Schedule 1 to Resolution No. of the Senate of the University of Warmia and Mazury in Olsztyn of 26 February 2021

**Learning outcomes for the doctoral school**

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| Code for the component describing the second-degree characteristics of learning outcomes for qualifications at level 8 of the Polish Qualifications Framework | Description of second-degree characteristics of learning outcomes for qualifications at level 8 of the Polish Qualifications Framework | Symbol of learning outcomefor doctoral school | Description of learning outcomes for the doctoral school |
| *1* | *2* | *3* | *4* |
| **KNOWLEDGE: the graduate knows and understands** |
| SD\_P8S\_WG | to the extent necessary to revise existing paradigms -– worldwide achievements, including theoretical foundations and general and selected specific issues -– appropriate to the scientific or artistic discipline, major trends in the development of scientific or artistic disciplines relevant to the programme of study, the methodology of scientific research, the rules for the dissemination of the results of scientific activity, including through open access | SD\_P8S\_WG1 | theoretical foundations, general issues and selected specific issues in chosen scientific fields/disciplines |
| SD\_P8S\_WG2 | main trends and models in the development and performance of scientific research and the dissemination of the results of scientific activity within a given field/discipline based on the use of scientific literature in English |
| SD\_P8S\_WG3 | foundations for the application of contemporary advanced research methods conducted within scientific disciplines and interdisciplinary research  |
| SD\_P8S\_WG4 | theoretical foundations of reasoning and the complex nature of scientific language in the respective scientific field/discipline |
| SD\_P8S\_WG5 | worldwide achievements and trends in scientific research methods and the statistical analysis of the results |
| SD\_P8S\_WG6 | theoretical aspects of learning in academic education |
| SD\_P8S\_WK | fundamental dilemmas of contemporary civilisation, economic, legal, ethical and other significant determinants of scientific activity, the basic principles of knowledge transfer to the economic and social sphere and the commercialisation of the results of scientific activity and know-how related to these results | SD\_P8S\_WK1 | legal, ethical, economic, social and environmental conditions for conducting research activities in the particular field/discipline |
| SD\_P8S\_WK2 | the basic procedures for the preparation of research projects, the principles of knowledge transfer to the economic and social spheres and the commercialisation of research results in a given field/discipline |
| SD\_P8S\_WK3 | personal qualities and role models affecting the authority of an academic teacher |
| SD\_P8S\_WK4 | fundamental dilemmas of contemporary European civilisation |
| **SKILLS: a graduate is able to** |
| SD\_P8S\_UW | apply knowledge from different fields of science or art to creatively identify, formulate and solve in an innovative way complex problems or research tasks, and in particular: * define the aim and subject of research, scientific, formulate a research hypothesis,
* develop research methods, techniques and tools and apply them in a creative manner,
* draw conclusions on the basis of scientific findings, critically analyse and evaluate the results of scientific research, expert activities and other works of a creative character and their contribution to the development of knowledge, critically analyse and evaluate the results of scientific research, expert activities and other works of a creative character and their contribution to the development of knowledge, transfer the results of scientific activities to the economic and social spheres.
 | SD\_P8S\_UW1 | apply contemporary research methods relevant to the research problem being analysed and demonstrate innovative solutions in improving and developing research techniques for the purposes of the tasks undertaken  |
| SD\_P8S\_UW2 | search for, analyse, evaluate and use scientific information from different types of sources for research tasks |
| SD\_P8S\_UW3 | apply basic types of reasoning, formulate and test research hypotheses, process and present data, and draw conclusions from research findings |
| SD\_P8S\_UW4 | communicate, analyse and evaluate the opportunities to use the knowledge acquired, participate in negotiations with research and business partners |
| SD\_P8S\_UW5 | prepare a research project application propose a method for transferring research results into the economic and social sphere |
| SD\_P8S\_UW6 | assess the patentability of one’s own or others’ research results, assess the protection capability of research results, identify infringements of intellectual property rights |
| SD\_P8S\_UW7 | apply appropriate methods of scientific research within a given field/discipline of science, which includes formulating research and statistical hypotheses, application of statistical analyses appropriate to the nature of scientific research and drawing conclusions on the basis of analyses of research results, use statistical computer programs |
| SD\_P8S\_UW8 | apply knowledge from different fields/disciplines of science, different stages of the research process in the creative design of teaching activities, including learning by solving research problems based on the well-prepared methodological tools of the academic teacher |
