**Curriculum**

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| --- | --- | --- | --- |
| **Program** | | Master program – **Transport Logistics Engineering** | |
| **Degree awarded** | | **Master of Science in Transport Logistics Engineering** | |
| **Faculty** | | **Faculty of Technical Engineering** | |
| **Program coordinator/coordinators** | | **Teimuraz Kochadze, Professor** | |
| **Length of the program (semester, ECTS)** | | **Length of the program:** 120 credits (4 semesters) | |
| **Language of the Program** | | | **Georgian** |
| **Program development and renewal date of issue** | | |  |
| **Program prerequisites** | | | |
| Document confirming the Bachelor’s degree and. for citizens of Georgia – certificate of confirmation of passing the unified national Master’s exams (or the equivalent document for foreign citizens, in the case of the appropriate inter-state agreement, authorizing the right to participate in the entrance examination for the chosen specialty at any authorized university in the appropriate accredited Master’s program. | | | |
| **Aim of the Program** | | | |
| The program is aimed mainly at training of such specialists for the field of transport in compliance with fundamental and professional requirements, who are expected to be able to carry out activity, in the field of transport, including research, project, production-technological, organizational-managerial and educational activities. The program provides basic training of specialist holding Master’s academic degree in Transport Logistics Engineering, whose professional activities are mainly aimed at ensuring safe and sustainable functioning of individual links in a single logistical supply chain in a particular business environment. | | | |
| **Learning outcomes (General and branch competences)**  Holder of Bachelor’s degree in Transport Engineering is expected: to be able to use professional knowledge for addressing problems arising at the medium and high levels of mnagement of the transport and logistics systems, to lead individual groups of people and assume his/her share of responsibility to perform effectively works to be done; to be able to plan and carry out experimental research activities in the field together with a group; to be able to describe monitoring conditions and draw up justified conclusion on the monitoring results in the process of modernizing and operating the transport and logistics centers; to develop the operative management methodology and program of the transport and logistics systems; to design the simulation and mathematical models of the transport systems and networks and provide technical justification of descisions made as a result of their use. | | | |
| **Knowledge and understanding** | Master’s degree holder is also expected: to be knowledgeable of the prediction methods of socio-economic and organizational processes occuring in the the transport and logistics systems as well as methods for assessing their condition, taking into account the potential of economic, social and organizational development of transport service market participants; to be able to carry out project activities in the professional sphere; to be knowledgeable of the principles of logistical management of a single supply chain, which are used by him/her for addressing problems arising the field of the organization and management of transportation; to be well aware of the principles of construction and management of the intelligent transport systems. | | |
| **Applying knowledge** | Master’s degree holder is also expected: to be able to provide scientific analysis of the processes and problems of the transport field, as well as to use methods of the studied sciences at different levels of professional activities, to achieve high quality and effectiveness of transport services; to be aware of the capacities of modern methods of scientific understanding of nature, and to know them at a level required by occupational functions to address problems of practical-scientific contents; to be able to design and use independently the models of describing and predicting different events occurring in the technical-intelligent systems, as well as to carry out their qualitative and quantitative analysis; to have skill of searching, gathering, systematizing and using required information; to be able to use in practice modern computer engineering and communication tools in the organization of works. | | |
