VSB TECHNICAL UNIVERSITY OF OSTRAVA | FACULTY OF MECHANICAL ENGINEERING

Study programme Transport Systems

Generated: 6. 7. 2025

Faculty	Faculty of Mechanical Engineering
Type of study	Doctoral
Language of instruction	English
Code of the programme	P1041D040005
Title of the programme	Transport Systems
Regular period of the study	4 years
Cost	500 CZK per semester
Coordinating department	Institute of Transport
Coordinator	doc. Ing. Dušan Teichmann, Ph.D.
Key words	

About study programme

Doctoral study program Transport Systems educates graduates with a deep theoretical knowledge of technical and natural sciences, which are supplemented by specific practical skills received by solving real problems based on the current needs of rail, road and air transport systems.
Within the study, it is possible to carry out professional practice in companies engaged in the construction of vehicles or operation of transport systems, internships at foreign universities and scientific workplaces, where the student gains experience from scientific-research cooperation in international scientific teams.

Graduate's employment

The study program Transport Systems is built so that its graduates will be able to solve the scientific and technical problems of prevention in various areas of transport systems, especially, in the areas of technical solutions of means of transport and optimization of processes taking place in transport systems. Graduates can be employed primarily as researchers in the technical development departments of companies engaged in the production of vehicles or their components, applied research in the field of technology and operation in transport systems. Graduates will be able to work not only independently, but also in scientific teams, where they will have the ability to formulate new highlights of corporate research independently, and after training to lead scientific teams or their parts. Graduates will also have the competences to take up teaching and research activities in a university environment. Graduates of doctoral studies can also be employed in state administration and companies at the appropriate level (managerial and managerial positions), where they will be able to design concepts of operating transport systems of various types, or they will be able to work as forensic experts in the field of transport.

Study aims

The main objective of the study program is to educate graduates with broad theoretical knowledge in the field of transport systems, supplemented by specific practical knowledge and skills obtained by solving real problems of professional practice or acquired in practice carried out in companies engaged in the construction of vehicles or operation of transport systems, foreign universities and scientific workplaces. Graduates gain experience from scientific-research cooperation in international scientific teams.
Student completes theoretical and technological subjects according to individual study plan and elaborates doctoral dissertation under the supervision of a supervisor demonstrates the ability to creatively extend its knowledge of the field of study, demonstrates the ability of independent creative work in solving challenging tasks in practice both within the university and within international cooperation.
The study program educates top professionals who will be able to work in the scientific, research, development and production

spheres in highly professional and managerial positions in the field and related fields.
Doctoral study program Transport Systems is based on the previous doctoral study program Transport Technique and Technology accredited at the Faculty of Mechanical Engineering VŠB – TUO until 2014, and is significantly extended with courses providing the student with a detailed professional view of solved problems of current transport practice to gain deep knowledge of optimization principles. The newly proposed doctoral study program built on the newly accredited Master's study program Transport Systems and Technology, which is currently accredited at the Faculty of Mechanical Engineering of VŠB-TUO until 2028.

Graduate's knowledge

The graduate of Transport Systems study program will acquire a broad theoretical knowledge of the program and his study is profiled in various scientific areas focused on:
• Processes in transport systems, their modeling and optimization in both deterministic and stochastic operating conditions;
• Procedures related to vehicle design solutions, related reliability calculations and competencies to assess vehicle driving strategies;
• Cross-sectional problems of transport systems (economic aspects, environmental aspects, logistics, human factor, etc.) and optimizing the operation of transport systems.

Graduate's skills

The graduate will acquire:
• Methods of scientific research work especially with the use of professional software used by potential training university department (Xpress-IVE, Witness etc.);
• Methods of evaluation of obtained results and their interpretation;
The graduate is able to extend the knowledge of the field by original research based on the principles of scientific work received during the study and also is able to develop and evaluate theories, concepts and methods of the field, including their inclusion in a wider range.

Graduate's general competence

Graduates of the doctoral study program Transport Systems will be able to:
• Plan large-scale activities of a creative nature and to acquire and plan resources for their implementation;
• Communicate their expertise, professional skills and general competences in the foreign language at B1-B2 level according to the Common European Framework of Reference by receiving the a sufficient degree of soft skills;
• Acquire new professional knowledge, skills and competences through their own creative activities and influence the conditions and context of the education of others;
• Evaluate new knowledge and ideas, taking into account the long-term social consequences of their use,
• Solve complex independently ethical problems in creative activities or exploitation of its results.

Study curriculum

- form Full-time (en)
- form Part-time (en)