DEPARTMENT OF ENGINEERING PROCESSES AUTOMATION AND INTEGRATED MANUFACTURING SYSTEMS

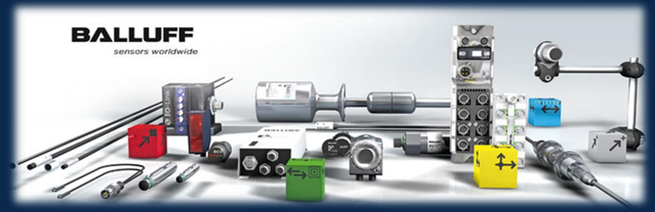
Integrated Manufacturing Systems (AC4)

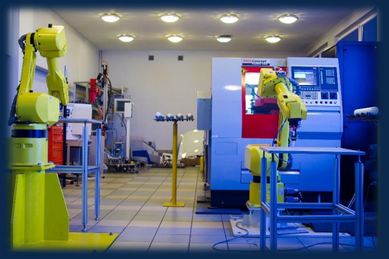
Characteristics of the master programme

AC4 students can gain comprehensive knowledge in the field of automation and robotisation of technological processes, design and IT integration of robotic production systems, especially in the design and operation of industrial automation devices and systems and their applications in production systems. Students acquire special knowledge in the field of designing industrial automation systems, based on the pneumotronic and hydrotronic elements, digital automation systems, as well as in the area of application of CAx engineering systems, intended for designing, modelling and simulating production systems and on-line/off-line robotic programming systems. They have knowledge of the operation of technological machines and their diagnostics.

Why is it worth choosing the AC4 master programme

During their studies at the AC4 master programme, apart from theoretical knowledge, students also gain practical knowledge to a large extent. The AC4 master programme is conducted under the patronage of BALLUFF, one of the leading manufacturers of sensors and other industrial automation devices, with significant cooperation of other well-known industrial automation companies, such as: ABB, ASTOR, AiUT, RW Swiss, KUKA. These companies organise training courses and specialised advanced-level courses for students of the AC4, e.g. in the field of PLC programming and industrial robots off-line programming. Students can develop and deepen their knowledge and interests as a part of the activities carried out at the Faculty's Student Scientific Circles: Mechatronics and Robotics; Design and Operation of Robotic Systems; Process Automation and Robotisation; Applications of Sensory Systems and Industrial Networks.





Contents of the master programme, forms of education

- Control, measurement and diagnostic systems, Microprocessor-based control systems,
- Robotisation of technological processes and robots programming,
- PLC programming,
- Distributed control systems and real-time operating systems,
- Design and modelling of flexible manufacturing systems,
- Production planning and control in automated systems,
- Acquisition and management of production data,
- Computer integrated manufacturing.

All classes are conducted in English. Contact and remote learning methods are provided.

Graduate profile and employment prospects

Graduates are familiar with the technical and organisational aspects of modern industry, including vertical and horizontal system integration, important in the context of the fourth industrial revolution - Industry 4.0. They are comprehensively prepared to perform engineering works in the field of automation and robotisation, as well as design and operation of integrated manufacturing systems. They have knowledge in the field of organisational and technical preparation of production as well as in the area of modern manufacturing methods and computer integration. They can use modern IT tools in the design and simulation of manufacturing, control, diagnostics, visualisation and supervision of technological processes. They are comprehensively prepared to carry out design and implementation of industrial automation devices and technological preparation of production in the field of machine programming and production systems. They find employment in various industry branches, where production is based on highly automated and computer-integrated machines.

CONTACT AND MORE INFORMATION

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Politechnika Śląska

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