| SD\_P8S\_UW9 | apply knowledge from the field/discipline of science to creatively identify, formulate and solve in an innovative way complex problems |
| SD\_P8S\_UW10 | analyse scientific literature, develop a research programme, gain mastery of research techniques necessary to carry out research, plan research implementation, analyse research results |
| SD\_P8S\_UK | communicate on specialist topics to the extent required for active participation in the international scientific community, disseminate the results of scientific activity, also in popular forms, initiate debate, participate in scientific discourse, use a foreign language at B2 level of the Common European Framework of Reference for Languages to the extent required for participation in the international scientific and professional community | SD\_P8S\_UK1 | interpret facts within theoretical models of contemporary knowledge, recognise the plurality of research methods and the dynamics of scientific theories |
| SD\_P8S\_UK2 | collect, systematise, process and transfer information, disseminate knowledge, communicate with the environment |
| SD\_P8S\_UK3 | initiate and participate in discussions |
| SD\_P8S\_UK4 | communicate in English on specialist topics to the extent necessary to actively participate in an international research environment |
| SD\_P8S\_UO | plan and implement individual and team research or creative projects, also in an international environment. | SD\_P8S\_UO1 | plan and implement individual and team research or creative projects |
| SD\_P8S\_UU | independently plan and act for their own development, inspire and organise the development of others, plan activities or groups of activities and implement them using modern methods and tools | SD\_P8S\_UU1 | identify and develop the qualities of an authority |
| SD\_P8S\_UU2 | plan and implement teaching activities with the use of modern methods and tools |
| SD\_P8S\_UU3 | define learning objectives, plan the design and stages of the didactic process, select source material for classes and analyse the learning content of the subject for the relevant field/discipline of science  |
| SD\_P8S\_UU4 | act in a professional and ethical manner, taking responsibility for the tasks assigned to them; provide the public with information and opinions on scientific and technical achievements |
| **SOCIAL SKILLS: the graduate is prepared to** |
| SD\_P8S\_KK | critically evaluate the achievements within a given scientific or artistic discipline, critically assess one's own contribution to the development of a given scientific or artistic discipline, recognise the importance of knowledge in solving cognitive and practical problems | SD\_P8S\_KK1 | form opinions and claims based on knowledge and scientific facts |
| SD\_P8S\_KK2 | develop an appropriate ethical and moral attitude as a researcher, ensuring a high sense of ethical values in the research community |
| SD\_P8S\_KK3 | carry out critical evaluation when acquiring information from various sources and recognise the importance of knowledge in solving cognitive and practical problems |
| SD\_P8S\_KK4 | deepen their knowledge and develop skills related to academic teaching in the field/discipline of science  |
| SD\_P8S\_KK5 | recognise the importance of improving language skills for a future research career |
| SD\_P8S\_KK6 | consciously pursue self-directed learning, creatively implement research results in future work and evaluate them critically, show interest in recent scientific developments in the field/discipline, initiate research topics |
| SD\_P8S\_KO | fulfil the social responsibilities of researchers and creators, initiate action for the public interest, think and act in an entrepreneurial manner | SD\_P8S\_KO1 | make informed, responsible, grounded in theory and practice, use of research opportunities and transfer of research results, secure them properly and make them accessible to the public in order to develop entrepreneurship |
| SD\_P8S\_KO2 | act as a mentor in the area of teaching and research activities when conducting classes with students |
| SD\_P8S\_KO3 | think and act in an entrepreneurial manner  |
| SD\_P8S\_KR | uphold and develop the ethos of the research and creative community, which includes:* conducting scientific activity in an independent manner,
* respecting the principle of public ownership of the results of scientific activity, taking into account the principles of intellectual property protection
 | SD\_P8S\_KR1 | conduct themselves in compliance with the applicable legal and ethical provisions |
| SD\_P8S\_KR2 | conduct research activities independently or in collaboration with others and commercialise research results, taking into account the principles of intellectual property protection |
| SD\_P8S\_KR3 | provide a personal role model for academic staff |

*Explanations:*

*Columns 1 and 2 – pursuant to Regulation of the Minister of Science and Higher Education of 14 November 2018 (Dz. U. of 2018, item 2218) on the second-degree characteristics for qualification at levels 6-8 of the Polish Qualifications Framework*

*Column 3 – symbol of the learning outcome for the doctoral school*

SD\_P8S – doctoral school, level 8 of the Polish Qualifications Framework

W– category of knowledge / G – depth;/ K - context

U – category of skills / W - use of knowledge; / K - communication;/ O - organisation;/ U – learning

K – category of social competence / K - critical assessment; /O - responsibility; /R – professional role

1, 2, 3 and subsequent – the number of the learning outcome

*Column 4 - description of the learning outcome content*