30 points) The examination will be given to the Master's examination, which enables the student to score less than 30 points per weekly assessment and interim examination.

In the course of the first academic year, 60 credits are awarded to 40 credits, business communication in foreign languages - 5 credits, technical translation theory for foreigners - 5 credits, international business - 5 credits, and 5 other credits belong to research component (master research project / prospectus) .
10 credits, theoretical / experimental research / colloquy - 10 credits, and research team (completion and protection of master thesis) - 10 credits.

Elements of research components

The Master research project-prospectus is the result of research and analysis, preliminary draft of the Master's thesis, which will end in the second semester. Prospectus should have the actuality of the subject matter, the theoretical, practical value of the selected topic. The author should know what types of resources (literature, statistics) are based on and where to find this material.
Prospectus should include the results of the processing of appropriate literature and the necessary bibliography, as well as the history of the study. It should be briefly presented what is currently being done in this direction and what is currently being done (who works and what direction), the author should set up research questions and submit a work plan. Prospectus is evaluated by the head of the Master. Maximum score – 100.
In case of positive assessment of the prospectus (51 and more points), the graduate student continues to study. In case of negative assessment of the prospectus (less than 51 points), the master will repeat the work in accordance with the existing rule.

In the theoretical-experimental research / colloquium, the Master torter begins to work from the second year of study, which in the third semester implies the presentation and presentation of the work with the topic of partially master's thesis. The semester's course in the course of the semester-driver will be given the opportunity to learn the specific question of the subject and the results. Main streaming-experimental / cosmochemical systematization, reconstitution / presentation of the research, to the research of the subject of an independent inquiry, which is designed to work in the process of processing the workforce in the profession of professionalism. Theoretical-experimental study / coloccummistrant to produce the study before the trial (no later than 15 weeks). The study of the course of study of the colloquy of the study of the Course (no later than 15th week) will be conducted by the faculty of discipline, which will create the commission of the agreement from 5-9 persons. In order to be instructed by the management of the organization / organization of the academic staff. The commission work is the head of the company. Commissions do the job on the basis of the survey report (10-15 min). The Commission's Role-Rokogluums are based on 5 components. Assessment Maximum is 100 points. In the case of colloquy-in-the-boxes (51). In the case of negative assessment (less than 51 points), the master's degree will be recruited by the staff.

Graduate workshop

Qualitative workmanship is the prerequisite. Completion of the qualification-efficiency of the graduates to the student's independent research work experience. Including theoretical / experimental examination results.

To submit the completed qualification paper, the public defender of Procedures is assigned to the Universitas

Academic Board approved: "Regulation of Technical University of Georgia" (No. 704 of June 26, 2012). Qualifying assessment will be evaluated with a rating) with 100 points. Required of the animal protection. The qualification certificate is evaluated by 5-7 members. Master's degree assessment; It is determined by a member of the Commission, with a medium-sized mathematical account, which is called a qualification certificate, with a minimum of 20. Equal distribution of voting; In the case of the decision of the Commission the Chairman of the Commission. Examination basis on the examination of the Commission.

The purpose of the program

The program aims to exploit the use of oil and gas fields, exploration, oil and gas deposits technology, oil and gas deposits technology, oil gases and oil consumption of oil and gas fields, oil, gas and solid minerals, mathematical statistical methods of processing of production outputs, study processes and optimization methods.

Learning Outcomes and Competences (General and Sectoral)

Knowledge and understanding

- Wide theoretical knowledge of oil and gas technology;
- Knowledge of principles, values and values of oil and gas technologies;
- Critical assessment of current achievements and innovations of oil and gas technologies;
- Understanding the relationship between the main areas of oil and gas technology;
- Knowledge of the terminology of oil and gas technologies;
- Deep and systemic knowledge in the field of oil and gas technologies that gives the possibility of developing new, original ideas to understand solutions to solving individual problems;

