Curriculum

Program	ORGANIZATION AND MANAGEMENT OF TRANSPORT PROCESSES
Degree awarded	Doctor of Philosophy in Transport Engineering
Faculty	Faculty of Technical Engineering
Program coordinator/coordinators	Teimuraz Kochadze, Professor
Length of the program (semester, ECTS)	Length of the program – 180 credits, including educational component – 60 credits, research component – 120 credits (six semesters).
Language of the Program	Georgian
Program development and renewal date of issue	2012/2017

Program prerequisites

Applicants wishing to be admitted to PhD program are required to meet the general university prerequisites for admission, as well as requirements of the Dissertation Council of the Akaki Tsereteli State University's Fculty of Technical Engineering. They are also requred to have Master's academic degree or the equivalent one-step education Diploma with qualifications allowing for effective functioning and managment of the Transport field; in special cases, the issue of admitting applicant to this program is solved by a Faculty's interim commission. Applicant is required to have computer skills, as well as having of good command of foreign language is required (English, German or French) at B2 level. The admission written examinations will be held in foreign language and special subject (Organization and Management of Transport Processes).

Aim of the Program

The program is aimed at: generating the creative (innovative0 intiatives for the Doctor's degree holders; creating creative ideas and hypotheses in the field of Transport and developing their analytical skills required for assessing and implementing these ideas, as well as at interpreting and realizing them;

training in modern methodsof teaching in the field of Transport through research, seminars and colloquiums. Doctor's degree holders are engaged in research investigations on the current sistuation in the market of transprt services, and factors influencing the effective implementation of transport processes.

Learning outcomes (General and branch competences) The qualification of Doctor's degree holder is defined in accordance with his/her general and field competences. He/she is a wide-profile specialist, who is equally well skilled at all aspects of Transport: technological, organizational-legal and economic ones; closely acquainted with global issues related to the interaction of Transport and ecological environment in terms of minimizing energy costs and pollutions caused by transport.	
Knowledge and understanding	Doctor's degree holder is expected to have in-depth and systemic knowledge of the Transport field in the following aras of the organization and management of the transport and logistics systems: modeling of the complex, multi-component intelligent-technical dynamic systems, and predicting the reliability of management; theory of traffic flows and traffic management; theory of vehicle acoustics; system analysis. Doctor's degree holder is also expected to be able to independently set the problem of the transport and logistics systems, select research method and analyze the results.
Applying knowledge	be knowledgeable of drafting the normative and legal documents required in his/her future professional activities; to carry out innovative rsearch using knowledge of studied courses and obtained information; to use modern resach methods and techniques in his/her own research, educational and business activities; to make extensive use of modern economic-mathematical models of management of the intelligent-technical systems and transport logistics in research works; to assess the process of perception of consumers of transpr services and analyze their preferences; to take part in the creation and introduction of new products of transpory services; to develop competitive strategies, which transport company needs for success in the market; to manage the departments of transport services, traffic safety and environmental monitoring at the enterprise (organization); creating original research works in the form of scientific publications in the peer-reviewed journal and doctoral dissertations covering the following topics: design of regional and transcontinental networks of multimodal transportations, logistics of vehicles service maintenance, addressing the

	problems of fuel efficiency and alternative field, current conditions in the market of transport services.
Making judgement	Doctor's degree holder is expected: to be able to develop methodology of the new approaches to controversial ideas arising in the process of management of a complex technical-intellectual system, as a supply chain, as well as to draw the right and effective conclusions independently as a result of the research process.
Communication skills	Doctor's degree holder is expected: to be able to engage in general conversation-dialogue; to comply with rules of speech etiquette; to read specialist literature without a dictionary for searching required information; to extract annotations, contents and make the business letters; to have ability to make presentations of acquired knowledge and research results to society in the effective and accessible form; to be able to present and protect research works to society; to pursue negotiations with business partners and ensure compliance under the concluded agreements.
Learning skills	Doctor's degree holder is expected: to improve independently the level of his/her own education based only on his/her own intellectual capacities and on the analysis of information accumulated in his/her thinking; to identify, investigate and address problems limiting the effectiveness of the Transport field
Values	Doctor's degree holder is expected: to know the fundamentals of the legal systems in the Transport fields and transport legislation, as well as legal and moral-ethical standards existing in the field of professional activities; to be able to teach disciplines related to the Transport field using modern teaching methods at all educational levels.

Teaching methods

Transfer of theoretical material, question-answer session, discussion, research team, debates, business-games, business simulations, group sessions, practical case studies and project development.

Structure of the Program

Doctoral program "Organization and management of Transport Processes" involves the following three areas:

- **Vehicles operation and traffic safety;**
- **Vehicles energy equipment and environmental problems;**

- **Multimodal transportations.**

In order to obtain the PhD degree, Doctoral student is required to collect 180 credits. The program integrates educational (60 credits) and research components (120 credits),

Educational component involves development of the main scientific skills, improving knowledge acquired in transport-related specialties, participation in a seminar, studying the modern teaching methods and involving Doctoral student in teaching process.

All transport-related training courses involved in educational component are elective. PhD students chooses the courses for personal reasons, in line with the topic of dissertation work.

Research component consists of: publication of scientific articles related to the dissertation topic and participation in the conferences; completion of PhD student's colloquiums; completion and defence of Doctoral thesis.

see Study Schedule in attachment
see attached document 1

Assessment System

The assessment of the academic performance of student during the semester is made on the basis of adding up the mid-term and final examination assessments. Maximum course assessment score is 100 points.

The assessment of the achieved level of academic performance of student in each component involves: mid-term assessment, examination – 30 points, mid-term assessment (assessment of student's planned activities) – 30 points and final assessment, examination – 40 points. Student has the right to take the final exam, if his/her minimum assessment score at mid-term examination is not less than 18 points (from the maximal 60 points). The minimum assessment score of student at Final Examination is 15 points (from maximal 40 points).

The students grading scheme includes,

five types of positive assessment:

(A) Excellent – 91-100 points.

(B) Very good – 81-90 points.

(C) Good – 71-80 points.

(D) Satisfactory – 61-70 points.

(E) Acceptable – 51-60 points.

two types of negative assessment:

(FX) Student could not pass examination – 41-50 point that means that she/he is required to work more for passing the exam, and that she/he is entitled to retake exam only once after individual work;

(F) failed to pass –40 points and lower that means that the work done by student is not sufficient and she/he has to redo the course.

Within the training component of educational program, in case of FX assessment, a makeup exam is appointed no later than 5 days since the announcement of the examination results. The number of points

received in a makeup examination is a final assessment score and is not added to the final assessment received by student, and it will be reflected in final assessment of the training component. With account for the assessment received in the educational component, in case of final assessment score 0-50 points, student is assessed at F-0 point.

Student's performance assessment and components and criteria for various courses are different, and particular assessment criteria see in a particular Syllabus.

The following assessment systems are used for the assessment of Doctoral student's dissertation paper:

    a) Excellent (summa cum laude) –with highest honor;

    b) Very good (magna cum laude) – with great honor;

    c) Good (cum laude) – with outstanding honor;

    d) Mean (bene) – meets all requirements;

    e) Satisfactory (rite) – meets requirements, despite some shortcomings;

    f) Unsatisfactory (insufficienter) – does not meet requirements because of substantial shortcomings;

    g) Far from satisfactory (sub omni canone) – failed outright.

Employment opportunities

The employment sphere of Doctor's degree holders in Transport Engineering is represented by commercial entities of different organizational-legal forms (private, state-owned and municipal enterprises, producers' cooperatives, logistic centers, etc.), as well as non-profit organizations and associations in need of professional knowledge in the field of transport services, traffic safety and environmental monitoring. They also can be employed in the any-level research and educational institutions to hold middle-to-senior positions as is envisaged by Georgian education legislation and the concept of reforming university-based education.

Supportive resources

The research component of PhD program will be implemented at the Transport Department of the faculty of Technical Engineering of Akaki Tsereteli State University, and in the service-ceters equipped with modern teqchnical means (with which the University has concluded the cooperation agreements), as well as through the libraries of ATSU, Georgian Academy of Sciences. The Faculty, where research has been designed, possesses computer classes provided with the Internet connection.

Distribution of competences in accordance with the Study Schedule

Competence	Educational component			Research component					
	Theories and models of the Transport field	Transport-technological systems and environment	Seminars						Preparation and publc defence of dissertation
1. Knowledge and understanding	X	X	X						
2. Applying knowledge			X						X
3. Making judgement			X						X
4. Communication skills									X
5. Learning skills	X	X	X						
6. Values			X						X

Akaki Tsereteli State University
Faculty of Technological Engineering
Doctoral Program
ORGANIZTION AND MANAGEMENT OF TRANSPORT PROCESSES
Study Schedule 2017-2020

No	Course title	Hours per week	Number of credits	Total	Class hours	Mid-term and final exams	Independent	Lect./practic./group/lab	I	II	III	IV	V	VI	VII	VIII	Precondition
					Number of hours							Semesters					
					Contact hours												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	**Theories and models of the Transport field**		10	250	60	3	187	60/0/0/0	10								
I.1	Theories and models of studying traffic flows and road traffic accidents **(Elective)**		10														
I.2	Theories and models of the operation of vehicles energy equipment **(Elective)**		10														
I.3	Models of the logistic systems of the Eurasian Transport Corridor **(Elective)**		10														
	Total							-									

№	Course																
2	**Transport-technological systems and environment**		15	375	90	9	276	90/0/0/0	5	10							
2.1	Modern methods of modeling of vehicles and predicting the relibility**(Elective)**		5														
2.2	Modern methods of studying acoustics of machines **(Elective)**		5														
2.3	Modern methods for design of regional and transcontinental networks of multimodal transportations **(Elective).**		5														
2.4	Transport Geo-Information Systems **(Elective).**		5														
2.5	Road networks and environmental impacts of traffic flows **(Elective).**		5														
2.6	Alternative fuels and their environmental efficiency **(Elective).**		5														
3	**Organizational and legal aspects of transport services**		15	375	90	9	276	90/0/0/0	5	10							
3.1	Logistics of vehicles service maintenance **(Elective).**		5														
3.2	Vehicles fuel efficiency and analysis of environmental problems **(Elective).**		5														
3.3	Segmentation of the market of transport services in terms of current market conditions **(Elective).**		5														
3.4	Logistical management **(Elective).**		5														
3.5	Organizational and legal coverage of transport logistics **(Elective).**		5														
4	**Program's compulsory courses**																
4.1	Modern teaching methods		5	125	30	3	87	15/15/0/0	5								

№	Name	Credits	Hours			Hours		Sem	Sem				Sem		
4.2	Educational practice	5	125			125			5						
4.3	Seminar 1	5	125			125		5							
4.4	Seminar 2	5	125			125			5						
	Educational component in all	**60**						**30**	**30**						
5.	**Research component**														
5.1	Preparation and defence of Doctoral dissertation	120											120		
	Research component in all	**120**											**120**		
	Doctoral program in all	**180**						**30**	**30**				**120**		

II Research component

№	Name of research component	Semesters
II 1	Publication of the results of research and participation in the conferences	III,IV,V
II 2	I colloquium of Doctoral student	III
II 3	II colloquium of Doctoral student	IV
II 4	III colloquium of Doctoral student	V
II 5	Completion and defense of Doctoral dissertation	III,IV,V,VI
Total research component – 120 credits		