

LEARNING OUTCOMES FOR *COMPUTER SCIENCE AND ECONOMETRICS*
Studies of second degree; education profile: general academic

Placing the field of *computer science and econometrics* within other disciplines

The field of *computer science and econometrics* offered by Faculty of Mathematics, Computer Science and Econometrics at the University of Zielona Góra, has been placed within the discipline of Formal Sciences. However, due to its specificity, some of the field-specific learning outcomes relate to Social Sciences learning outcomes.

Code	Upon successful completion of second degree studies in the field of <i>computer science and econometrics</i> , students:	Relation to discipline-specific learning outcomes
KNOWLEDGE		
K_W01	have extensive knowledge of the significance of computer science, econometrics and mathematics for developments in the fields of formal and natural sciences, for the knowledge of the world and for the development of society and economy	X2A_W01
K_W02	are familiar with basic mathematical models used in economics, understand their mathematical and economic meaning, as well as possibilities and limitations of applying them	X2A_W03 X2A_W04 S2A_W06
K_W03	know basic measures of variability of economic magnitudes, understand the importance of using them and methods of calculating	X2A_W04 S2A_W06
K_W04	are familiar with international symbols used in actuarial science and with various types of insurance policies	X2A_W01
K_W05	know elements of classical risk theory, can estimate the probability of an insurer's ruin	X2A_W02
K_W06	know basic methods for multi-dimensional statistical data analysis used in market research	X2A_W01 X2A_W02 X2A_W06
K_W07	know basic sampling schemes for finite populations and methods to analyze data acquired from those schemes	X2A_W02
K_W08	have basic knowledge of how to carry out simulation research and how to apply it to economics	X2A_W03
K_W09	know how to create, use and improve information systems	X2A_W01 X2A_W04

K_W10	are familiar with principles for designing software, know principles for managing an IT project	X2A_W01 X2A_W04
K_W11	know classification and functionality of management information systems	X2A_W01
K_W12	know at least two languages of object-oriented programming	X2A_W01
K_W13	know selected applications of information technology in science and economy	X2A_W01 X2A_W04
K_W14	know basic notions and techniques of information technology, know selected advanced information technologies and methods	X2A_W01 X2A_W04 X2A_W06
K_W15	demonstrate organized knowledge concerning theory, technical concept and principles that govern the operation of computer networks and the Internet; have elementary knowledge of how network devices work and know fundamentals of network devices configuration	X2A_W01 X2A_W05
K_W16	have broadened knowledge of at least one of the following academic disciplines: computer science and its branches, discrete mathematics, operations research (especially its application to economics), mathematical statistics and its application to economics	X2A_W01 X2A_W06
K_W17	have achieved English language proficiency equivalent to level B2 of the Common European Framework of Reference for Languages and know specialist terminology used in articles on computer science, econometrics and mathematics	X2A_W01 X2A_W06
K_W18	know principles of occupational health and safety	X2A_W07
K_W19	have elementary knowledge of laws and code of ethics concerning academic research and educational activities	X2A_W08
K_W20	know and understand basic concepts and regulations concerning protection of industrial property and copyright laws; know how to use patent information resources	X2A_W09
SKILLS		
K_U01	can construct a line of advanced reasoning in accordance with principles of logic and can apply it to solve problems relating to previously studied academic disciplines	X2A_U01 X2A_U04
K_U02	can construct and analyze basic formal models found in economic issues, differentiate variables and parameters	X2A_U04 S2A_U06 S2A_U07
K_U03	can determine relations between economic variables using the language of mathematics	X2A_U04 S2A_U06

K_U04	can calculate measures of variability of economic magnitudes (marginal magnitudes, elasticity, increase rate, substitution rate)	X2A_U04 S2A_U06
K_U05	can calculate net premiums using tables of life expectancy and the principle of equivalence	X2A_U04
K_U06	can determine their interests and develop them; can get in touch and interact with other specialists in the same discipline	X2A_U06 X2A_U07 X2A_U08
K_U07	are able to choose a sampling scheme depending on available information concerning general population	X2A_U01
K_U08	can use previously studied methods of statistical inference and can properly interpret acquired results, taking into account multidimensionality of data	X2A_U04
K_U09	can support a decision making process using results of simulation research	X2A_U02
K_U10	have skills needed to design, implement and improve information systems and database, in particular in economic and administrative organizations	X2A_U01 X2A_U02 X2A_U04
K_U11	have skills essential for providing consultancy services which require analytical abilities and use mathematical, statistical, econometric and information technology tools	X2A_U01 X2A_U02 X2A_U04
K_U12	have skills needed to do research and activities requiring creativity skills	X2A_U06 X2A_U07
K_U13	can classify and recognize business models for e-economy	X2A_U06
K_U14	can organize work of a team of computer programmers who create advanced information systems using modern tools and technologies	X2A_U02 X2A_U04
K_U15	can use selected modern information technologies	X2A_U06
K_U16	can use computer programs for advanced analysis and data processing	X2A_U04
K_U17	are able to use a program which analyzes packages and can analyze protocols and network applications	X2A_U02
K_U18	can write a paper presenting a selected problem in computer science, econometrics, and discrete mathematics: can deliver a solution to the problem in a clear manner	X2A_U03 X2A_U06 X2A_U08
K_U19	demonstrate skills to write papers and deliver oral presentations on topics in computer science and econometrics using expertly chosen bibliographic resources	X2A_U03 X2A_U05 X2A_U08 X2A_U09

K_U20	have language proficiency (English) relevant to the language of computer science, econometrics and mathematics, meeting the requirements for level B2 of European Framework of Reference for Languages	X2A_U08 X2A_U09 X2A_U10
SOCIAL COMPETENCES		
K_K01	understand, and are able to make other people see the importance of using precise language to describe economic problems,	X2A_K03 X2A_K06 S2A_K03 S2A_K04
K_K02	understand the need for lifelong education, are able to learn on their own and organize learning process of other people	X2A_K01 X2A_K05
K_K03	are able to work in a team; understand the importance of systematic work on long term projects	X2A_K02 X2A_K05 X2A_K06
K_K04	are able to formulate precise questions to deepen their understanding of a given topic or to find missing elements of reasoning; are able to formulate opinions on essential topics in computer science, econometrics, and mathematics	X2A_K01 X2A_K02 X2A_K07
K_K05	understand the significance of intellectual honesty, both in their own and in other people's activities, and are aware of the need to respect copyrights	X2A_K03 X2A_K04
K_K06	understand responsibility and social aspects of practical application of acquired knowledge and skills	X2A_K06