Ability to use knowledge in practice

• Argumented discussion of the theoretical provisions and principles of oil and gas technologies;
• Analytical research and efficient technological solutions for oil and gas technology problems, use of quantitative-statistical methods in the method of technical and economic assessment methods;
• Finding, processing and interpreting new technical and technological information of oil and gas technologies;
• Evaluation of modern trends of oil and gas technologies, compounding and synthesis of received results, generalized conclusions and prediction;
• Collect, analyze and evaluate actual geological geophysical materials.
• Use of new technologies and innovative technologies for drilling.
• Selection of works for oil and gas deposits design, optimal mode of exploitation of oil wells, oil gases and oil gases.
• In new, unpredictable and multidisciplinary environment, search for new, original ways of solving complex pro-blames, including implementation of research using the latest methods and approaches;

Making judgments

• Analysis of new and inferred data and / or situations for solving the problems of oil and gas technologies and establishing grounded conclusions on them;
• Issue of conclusions and recommendations on dynamic-qualitative indicators of machinery;
• Conclusion on the basis of technical and economic analysis of machine-tools;
• Conclusion and recommendation on the safety of technological and efficient works;
• Analysis and evaluation of extracted geological, geochemical and geophysical materials.
• Establishing grounded conclusions based on critical analysis of complex and incomplete information (including recent research);
• Ability to show participation, initiative and reasoned conclusions in developing team decisions;
• Establishing grounded conclusions based on innovative synthesis and critical analysis of complex and incomplete information based on nearest data;
• Ability to show participation, initiative and reasoned conclusions in team workouts.

Communication skill

• Ability to present its conclusions, argumentative judgments, research methods and the results obtained in a comprehensive and understandable manner in academic and professional societies in Georgian and foreign languages;
• Protection of academic honest standards in researching and publicizing their results;
• Presenting the results of research, methods and field problems for academic and professional public utilization using modern information communication technologies.

Ability to learn
• Handle the learning process independently, learn the peculiarities of the learning process and high level of strategic planning;
• Identify your own learning skills to enrich your knowledge and experience.

Values

• Defending the norms of values, ethics and morals and assessing the attitudes of others and their dependence on professional pursuits, contributing to new values.

Methods of achieving learning outcomes (teaching and learning)

☒ Lecture ☒ Seminar (work in group) ☒ Practical ☒ Laboratory ☐ practice ☒ Course paper / project ☒

Master's paper ☒ Consultation☒ Independent work

Based on the specific course of study in the learning process, the relevant below listed activities of the teaching-learning methods are used, which are reflected in the relevant training courses (syllabus):
(Discussion, debate, presentation, group work, etc.)

1. **Discussion / debate** are one of the most common activities of interactive teaching. Discussion process increases the quality and activity of students' engagement. Discussion can be turned into arguments and this process is not limited to the questions asked by the teacher. It develops the ability of the student to reason and justify their opinion.
2. **Collaborative work** – By using this activity, teaching implies division of the students' group and assignment of teaching tasks to them. The group members individually work on the issue and in parallel share their opinions with other members of the group. Due to the set objective, it is possible to divide the functions among the members during the group's working process. This strategy provides all students maximum engagement in the learning process.
3. **Implication.** It is quite effective in terms of achieving the result. In many cases, it is better to provide the students with audio and visual materials simultaneously. The study material can be demonstrated by both the teacher and the student. This activity helps us to demonstrate different levels of learning material, to specify what students will have to do independently; at the same time, this strategy visually reflects the essence of the topic/ problem. Demonstration may be simple.
4. **Induction** is such a form of transmitting any knowledge when the process of thinking in the course of the study is directed towards generalization, in other words when delivering the material the process is going from concrete to general.
5. **Deduction** is such a form of transmitting any knowledge, which based on general knowledge represents logical process of discovering new knowledge in other words, the process is going from general to concrete.
6. **Analysis** helps us to divide the study material into constituent parts. This will simplify the detailed coverage of individual issues within a difficult problem.
7. **The synthesis implies** the composition of one whole by grouping individual issues. This activity contributes to the development of the problem to be seen as a whole.
8. **Verbal or orally transmitted.** Narration, talking and so forth belong to this activity. In this

process the teacher orally transmittes and explaines study material and the students actively perceive and learn it through listening, remembering and thinking.
9. **Explanation** is based on the discussion on the issue. The teacher gives a concrete example from the material, which is discussed in detail within the given topic.
10. **Action-oriented training** requires active involvement of the teacher and student in the teaching process, where the practical interpretation of theoretical material is of special significance.

