

**Efekty uczenia się dla kierunku studiów *Mechatronika*
nabór 2019/2020**

Studia I stopnia – profil praktyczny

Poziom Polskiej Ramy Kwalifikacji – poziom 7

Tytuł zawodowy uzyskany przez absolwenta - magister

Przyporządkowanie efektów kształcenia do odpowiednich dyscyplin naukowych

Automatyka, elektronika i elektrotechnika - 62,1%

Informatyka techniczna i telekomunikacja - 22,6%

Inżynieria mechaniczna - 13,4%

Nauki o zarządzaniu i jakości - 0,7

Nauki o komunikacji społecznej i mediach - 1%

Filozofia - 0,2%

Symbol	Efekty uczenia się dla kierunku <i>mechatronika</i> . Po ukończeniu studiów I stopnia na kierunku studiów <i>mechatronika</i> absolwent:	Kod składnika opisu Polskiej Ramy Kwalifikacji – charakterystyki szczegółowe P7S
WIEDZA		
K_W01	Student deeply knows and understands selected facts and phenomena, explaining the complex relationships between them, which constitute advanced general knowledge of mathematics and physics, sufficient to formulate and solve complex tasks related to mechatronics.	P7S_WG
K_W02	Student has a structured and theoretically founded knowledge in the field of automation, electronics and electrical engineering, covering key issues and selected issues in the field of advanced detailed knowledge as well as practical application of this knowledge in mechatronics.	P7S_WG
K_W03	Student has a structured and theoretically founded knowledge in the field of materials science, covering key issues and selected issues in the field of advanced detailed knowledge as well as practical application of this knowledge in mechatronics.	P7S_WG
K_W04	Student has a structured and theoretically founded knowledge in the field of mechanical engineering, covering key issues and selected issues in the field of advanced detailed knowledge as well as practical application of this knowledge in mechatronics.	P7S_WG
K_W05	Student knows and understands to a greater extent selected facts and phenomena, explaining the complex relationships between them, which constitute advanced general knowledge in the field of automation, electronics and electrical engineering, sufficient to formulate and solve complex tasks related to mechatronics.	P7S_WG
K_W06	Student has an in-depth knowledge and understanding of selected facts and phenomena, explaining the complex relationships between them, constituting advanced general knowledge in the field of mechanical engineering, sufficient to formulate and solve complex tasks related to mechatronics.	P7S_WG
K_W07	Student has a structured and theoretically founded knowledge in the field of technical informatics, including key issues and selected issues in the field of advanced detailed knowledge, as well as the practical application of this knowledge in mechatronics through the use of appropriate methods and tools.	P7S_WG
K_W08	Student has an in-depth knowledge of the life cycle of mechatronic devices, facilities and systems.	P7S_WG
K_W09	Student has a structured and theoretically founded knowledge in the field of research methodology, covering key issues and selected issues in the field of advanced detailed knowledge as well as practical application of this knowledge in mechatronics.	P7S_WG

K_W10	Student has knowledge of management, with particular emphasis on: quality management, applying the principles of work organization and management, taking into account the principles of ergonomics and occupational health and safety, task planning, project management.	P7S_WK
K_W11	Student knows and understands the basic concepts of industrial property protection, copyright. Student also knows how to use patent information resources.	P7S_WK
K_W12	Student knows and understands the general principles of running and developing a business, with a particular emphasis on the specificity of the mechatronic industry.	P7S_WK
K_W13	Student has the knowledge necessary to understand the ethical, economic, legal and other non-technical determinants of professional activity, with particular understanding of the legal and ethical responsibility related to the constructed mechatronic systems.	P7S_WK
UMIĘTNOŚCI		
K_U01	Student is able to obtain information (in Polish and English) from literature, databases and other sources, integrate them, make their interpretation, critical analysis, synthesis and presentation of this information, formulate and solve complex and unusual problems and perform tasks in an innovative way.	P7S_UW
K_U02	Student is able to use information and communication technologies (ICT) with particular emphasis on the development of project documentation and the use of engineering graphics for the implementation of projects and tasks in the field of mechatronics.	P7S_UW
K_U03	Student is able to plan and carry out experiments, including measurements and computer simulations using and adapting existing or developing new methods and tools, interpret the obtained results and draw conclusions.	P7S_UW
K_U04	Student is able to prepare a scientific study in Polish or English, e.g. a brief report in Polish and English or a short paper presenting the results of experimental research obtained by him.	P7S_UW
K_U05	Student is able to properly use the knowledge of scientific research methodology, to properly use analytical tools and methods, to formulate research hypotheses and test them using scientific methods.	P7S_UW
K_U06	Student has communication skills on specialist topics in English and in a foreign language, in accordance with the requirements specified for the B2 + level of the Common European Framework of Reference for Languages.	P7S_UK
K_U07	Student has language skills allowing for oral presentations, conducting debates in Polish or English, on technical issues, in particular in the field of mechatronics.	P7S_UK
K_U08	Student is able to manage the work of project teams in solving typical and new problem situations during the implementation of interdisciplinary mechatronic projects and take a leading role in teams.	P7S_UO
K_U09	Student has practical self-education skills allowing for their own learning throughout life and directing others in this area.	P7S_UU
KOMPETENCJE SPOŁECZNE		
K_K01	Student is ready to critically assess the acquired knowledge and received content, understands the need for continuous improvement of the substantive workshop, can set directions and areas of personal professional self-improvement, and inspire and organize the learning process of other people.	P7S_KK
K_K02	Student is ready to recognize knowledge in solving cognitive and practical problems and to consult experts in case of difficulties with solving the problem on their own.	P7S_KK
K_K03	Student correctly evaluates the scale of the challenges ordered or undertaken on his own initiative, typical and new, occurring in problematic situations, and skillfully indicates the priorities in solving them.	P7S_KO
K_K04	Student is ready to initiate activities in the public interest.	P7S_KO
K_K05	Student is ready to think and act in an entrepreneurial manner.	P7S_KO
K_K06	Student is ready to perform his professional roles responsibly, taking into account the development of the achievements of the profession, maintaining the	P7S_KR

	ethos of the profession, observing and developing the principles of professional ethics.	
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