**Karta opisu zajęć (sylabus) - The** **Course Description Card (syllabus)**

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| The field (direction) of the study | Food safety and certification |
| The title of the course | Research Methodology in Life Sciences |
| The lecture language | English |
| Type of the course | Optional |
| The study level | II-level (masters) |
| Form of the study | part-time studies (extramural) |
| The year of the studies | I |
| The semester | 1 (fall, winter) |
| Number of ECTS credit points divided into contact / non-contact points | 2 (1,04 /0,96) |
| Academic degree, name and surname of a person who is responsible for this course | Prof. dr hab. Jerzy Demetraki-Paleolog, prof. |
| Department offering the course | Dept. of Invertebrate Ecophysiology and Experimental Biology |
| The objective of the course | The objective is to show main principles of methodology of the natural-science excluding epistemology, and consequently, to develop a critical approach to scientific laws, theories, inference rules and methods which are used in biological research. Propaedeutics of knowledge-forming processes. |
| Education outcomes (knowledge, skills and social competences): | **Knowledge: knows and understands** |
| K1. the principles of epistemology and methodological basis of the knowledge-creation processes to the extent that allows for formulating hypotheses, as well as analyzing, reasoning, and inference. |
| K2. the essence of the basic methodological disputes on the field of natural sciences, problems connected with the forming of the scientific rights or theories and planning experiments, both in a historical and contemporary perspective. |
| **Skills: is able to** |
| S1. critically evaluate the research experiments and results, scientific achievements, as well as their impact on the development of knowledge in the field of his/her discipline, treating them critically but constructively. |
| **The social competences: is ready for** |
| SC1. showing a creative but critical attitude towards knowledge-building activities in the natural sciences and his/her discipline |
| References of the course learning outcomes to directional learning outcomes | K1 i K2: BC2 \_W13; S1: BC2 \_U11; SC1: BC2 \_K04 |
| References of the course learning outcomes to the engineer-education outcomes | do not concerns |
| Prerequisites and additional requirements | neither prerequisites nor additional qualifications are needed |
| Contents of the course | The main principles of epistemology, the specificity of the process of both cognition and interpretation in natural and agricultural sciences will be presented, as well as the main disputes views that relate to these issues. An attention will be paid to the historical aspects and philosophical perspective, especially to the philosophy of nature. We will consider various ways of verifying the truth and legitimacy of the scientific ideas, hypothesis, theories, and results. Theoretical analysis of the laws of science and nature will be applied. We will pay the particular attention to the critical approach to all sorts of theories and the processes of the scientific knowledge development, as well as to cognitive acts. The main principles of the risk management theory will be presented. |
| Mandatory references | 1. I. Niiniluoto, Matti Sintonen, Jan Wolenski; Handbook of Epistemology. Springer Science & Business Media, 31 mar 2004 – 1052p  2. R.L. Kirkham; Theories of truth: a critical introduction. MIT Press, Cambridge, MA, 1992. |
| Planned methods and forms of the didactic works | Lectures, discussion lectures, written tasks. The course has been prepared to be touched online . |
| Evaluation of achieving the learning outcomes and their documenting. | *VERIFICATION METHODS:*  *K1, K2 – The self-written works rating. Rating of the final self-written task.*  *S1 – The self-written works rating. Rating of the final self-written task*  *SC1 – Rating of the final self-written task*  *Archiving in paper form.*  *K1; K2; S1; ; SC1 – an attendance list*  *THE DETAILED CRITERIA FOR ASSESSMENT OF THE CONTROL WORKS:*  *3.0 - K, 51% -60% of knowledge; S, can apply the knowledge of this module sufficiently; SC, is able to formulate his/her own point of view*  *3.5 - K, 61% -70% of knowledge; S, can apply the knowledge of this module well; SC, sufficiently formulates and justifies his/her own point of view*  *4.0 - W, 71% -80% of knowledge; S, can apply knowledge of this, and also of other modules well; SC, Formulates and justifies his/her own point of view well*  *4.5 - K, 81% -90% of knowledge; can apply knowledge of this and other modules very well; SC, formulates and justifies his/her own point of view well and is able to defend it in the context of counter-arguments*  *5.0 - K, 91-100% of knowledge; S, can apply knowledge of this and other modules very well formulates his/her own point of view; SC, formulates and justifies his own point of view well and is able to defend it convincingly in the context of counter-arguments.*  *FORMS OF DOCUMENTING OF THE ACHIEVED LEARNING OUTCOMES: final and partial works are archived as a hard copies.* |
| Elements influencing the final grade and their weights | The final grade is influenced by:  - average grade from self-written works (40%)  - grade from the self-written final task (60%).  These conditions and requirements are presented to students and consulted with them during the first lecture. |
| The balance of ECTS points | ***The contact hours/ECTS (with the teacher's participation)***   * *lectures (21 hours/0,84 ECTS)* * *consultations (5 hours/0,2 ECTS)*   ***together******– hours 26 / 1,04 ECTS***  ***Non-contact hours/ECTS (without the teacher's participation)***  *- preparing of the self-written works, self-learning and studying (17 hours./0,68 ECTS)*  *- preparing of the self-written final task (7 hours/0,28 ECTS)*  ***together 24 hours. / 0,96 ECTS*** |
| The workload requiring direct participation of lecturers | *lectures (21 hours/0,84 ECTS)*  *consultations (5 hours/0,2 ECTS)*  ***together******– hours 26 / 1,04 ECTS*** |