VSB TECHNICAL UNIVERSITY OF OSTRAVA | FACULTY OF MECHANICAL ENGINEERING

Transport and Material Handling

Generated: 22. 11. 2026

Faculty	Faculty of Mechanical Engineering
Type of study	Doctoral
Language of instruction	English
Code of the programme	P0719D270006
Regular period of the study	4 years
Coordinating department	Institute of Transport
Coordinator	prof. Ing. Aleš Slíva, Ph.D. Paed.IGIP
Keywords	analysis and design, means of transport

About study programme

The doctoral study program Transport and Material Handling follows on from the follow-up master's degree program in Mechanical Engineering, field of study Structural and Process Engineering, specialization Transport Machines and Handling with material. The above-mentioned doctoral study program can be studied by graduates of the same or related master's degree programs and fields from other faculties, colleges or universities.

Graduate's employment

The expected applicability of graduates of the doctoral study program Transport and Handling Technology on the Labor Market is in the highest positions of company management, science and research as well as the pedagogical process at universities and colleges. The basic characteristics of future employers of graduates of the above-mentioned doctoral study program include: dynamically developing companies with innovation potential, start-up companies, companies doing business in a wide range of transport, handling, storage and material processes, companies expanding through the protection of intellectual property, universities and research centers not only in the Czech Republic but also abroad, companies with state participation (most often under the responsibility of the Ministry of Education, the Ministry of Defense, the Ministry of Industry and Trade and the Ministry of Finance). Typical managerial positions include: junior and senior researcher, research and development manager, senior designer, science and research worker, independent worker in science and research, innovator, inventor, academic worker, etc.

Study aims

The aim of the doctoral study program Transport and Material Handling is to provide comprehensive education and training of researchers who will be able to work professionally and competently at the level of international standards in transport, handling, storage and process systems and mechanics of stored, transported and process modified materials using modern mathematical (numerical) and optimization methods, information technology and teamwork. As part of the study and dissertations will address current topics in connection with transport and process equipment, especially multifunctional, ie multi-purpose equipment fulfilling not only the transport function but also the process function, including optimization performance, consumption and durability requirements. An important goal is the integration of the student into international structures through international internships, lectures and projects.

Graduate's knowledge

The professional knowledge of the graduate of the doctoral study program Transport and Handling Technology is deepened not only by studying in the prescribed study subjects, but also by participating in solving professional issues companies, in solving student

grant projects and projects solved by trainers.

The professional knowledge of the graduate is focused, taking into account the topic of the dissertation, mainly on the following areas:
• mathematical (numerical) modeling of stored and transported materials and their interaction with engineering parts,
• optimization methods and procedures,
• mechanics of stored, transported and process-treated materials,
• processes taking place in transport, storage and process systems,
• experimental and analytical methods and process verification,
• innovation processes.

Graduate's skills

The professional skills of the graduate of the doctoral study program Transport and Material Handling consist mainly in mastering the methods of scientific research work using modern, sophisticated computer programs to simulate processes with stored, transported and process-modified materials. Other important skills include the ability to publish in prestigious scientific journals, to lecture and communicate the results of teamwork at professional meetings, including lectures in English and, last but not least, the ability to work pedagogically with university students.

Graduate's general competence

General competencies of the graduate of the doctoral study program Transport and Handling Technology:
• the graduate is able to independently solve complex scientific research tasks,
• the graduate is able to defend and present the results of his work not only to the scientific community, but also to the general public in the Czech and world languages,
• the graduate is able to respond completely independently to the needs of increasing his / her qualification or supplementing education,
• the graduate independently evaluates and verifies new knowledge,
• the graduate respects publication, ethical and moral principles in his / her work.

Professions

- Logistics manager
- Materials specialist
- Power plant system engineer
- Research and development specialist
- Industrial engineer

Hard skills

- Transport processes
- Processing of drawing documentation
- Knowledge of transport systems and structures
- Analyzing a design problem

Study curriculum

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