| **Making judgement** | Master’s degree holder is also expected: to be able to find the ways for solving thoughtfully and quickly complex problems; to be able to draw up justified conclusions and address non-standard problems through the innovative synthesis, based on critical analysis of latest research, even in the case of incomplete information; to be able to develop the the options for management decisions, as well as to choose the best option following from criteria of socio-economic efficiency and environmental safety. | | |
| **Communication skills** | Master’s degree holder is also expected: to have a culture of analytical thinking, know its general laws, and be able to properly/logically formulate its results in writing and orally; to work constantly on adherence to common to all mankind principles and entrenching them in society; to be able to organize his/her work on on a scientific basis; to have to be able to use in his/her own professional activities computer-based methods of information gathering, storage and processing. | | |
| **Learning skills** | Master’s degree holder is also expected: to be ready methodologically and psychologically to implement the self-education process independently in the case of changing the type and nature of his/her own professional activities, and be ready for working on the new strategic projects; if desired, to continue education at the next level of higher education – on PhD program. | | |
| **Values** | Master’s degree holder is also expected to be aware of the essence of consciousness, its relation with irresponsibleness, the role of consciousness and self-consciousness in the behavior, human relation and activities; to provide continuously care of the formation of an active member of civil society. | | |
| **Teaching methods** | | | |
| Discussion/debates, collaborative work, teamwork, problem-based learning, heuristic approach, case studies, brainstorming, role and case plays, demonstrative method, induction and deduction methods, method of analysis and synthesis, verbal or oral method, writing method, laboratory method, practical methods, explanatory method, action-oriented teaching. | | | |
| **Structure of the Program** | | | |
| The program consists of two modules, each of which includes:  a) Module main courses – 52 credits;  b) General compulsory courses of both modules: 53 credits;  c) Elective courses for both modules – 15 (40) credits,  from which 10 credits are selected by Master student in the first semester and 5 credits – in the third semester.  **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. Student has the right to take the final exam, if his/her minimum assessment score at mid-term examination is 18 points.  The maximum score for final examination is 40 points. Student has the right to take the final exam, if his/her minimum assessment score at mid-term examination is 18 points. The minimum assessment score of student at Final Examination is 15 points.  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 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.**  Master’s thesis must be assessed on a one-off basis in the form of final assessment. | | | |
| **Employment opportunities** | | | |
| 1. Transport, shipping, freight forwarding and transport-logistics companies engaged in uni-, multi-, inter-modal and combined transportation of freight and passenger flows; 2. Vehicles authorized service and twenty-four-hour service centers, leasing, dealer and distribution companies; 3. Lubricants distribution companies, petrol stations; 4. Patrol Police and road traffic accidents expert offices; 5. Transport insurance companies; 6. Urban transport design and traffic organization divisions; 7. Service agencies of the Ministry of Internal Affairs; 8. Transport regulatory commissions; 9. Educational activities in transport-related educational programs. | | | |
| **Supportive resources** | | | |
| Material resources existing at the University, which are required for implementation of educational program are as follows:   1. A continuously updated book stock of the University’s scientific and technical library; 2. Auxiliary resource materials created by the University’s teaching staff; 3. Engineering (including transport) training laboratories; 4. Computer centers equipped with modern technologies; 5. Lecture and practical training rooms provided with equipment appropriate with modern multimedia training; 6. The opportunity of visiting, reviewing and analyzing the Internet websites for all interested students;   **Practical Training/Work Experience Internship:**  The bases of research (vocational) internships:   * TEGETA MOTORS Company (Kutaisi); * LLC SOFMAR (Poti) * LLC LOGISTEX (Poti); * LLC SOVTRANSAVTO (Poti); * Batumi and Poti seaports and terminals; * Kopitnari Airport; * DHL Company.   with which, thememorandums and agreements have been concluded. | | | |
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**Attachment 1**

