

**Name of the course:** Data Science

**Profile - Practical**<sup>1</sup>

**Level of study:** second cycle<sup>2</sup>

**Field:** social sciences, **academic discipline:** economics and finance 60%, management and quality sciences 20%, computer science 20%<sup>3</sup>

**Level of the Polish Qualifications Framework - level** 7<sup>4</sup>

Symbols of effects	LEARNING OUTCOMES	Reference to	
		universal PRK characteristics <sup>5</sup>	The second level PRK characteristics for the relevant <sup>6</sup>
1	2	3	4
	<b>KNOWLEDGE: GRADUATE KNOWS AND UNDERSTANDS</b>	<b>Component code description</b>	<b>Component code description</b>
K_W01	in-depth study of the specific subject matter, recent developments and trends in the social sciences	P7S_W	P7S_WG
K_W02	concepts, terminology and advanced issues in Data Science, including regularities in the formation of multidimensional phenomena and economic processes, interdependencies between them, as well as directions of development and links of Data Science with related disciplines	P7S_W	P7S_WG, P7S_WK
K_W03	in depth - the different types of structures and institutions operating in the economy	P7S_W	P7S_WG, P7S_WK

<sup>1</sup> Insert appropriate: general academic or practical

<sup>2</sup> Enter as appropriate: first-cycle, second-cycle or unified master's degree

<sup>3</sup> Enter according to the Regulation of the Minister of Science and Higher Education of 20 September 2018 on scientific fields and scientific and artistic disciplines. The field of study should be assigned to at least one discipline<sup>1</sup>. In the case of assigning the field of study to more than one discipline<sup>1</sup>, indicate the leading discipline in which more than half of the learning outcomes will be obtained

<sup>4</sup> Enter as appropriate: first-cycle studies - level 6, second-cycle studies or long-cycle studies - level 7.

<sup>5</sup> 2015 The reference should be to the appropriate PRK level 6-8 according to the annex to the Act on the Integrated Qualification System of December 22

<sup>6</sup> Reference to the characteristics of the second level learning outcomes for qualifications at levels 6-8 of the Polish Qualification Framework typical for qualifications obtained within the system of higher education and science after obtaining a full qualification at level 4 - in accordance with the Regulation of the Minister of Science and Higher Education of 14 November 2018 on the characteristics of the second level learning outcomes for qualifications at levels 6-8 of the Polish Qualification Framework. In the case of engineering studies, they should also take into account the possibility of obtaining all engineering competences referred to in Part III of the Regulation. The learning outcomes for art studies should also include references to part II of the Regulation.

K_W04	in-depth - the features and behaviour of a human being as a subject of economy, being a part of socio-economic structures and determining the rules of their functioning	P7S_W	P7S_WG, P7S_WK
K_W05	in-depth - issues concerning the measurement of economic phenomena, selected statistical methods and econometric and economic data collection, analysis, processing and presentation tools and their practical applications	P7S_W	P7S_WG
K_W06	in-depth - issues related to classical and agile project management	P7S_W	P7S_WG
K_W07	in-depth study of the variability of social and economic structures, institutions and processes, including in-depth study of the causes, course and effects of the dynamics of economic phenomena and the conditions and consequences of the observed changes, as well as advanced quantitative and qualitative methods enabling description and analysis of these processes	P7S_W	P7S_WG
K_W08	in-depth - the influence of cultural patterns, ethical norms and modern technologies on the course of processes and directions of development of contemporary organisations and their environment	P7S_W	P7S_WG
K_W09	key questions that Data Science seeks to answer concerning, among other things, effective information extraction and processing, making forecasts, simulating economic processes and optimising business decisions	P7S_W	P7S_WK
K_W10	principles for the establishment and use of data repositories, including open data	P7S_W	P7S_WG
K_W11	legal and ethical standards and organisational rules governing data collection and processing	P7S_W	P7S_WG
	<b>SKILLS: GRADUATES CAN</b>	<b>Component code description</b>	<b>Component code description</b>
K_U01	identify, describe, model and interpret economic phenomena and processes using advanced quantitative methods	P7S_U	P7S_UW
K_U02	use various sources of information from the field of social sciences and methods of data analysis for a detailed description of phenomena and processes occurring in the enterprise and in its industry environment, and then make an evaluation, critical analysis and synthesis of this information	P7S_U	P7S_UW, P7S_UK
K_U03	locate the place of and be aware of the importance of Data Science in the system of sciences and be able to apply existing tools and methods typical of the field of study in practice or, if necessary, develop new analytical methods	P7S_U	P7S_UW, P7S_UU
K_U04	independently acquire knowledge and have the skills to solve complex and unusual problems problems specific to Data Science and undertake independently the implementation of proposed solutions	P7S_U	P7S_UW, P7S_UU
K_U05	participate in debates on key problems in Data Science, publicly express and shape own views, discuss with other participants and draw conclusions; lead a debate if necessary	P7S_U	P7S_UK
K_U06	use instruments to identify causes in an extended way and to carry out multidimensional analysis of conditions and effects of economic processes, make and verify hypotheses concerning economic issues and present the results of conducted analyses	P7S_U	P7S_UW
K_U07	forecast the values of parameters defining selected social and economic processes and phenomena, using advanced methods and extensive tools for the analysis of quantitative and qualitative data and information and communication techniques	P7S_U	P7S_UW
K_U08	apply in-depth knowledge of legal and ethical norms defining the rights and obligations of entities operating in socio-economic structures to the practical analysis of the effectiveness of their functioning	P7S_U	P7S_UW

K_U09	use in-depth knowledge of social sciences and analytical methods to formulate and test hypotheses related to implementation problems arising in economic practice	P7S_U	P7S_UW
K_U10	propose, justify and implement known advanced or new quantitative methods appropriate to solving specific economic problems	P7S_U	P7S_UW, P7S_UK, P7S_UO
K_U11	cooperate in teamwork, take on leadership roles and manage the work of the team	P7S_U	P7S_UO
K_U12	plan and implement their own learning and that of others	P7S_U	P7S_UU
K_U13	independently and collaboratively prepare oral presentations (in a foreign language at B2+ level) based on both theoretical studies and analyses of data acquired from a variety of sources	P7S_U	P7S_UK, P7S_UW
K_U14	use a foreign language in the business field in accordance with the requirements of level B2+ of the Common European Framework of Reference for Languages	P7S_U	P7S_UK
	<b>SOCIAL COMPETENCE: GRADUATE IS READY TO</b>	<b>Component code description</b>	<b>Component code description</b>
K_K01	think and act in an entrepreneurial way	P7S_K	P7S_KO
K_K02	co-operate and work in teams, organisations and institutions, taking responsibility for different organisational and social roles	P7S_K	P7S_KO
K_K03	recognise the importance of data analysis in solving practical problems and to draw on expert knowledge when it is difficult to find a solution independently	P7S_K	P7S_KK, P7S_KO
K_K04	to resolve professional dilemmas using advanced analytical tools and, in the event of difficulties, to seek expert advice	P7S_K	P7S_KO, P7S_KR
K_K05	actively participate in the preparation of socio-economic projects, including those undertaken in the social environment and in the public interest	P7S_K	P7S_KK, P7S_KO, P7S_KR
K_K06	to critically appraise his/her own knowledge and prepare responsibly for his/her work, continuously acquiring new knowledge and improving acquired skills, using a variety of sources, methods and techniques of self-education	P7S_K	P7S_KK