

Subject: Methodology of Scientific Research

GENERAL INFORMATION

Organization unit	Faculty of Physical Education Chair of Humanities and Social Studies Chairman: Michał Lenartowicz
Course name	Methodology of Scientific Research
Subject code	SII-16
Teaching language	English
Type of subject (obligatory/ facultative)	obligatory
Level of studies (eg. bachelor, master)	master
Study year	1
Semester	2
ECTS points	2
Professor	Michał Lenartowicz
Studies program in which the subject is realized	Curriculum of PE course Curriculum of Sport course (Rehabilitation students may also take part in this methodology class)
Method of realization (stationary/ distance learning)	Stationary
Prerequisites	Bachelor degree in sport sciences or social sciences. The course requires real English language reading and writing capacity. Students are requested to read and analyze methodology text and case studies for every class.

DETAILED INFORMATION

Course aims and objectives

Providing students information on the rules of science and scientific work. Practicing skills related to research projects design, carrying out research using research methods suitable for solving research problems stated and writing research reports. Presenting key research methods, including qualitative research methodology and learning their applicability, designing selected research tools. Learning rules of ethical conduct in scientific research. Learning students primary rules of writing of scientific paper, report and dissertation.

Main topics

No	Topic
Lectures/classes	
1.	Presentation of the subject matter of the lectures, the organization of the classes, the conditions for passing the course and the literature. Practical familiarization of students with the principles and methods of work ensuring occupational safety and health when performing activities in the course with and/or without technical devices, equipment. Introduction: The subject of methodology. Descriptive and normative methodology. Science as a product and activity of man. Questions, functions and conditions for the emergence of science.
2.	Defining: basic types of definitions (analytical, synthetic, regulatory). Structure of analytical definition. Methods of fleshing out analytical definitions. Common faults of analytical definitions.
3.	Classifications and typologies: Conditions for logical correctness of classifications. Construction of multistage classifications. Classification versus ordering. Ordering relations. Creation of typologies ("ideal types").
4.	Criteria for logical evaluation of sentences: The logical sentence and its types. Sentence versus judgment. Classical and non-classical concepts of truthfulness of sentences. Relativism.
5.	The conclusiveness of deductive reasoning: Deductive reasoning, reductive reasoning. Inference. Proof. Deductive method. Deductive system.
6.	Induction: Induction as a generalizing translation. Induction by enumeration. Induction by elimination. Mill's canons of induction.
7.	Stages of research work: Scientific problem. Types of research questions and their assumptions. Theoretical hypotheses and working hypotheses. Verification and falsification of hypotheses.
8.	Variables and scales: Scope of applicability (qualitative and quantitative variables). Power of variables (nominal, ordinal, interval, quotient).
9.	Indicators: Concept of indicator. Definitional and factual indicators. Measures of relevance of indicators. Batteries of indicators.
10.	Sampling methods: Concept of sample and its types (random, quota). General criteria of sample selection. The problem of shortages in a random sample.
11.	Research methods: Selection of research methods. Advantages and limitations of the methods used. Types of methods: observation, experiment, analysis of written sources and creations.



12.	Principles of survey and questionnaire construction: Techniques of survey research. Principles of questionnaire construction. Coding of open-ended questions.
13	Design and conduct of qualitative research: Applications of qualitative research methods. Characteristics of qualitative approaches in social research. Examples of qualitative research implementation: interview, text analysis. Analysis of qualitative data and their use in research reports.
14	Ethics in research: Ethical issue in social research: voluntariness of participation, non-harming of subjects, anonymity and confidentiality, analysis and presentation of results. Political aspects of social research: objectivity and ideology.
15	Written exam

CONDITIONS FOR PASSING CLASSES:

Passing a written test of knowledge and skills and getting positive evaluation of inter-course homework and group tasks. A prerequisite for passing the course is also attendance in class and credit for any absences.

1 ECTS point = 30 hours students work (contact + self study)

TYPES OF CLASSES	HOURS
1. Contact classes	30
2. Students' preparations of the presentations	0
3. Self study as preparation to the written exam	20
4. Self study as reading text prepared by the teacher	10
Total = 60 hours- ECTS points 2	

Author of the class card:	Name, surname and email
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