Student knowledge assessment system

Grading system is based on a 100-point scale.

Positive grades:

- **(A)** - Excellent - the rating of 91-100 points;
- **(B)** – Very good - - the rating of 81-90 points
- **(C)** - Good - the rating of 71-80 points
- **(D)** - Satisfactory - the rating of 61-70 points
- **(E)** - Enough - the rating of 51-60 points

Negative grades:

- **(FX)** - Did not pass - 41-50 points of rating, which means that the student needs more work to pass and is given the right to take the exam once more with independent work;
- **(F)** – Failed - 40 points and less, which means that the work carried out by the student is not enough and he/she has to learn the subject from the beginning.

Field of employment

Oil and Gas Corporation of Georgia, Oil Products Companies in Georgia, "SOCCARE" LTD, "KazTransGaz Ltd", Itera-Georgia Ltd, Oil and Gas Transportation Company.

Opportunity to continue learning

Doctoral Educational Programs

Human and material resources necessary for the implementation of the program

The program is provided with appropriate human and material resources. For more information see attached syllables and attachments.

Number of attached syllables: 25

Program Study Load

№	Course Title	Precondition of admit	ECTS Credits			
			I Year		II Year	
			Semester			
			I	II	III	IV
1	1. Business communication (English)	Does not have	5			
	2. Business communication (Franch)					
	3. Business communication (German)					
	4. Business communication (Russian)					
2	1. Theory and practice of technical translation (English)	Does not have		5		
	2. Theory and practice of technical translation (Franch)					
	3. Theory and practice of technical translation (German)					

	4. Theory and practice of technical translation (Russian)					
3	International business	Does not have	5			
4	Modern methods of well drilling	Does not have	7			
5	Opening and Development of Oil and Gas Containing	Does not have	6			
6	Lithofacies and formation analysis in the search and exploration of oil and gas accumulations	Does not have	7			
7	Optional:					
7.1	Technology process desigh of well	Does not have		5		
7.2	Flushing-out of Well	Does not have				
7.3	Well drilling problems and struggle of them	Does not have				
7.4	Drilling of deflected well	Does not have				
8	Optional:					
8.1	Development fractured oil reservoirs	Does not have		5		
8.2	Exploitation of horizontal wells	Does not have				
8.3	Modern methods of influencing the reservoir	Does not have				
9	Forecasting of oil and gas content of subsoil	Does not have		10		
10.	Optional:					
10.1	Well Cementing	Does not have			6	
10.2	Simulatin method of technological processes of well drilling	Designing technological processes in drilling				
11	Technologe of search and exploration of oil and gas on the shelf	Does not have			7	
12	Geophyzical studies during drilling and exploitation of ore	Does not have			7	
		Per semester	**30**	**25**	**20**	
		Total:		75		
	Research Component:					
	Master Research Project / Prospectus	does not have		**5**		
	Theoretical / experimental research / colloquium	Master Research Project / Prospectus			10	
	Accomplishment and Defense of Master's Thesis	All the necessary training and research components				30
		Total per semester:	**30**	**30**	**30**	**30**
		Total per year:	**60**		**60**	
		Total:	**120**			

