VSB TECHNICAL UNIVERSITY OF OSTRAVA | FACULTY OF MECHANICAL ENGINEERING

Robotics

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Faculty	Faculty of Mechanical Engineering
Type of study	Doctoral
Language of instruction	English
Code of the programme	P0714D270004
Regular period of the study	4 years
Coordinating department	Department of Robotics
Coordinator	prof. Ing. Zdenko Bobovský, PhD.
Keywords	Research and Development, Mechatronics, Industry 4.0, Robotics

About study programme

Robotics is a modern and promising field that is already changing the world and has an open future - the demand for experts (and well-paid).
Robots ride, heal and help, produce and grow, earn and clean. Almost everything is controlled automatically. And you will be there: to be able to develop, deploy and use them.
We are interesting for foreign students - they study and even work for us.
We list creative topics of doctoral theses.
We are successful in obtaining scientific research projects and involve our students in their solution.
We motivate students to complete internships and study trips abroad.
Visit our website: http://robot.vsb.cz/ - where it is possible to get acquainted with our activities in the fields of science and research, publications, cooperation with practice and also annual reports.

Graduate's employment

Graduates will be employed in research and development teams working in the field of industrial and service robotics, in design offices dealing with the development and innovation of machines and equipment in the field of automation and mechanization of mechanical engineering in general.

Study aims

The aim of the study is to deepen the theoretical knowledge from the master's study, to understand the context and to combine this knowledge to acquire a mechatronic comprehensive approach to the creation of robotics and
mechatronic systems in the field of production, research and development as well as in the field of service activities. Students are widely trained in the field of innovative procedures applied in industrial research and development.

Graduate's knowledge

The field is focused on the comprehensive expertise of graduates, especially in the field of robotic equipment design.
The field is strongly interdisciplinary, graduates will gain relatively extensive knowledge in the field of creation and optimization of a mechanical subsystem with computer support, in the field of control and sensorics emphasis is placed on the latest technical and software means of control, environmental perception and human communication and in the field of drive subsystems. knowledge of new electric, hydraulic and pneumatic drives and their applications. The aim of the study is to deepen the theoretical knowledge from the master's study, understanding the context and combining this knowledge to acquire a mechatronic comprehensive approach to the creation of robotics systems both in the field

production and service activities.

Graduate's skills

Graduates will master the methodology of scientific work in the field of applied research and development of industrial and service robots and their applications, with a significant application of the mechatronic approach to the development of these complex technical systems. In the field of creating and solving innovative tasks, graduates will master the basic methodological and scientific procedures, a wide range of students are trained in the field of innovative procedures, applied
in industrial research and development.

Graduate's general competence

Graduates are able to evaluate new knowledge and ideas in the field, taking into account the long-term social consequences of their use, plan large-scale activities of a creative nature and obtain and plan resources for their implementation, solve ethical problems related to creative activity or use of its results. Graduates of the field are able to clearly and convincingly communicate their knowledge in the field to other members of the scientific community at
international level and the general public.

Professions

- Project manager
- Researcher
- Scientific researcher for process control
- Research and development
- Production system engineer
- Controlling manager
- Research team leader
- Academic staff member

Hard skills

- Processing of drawing documentation
- Robot programming
- Analyzing a design problem
- Reading technical documentation
- Mathematical methods and analyses
- 2D design programmes
- Design with the support of CAD system Creo
- Designing robotic workplaces

Study curriculum

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