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# Transport Engineering Education of Bachelor and Master Levels in SUT

*Bogusław Lazarz, Aleksander Stadkowski*

## Introduction

The studies in the field of transport began at the Silesian University of Technology in 1969. Originally, they were carried out in Transport and Communication Unit of Mechanical and Power Engineering Faculty. In 1974 the Institute of Transport and Communication, operating as a faculty, was established. In 1984 the Institute of Transport was organized. In 1992 the University structure was reorganized which resulted in combining the Institute with the Faculty of Materials Science, Metallurgy, Transport and Management that was newly established in Katowice.

Due to the fast development of teaching and scientific base as well as enlarging number of teaching staff, on the 1st of September 2002 the Institute of Transport was turned into the Faculty of Transport following the resolution of the Senate.

Recently there was a considerable development of pedagogical, scientific base of faculty, and also increase in number of its personnel structure. It has allowed to expand a number of teaching disciplines at the faculty, and also to increase possibilities of the enrolment of students. Besides the basic faculty which is in Katowice, in 2000 its branch in Tychy was opened and in 2002 the faculty branch in Bytom started to function. In this time 25 postgraduate students work over the termination of their doctoral thesis. More than 6000 students have graduated from the Faculty so far.

Personnel structure of the Faculty is presented bellow.

- Professors	18
- Docents	1
- Doctors	54
- Other pedagogical employees	2
- Engineer and technical workers	5
- Administrative workers	18

Council of Faculty has the right of assignment of a scientific degree of PhD on a discipline „Construction and maintenance of machines”. The Faculty possesses Polish and foreign certificates for official certification tests of automotive vehicles adapted for gas fuels (LPG, CNG). The Faculty is also entitled to conduct certification tests of machines and vehicles being in operation in Polish railway transport.

## Education

During its 40 years long activity a model of education of a transport engineer has been elaborated and is constantly under modernization. This model meets restrictive requirements

which characterize modern transport professionals. The education at the Faculty of Transport is available by full-time and part-time courses.

Organization of full- time study is presented bellow.

- engineer study; I - VII semester,
- master study; VIII - X semester

These studies consist of two degrees. The first four semesters of the common plan of studies for the whole course and for both types of studies (I and II degree) shall comprise of non-technical subjects, basic subjects and technical course subjects. After having completed the fourth semester, the students are to choose their specialty.

Specialty to choose by students:

- Operating and Maintenance of Automotive Vehicles
- Technique and Management in Automotive Transport
- Operating and Maintenance of Rail Vehicles
- Mechanical Handling
- Logistic of Transport
- Traffic Engineering
- Air Navigation
- Informatics Systems of Transport

During the seventh semester students are to prepare an engineer diploma work.

The II degree studies are continued on three successive semesters (VIII-X). The schedule of the II degree studies includes non-technical subjects (foreign language), basic subjects (mathematics and physics), technical course subjects and specialty subjects. During the tenth semester students are preparing a master degree work and they participate simultaneously in seminar courses. After the ninth semester, a diploma practice lasting 4 weeks shall be applied.

Students of faculty take part in research works. For example, degree work of the graduate of the department of logistics and mechanical handling mgr Adam Furich has received concern FIAT award (fig. 1).

Study program is presented below:

1. Engineers subjects volume [hours]:

- General : 300,
- Basic : 570,
- Technical : 1245,
- Specialization: 480,

■ Total: 2595.

## 2. Masters subjects volume [hours]:

■ General: 90,

■ Technical: 225,

■ Specialization: 585,

■ Total: 900.



Fig. 1. The rector of the Silesian University of Technology prof. Andrzej Karbownik presents the award of concern FIAT to the graduate of the faculty mgr Adam Furich

Organization part-time study is the following:

- engineer study; I- VIII semester,
- master study; IX- XII semester.

Study program of part-time study is the same like on full-time study, but learning process is carried in 60% on the faculty and in 40% home by the students.

The registration of students' progress in learning is carried with the use of pointing system (ECSP - European Credit System Points).

Point-based system rules:

- basic rules are common for all stationary and non-stationary studies
- system ECTS (European Credit Transfer System) final point amount:

- for 1<sup>st</sup> level studies 210 ECTS (at least 26 per semester)
- for 2<sup>nd</sup> level studies 90 ECTS (at least 22 per semester)
- calculation period is equal to one semester
- prerequisites for registering at next calculation period:
  - at least 80% of required points gained during each of previous periods
  - finalizing all obligatory activities and other duties with no longer than 1 year delay

The education on the Faculty of Transport is available on Post-graduate studies

(2 semesters long). These are the following:

- Logistics of transport
- Computer aid design, manufacturing and exploration of vehicles
- Modern control systems of a railway traffic and certification of equipment
- Reconstruction of road accidents
- Quality management and environment on transport
- The organization of civil aviation in EU
- Techniques and organization of railway transport in EU
- The integrated system of safety on a railway transportation
- Safety of traffic
- Diagnostics of cars
- Technical expert appraisals of cars
- The integrated control systems on transport

### **International cooperation**

The faculty has signed contracts on the academic cooperation with a number of foreign universities:

1. Pryazovskyi State Technical University, Institute of Mechanics and Transport, Mariupol, Ukraine
2. Donetsk Institute of Automobile Transport, Ukraine
3. Technical University of Ostrava, Faculty of Mechanical Engineering, Czech Republic
4. University of Zagreb, Faculty of Transport and Traffic Sciences, Croatia
5. Riga Technical University, Latvia
6. East Ukrainian National University named after V. Dal, Lugansk, Ukraine
7. Petersburg State Transport University, Russian Federation

There is also an intensive exchange of students and teachers within the limits of the program LLP-Erasmus. The faculty has acted as the initiator of signing of contracts with following universities:

- Cologne University of Applied Sciences, Germany, Institute of Automotive Engineering;
- Czech Technical University in Prague, Faculty of Transportation Sciences;
- Vilnius College of Technologies and Design, Lithuania;
- Technical University of Kosice, Slovakia, Faculty of Mechanical Engineering;
- Ecole Supérieure d'Ingenieurs en Informatique et Genie des Telecommunications, Avon, France, Laboratoire Informatique Distributee et Temps Reel;
- Szegedi Tudományegyetem, Szeged, Hungary, Faculty of Engineering;
- Universidade da Beira Interior, Covilha, Portugal, Engineering Faculty;
- Karel de Grote-Hogeschool, Antwerpen, Belgium;
- Technological Education Institute, Piraeus, Greece, Tourism Management Department;
- Technical University of Ostrava, Czech Republic, Faculty of Mechanical Engineering.

Especially close and friendly relations connect Faculty of Transport with Vilnius College of Technologies and Design. Students of the College had possibility of education in Katowice. In 2008 visit of the teachers of this college to Poland has taken place. The professor Liudvikas Narkatis and mgr ing. Jolanta Turbiene made a series of lectures for the Polish students (fig. 2). Prof. Aleksander Sładkowski, dr. Grzegorz Sierpiński and mgr Aleksander Sobota in 2009 took part in the International Week in Vilnius College and made a series of lectures for the Lithuanian students.



Fig. 2. Visit of the teachers of Vilnius College of Technologies and Design to Poland within the limits of the program LLP-Erasmus



Fig. 3. The presentation of the prof. Aleksander Sładkowski in Vilnius College of Technologies and Design