Map of learning outcomes

№	Course Title	Knowledge and understanding	Ability to use knowledge in practice	Making judgments	communication skill	ability to learn	Values
1	Business communication (English)	×	×		×	×	×
2	Business communication (Franch)	×	×		×	×	×
3	Business communication (German)	×	×		×	×	×
4	Business communication (Russian)	×	×		×	×	×
5	Theory and practice of technical translation (English)	×	×	×	×		
6	Theory and practice of technical translation (Franch)	×	×	×	×		
7	Theory and practice of technical translation (German)	×	×		×	×	×
8	Theory and practice of technical translation (Russian)	×	×	×	×		
9	International business	×	×	×	×		
10	Modern methods of well drilling	×	×	×		×	
11	Opening and Development of Oil and Gas Containing	×	×	×			
12	Lithofacies and formation analysis in the search and exploration of oil and gas accumulations	×	×	×		×	
13	Technology process desigh of well	×	×	×		×	
14	Flushing-out of Well	×	×			×	
15	Well drilling problems and struggle of them	×	×	×		×	
16	Drilling of deflected well	×	×	×		×	
17	Development fractured oil reservoirs	×	×	×			
18	Exploitation of horizontal wells	×	×	×			
19	Modern methods of influencing the reservoir	×	×	×			
20	Forecasting of oil and gas content of subsoil	×	×	×		×	
21	Well Cementing	×	×			×	
22	Simulatin method of technological processes of well drilling	×	×	×		×	
23	Technologe of search and exploration of oil and gas on the shelf	×	×	×		×	
24	Geophyzical studies during drilling and exploitation of ore	×	×	×		×	
	Research Component:						
	Master Research Project / Prospectus						
	Theoretical / experimental research / colloquium						
	Accomplishment and Defense of Master's Thesis						

Program curriculum

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
1	LEH12412G1	Business communication (English)	5/125			45				2	2	76
2	LEH12212G1	Business communication (Franch)	5/125			45				2	2	76
3	LEH12612G1	Business communication (German)	5/125			45				2	2	76
4	LEH12812G1	Business communication (Russian)	5/125			45				2	2	76
5	LEH12512G1	Theory and practice of technical translation (English)	5/125	15		30				2	2	76
6	LEH12312G1	Theory and practice of technical translation (Franch)	5/125	15		30				2	2	76
7	LEH12712G1	Theory and practice of technical translation (German)	5/125	15		30				2	2	76
8	LEH12912G1	Theory and practice of technical translation (Russian)	5/125	15		30				2	2	76
9	INBUS 30203G2	International business	5/125	15	30					1	2	77
10	MAP51703G1	Modern methods of well drilling	7/175	30		30				1	1	113
11	MAP42303G2	Opening and Development of Oil and Gas Containing	6/150	30		30				1	1	98
12	MAP54003G1	Lithofacies and formation analysis in the search and exploration of oil and gas accumulations	7/175	15	45					1	1	1113
13	MAP51803G1	Technology process desigh of well	5/125	15		30				1	1	78
14	MAP51903G1	Flushing-out of Well	5/125	15		30				1	1	78
15	MAP52003G1	Well drilling problems and struggle of them	5/125	15		30				1	1	78
16	MAP52103G1	Drilling of deflected well	5/125	15		30				1	1	78
17	MAP42203G2	Development fractured oil reservoirs	5/125	15		30				1	1	78
18	MAP42103G2	Exploitation of horizontal wells	5/125	15		30				1	1	78
19	MAP42003G2	Modern methods of influencing the reservoir	5/125	15		30				1	1	78
20	MAP41803G2	Forecasting of oil and gas content of subsoil	10/250	30			45			1	1	173
21	MAP52203G1	Well Cementing	6/150	30		30				1	1	88
22	MAP52303G1	Simulatin method of technological processes of well drilling	6/150	30		30				1	1	88
23	MAP41903G2	Technologe of search and exploration of oil and gas on the	7/175	30			30			1	1	113

		shelf										
24	MAP56203G1	Geophyzical studies during drilling and exploitation of ore	7/175	30		30				1	1	113

Head of the Program Valeri Khitarishvili

Faculty of Mining and Geology
Head of Quality Assurance Service Shalva Keleptrishvili

Dean of the Faculty Anzor Abshilava

Accepted at
Quality Assurance Service of GTU Irma Inashvili

Agreed with
Faculty of Mining and Geology
At the meeting of Faculty Board
(№ 3) 30.03.2018
Chairman of the Faculty Board Anzor Abshilava