**Akaki Tsereteli State University**

**Faculty of Technical Engineering**

**Master Program**

**Transport Logistics Engineering**

**Study Schedule 2017-2019**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| № | Course title | Hours per week | Number of credits | Number of hours | | | | Lect./practic./group/lab | Semesters | | | | | | | | Precondition |
|  | Total | Contact hours | | Independent | I | II | III | IV | V | VI | VII | VIII |
| Class hours | Mid-term and final exams |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1 | **Module 1. Supply chain management** | | | | | | | | | | | | | | | | |
| I.1 | Transport and logistics complexes -I |  | 7 | 175 | 75 | 2 | 98 | 30.45.0 | 5 |  |  |  |  |  |  |  |  |
| I.2 | Transport and logistics complexes -2 |  | 10 | 250 | 90 | 2 | 158 | 30.30.30 |  | 6 |  |  |  |  |  |  | 1.1 |
| I.3 | Transport service market |  | 5 | 125 | 45 | 2 | 78 | 30.15.0 | 3 |  |  |  |  |  |  |  |  |
| I.4 | Multimodal transportation |  | 10 | 250 | 90 | 2 | 158 | 30.30.30 |  |  | 6 |  |  |  |  |  | 1.2  3.3 |
| I.5 | Transport logistics -I |  | 5 | 125 | 45 | 2 | 78 | 15.15.15 |  | 3 |  |  |  |  |  |  | 1.2  1.3 |
| I.6 | Transport logistics 2 |  | 5 | 125 | 45 | 2 | 78 | 15.15.15 |  |  | 3 |  |  |  |  |  | 1.5 |
| I.7 | Outsourcing in the transport and logistical systems - I |  | 5 | 125 | 45 | 2 | 78 | 30.15.0 |  | 3 |  |  |  |  |  |  |  |
| I.8 | Outsourcing in the transport and logistical systems 2 |  | 5 | 125 | 45 | 2 | 78 | 30.15.0 |  |  | 3 |  |  |  |  |  |  |
|  | |  |  |  |  |  |  | **-** |  | | | | | | | |  |
| 2 | **Module 2. Intelligent transport systems in road traffic** | | | | | | | | | | | | | | | | |
| 2.1 | Waypoint navigation systems |  | 5 | 125 | 45 | 2 | 78 | 30.15.0 | 3 |  |  |  |  |  |  |  |  |
| 2.2 | Theory of traffic flow |  | 10 | 250 | 90 | 2 | 158 | 45.45.0 |  | 6 |  |  |  |  |  |  |  |
| 2.3 | Road traffic modeling |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 | 3 |  |  |  |  |  |  |  |  |
| 2.4 | Road conditions and safety of traffic |  | 10 | 250 | 90 | 2 | 158 | 45.45.0 |  |  | 6 |  |  |  |  |  |  |
| 2.5 | Automated management of traffic |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 |  | 3 |  |  |  |  |  |  |  |
| 2.6 | Integrated analysis of road traffic accidents |  | 10 | 250 | 90 | 2 | 158 | 60.30.0 |  |  | 6 |  |  |  |  |  |  |
| 2.7 | 1Information support for road traffic organization –1 |  | 3 | 75 | 30 | 2 | 43 | 0.15.15 | 2 |  |  |  |  |  |  |  |  |
| 2.8 | 1Information support for road traffic organization –2 |  | 4 | 100 | 45 | 2 | 53 | 30.15.0 |  | 3 |  |  |  |  |  |  |  |
| 3 | **Compulsory subjects for both modules** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3.1 | Educational psychology |  | 3 | 75 | 30 | 2 | 43 | 15.15.0 | 2 |  |  |  |  |  |  |  |  |
| 3.2 | Experimental design and analysis |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 |  | 3 |  |  |  |  |  |  |  |
| 3.3 | Methods of mathematical modeling in logistcs management |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 | 3 |  |  |  |  |  |  |  |  |
| 3.4 | Master’s thesis |  | 30 | 750 |  | 2 |  |  |  |  |  | 750 |  |  |  |  |  |
| 3.5 | Educational practice |  | 5 | 125 | 45 | 2 | 78 | 0.45.0 |  | 3 |  |  |  |  |  |  |  |
| 3.6 | Research (professional) practice |  | 5 | 125 | 45 | 2 | 78 | 0.45.0 |  |  | 3 |  |  |  |  |  |  |
| 4 | **Elective courses (10 credits are elected in I semester, and 5 credits – in III semester)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4.1 | Interaction of various types of vehicles |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 | 3 |  |  |  |  |  |  |  |  |
| 4.2 | Automated design systems |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 | 3 |  |  |  |  |  |  |  |  |
| 4.3 | Foreign language |  | 5 | 125 | 45 | 2 | 78 | 0.45.0 | 3 |  |  |  |  |  |  |  |  |
| 4.4 | World information resources |  | 5 | 125 | 45 | 2 | 78 | 15.0.30 | 3 |  |  |  |  |  |  |  |  |
| 4.5 | TRACECA and Euro-Asian transport systems |  | 5 | 125 | 45 | 2 | 78 | 30.15.0 | 3 |  |  |  |  |  |  |  |  |
| 4.6 | Transport and logistics management |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 |  |  | 3 |  |  |  |  |  |  |
| 4.7 | Vehicles diagnostics and service |  | 5 | 125 | 45 | 2 | 78 | 30.15.0 |  |  | 3 |  |  |  |  |  |  |
| 4.8 | Technical creativity and laws of the development of systems |  | 5 | 125 | 45 | 2 | 78 | 15.30.0 |  |  | 3 |  |  |  |  |  |  |
|  | **Total** |  | 120 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |