

**Learning outcomes for *Mechatronics studies*
enrolments 2023/2024**

second degree studies – educational applied profile

The Polish Qualifications Framework Level – level 7

Professional title obtained by a graduate – master

Symbol	Learning outcomes for the Mechatronics major After graduating the first degree studies in Mechatronics major, graduate:	Code of the component of description of the Polish Qualifications Framework – detailed characteristics P7S
KNOWLEDGE		
K_W01	Student knows and understands to a greater extent, selected facts and phenomena, explaining the complex dependencies between them, as an advanced general knowledge of mathematics and physics, are sufficient to formulate and resolve complex mechatronics tasks	P7S_WG
K_W02	Student has a structured and theoretically built knowledge of automation, electronics and electro-technology, covering key issues and selected subjects in advanced, indoor and outdoor knowledge, and applies the practical experience in mechatronics	P7S_WG
K_W03	Student has a structured and theoretical knowledge of materials science, covering key issues and selected subjects in the field of advanced school knowledge and the practical application of this knowledge in mechatronics.	P7S_WG
K_W04	Student has a theoretical and structured mechanical engineering knowledge, covering key issues and selected issues in the field of enhanced mountain knowledge, and the practical application of this knowledge in mechatronics.	P7S_WG
K_W05	Knows and understands the facts and phenomena chosen to a greater extent, explaining the complex dependencies among them, an advanced general knowledge of automation, electrotechnics and electronics sufficient to formulate and resolve complex mechatronics tasks	P7S_WG
K_W06	Student knows and understands to a greater extent, the facts and phenomena chosen by explaining the complex dependencies between them, which are an advanced general knowledge of mechanical engineering, sufficient to formulate and resolve complex mechatronics tasks.	P7S_WG
K_W07	Student has a theoretical and structured technical information technology that includes key issues and selected topics in the field of advanced school knowledge and the practical application of this knowledge to mechatronics by means of appropriate methods and tools	P7S_WG
K_W08	Student has in-depth knowledge of the life cycle of equipment, facilities and systems of mechatronics	P7S_WG
K_W09	Student has a structured and theoretical knowledge of the research methodology, covering key issues and selected issues of enhanced literal knowledge, and the practical application of this knowledge in mechatronics	P7S_WG
K_W10	Student shall have management knowledge, with particular reference to: Quality management, application of the principles of work organization and management, taking into account the principles of ergonomics and health and safety at work, task planning, project management.	P7S_WK

K_W11	Student knows and understands the basic concepts of industrial property protection and copyright. It is also able to use the resources of patent information.	P7S_WK
K_W12	Student knows and understands the general principles of the conduct and development of economic activities, with particular regard to the specific features of the mechanical and agricultural industry.	P7S_WK
K_W13	Student shall have the knowledge necessary to understand the ethical, economic, legal and other non-technical conditions of professional activity, with a particular understanding of the legal and ethical responsibilities borne in the context of the design of the instruments and systems of mechatronical activity.	P7S_WK
SKILLS		
K_U01	Student is capable of obtaining information (in Polish and English) from literature, databases and other sources, integrating it, interpreting it, critical analysis, synthesis and presentation of this information, formulating and resolving complex and unusual problems, and innovative performing tasks.	P7S_UW
K_U02	Student is capable of using information and communication technologies (ICT) with particular emphasis on the creation of design documentation, the use of engineering graphics for projects and smaller tasks in the field of mechatronics.	P7S_UW
K_U03	Student knows how to plan and carry out experiments, including computer measurements and simulations, using and adapting existing or developing new methods and tools, interpreting the results obtained and drawing conclusions.	P7S_UW
K_U04	Student can prepare a scientific study in Polish or English, e.g. a brief report in Polish and English or a short paper showing the results of his experimental studies.	P7S_UW
K_U05	Student is able to make proper use of scientific research methodology knowledge, to properly use analytical tools and methods, to formulate research hypotheses and test them using scientific methods	P7S_UW
K_U06	Student shall have communication skills on specialised subjects in Polish and in a foreign language in accordance with the requirements set out for level B2 of the European System of Language Training Statements	P7S_UK
K_U07	Student has language skills to facilitate oral presentations, conduct discussions in Polish or English on technical issues, in particular regarding mechatronics.	P7S_UK
K_U08	Student can guide the work of project teams to solve typical and new problems in the implementation of interdisciplinary mechatronical projects and take a leading role in teams	P7S_UO
K_U09	It shall have practical self-training skills to enable lifelong learning to be self-taught and to target others in this field	P7S_UU
SOCIAL COMPETENCE		
K_K01	Student is ready to assess critical progress and content, understands the need to continuously upgrade his or her content, to define the direction and areas of personal self-adaptation and to inspire and organise the learning process of others	P7S_KK
K_K02	Student is ready to recognize knowledge in cognitive and practical solutions and to consult experts in case of difficulties in solving the problem itself	P7S_KK
K_K03	Student properly weights and evaluates the scales ordered or on its own initiative, of typical and new challenges complex in problem situations, skill fully identifies priorities in their resolution	P7S_KO
K_K04	Student is ready to initiate action in favour of the public interest	P7S_KO
K_K05	Student is ready to think and act in a business way	P7S_KO
K_K06	Student is ready to play a responsible professional role, taking into account the development of the professional acquis, the maintenance of the ethos of the profession, the respect and development of the principles of professional ethics	P7S_KR