A COURSE SYLLABUS – DOCTORAL SCHOOL

REGARDING THE QUALIFICATION CYCLE FROM 2022 TO 2026

GENERAL INFORMATION ABOUT COURSE	
Course title	Kinanthropometry in research
Name of the unit running the course	Doctoral School at the University of Rzeszów
Type of course *(obligatory, optional)*	*Optional*
Year and semester of studies	1st year 2nd semester
Discipline	Physical Culture Sciences
Language of Course	Polish / English
Name of Course coordinator	Dr Piotr Matłosz
Name of Course lecturer	Dr Piotr Matłosz
Prerequisites	Anatomy, Physiology

BRIEF DESCRIPTION OF COURSE
(100-200 words)

The course syllabus is based on international standards of anthropometric measurements developed by ISAK (The International Society for the Advancement of Kinanthropometry). The anthropometric measurement protocol based on these standards is recognised by the international scientific and sports community as ensuring the highest level of accuracy and repeatability of measurements. The instructor of the course has the international accreditation ISAK Level 3 - Instructor anthropometrist.

Kinanthropometry is an emerging scientific specialization concerned with the application of measurement to appraise human size, shape, proportion, composition, maturation and gross function. It is a basic discipline for problem-solving in matters related to growth, exercise, performance and nutrition in particular stages of the ontogenesis.

The aim of the course is to provide knowledge and practical skills allowing for putting the individual person into objective focus and provides a clear appraisal of his or her structural status at any given time, or, more importantly, in case of athletes - provides for quantification of differential growth and training influences.

The doctoral student will be equipped with the knowledge and skills allowing to:

- correct location of the most important anthropometric points,
- proper use of anthropometric instruments
- performance of selected measurements in accordance with a protocol accredited by ISAK

The content of the course also includes issues related to: palpation anatomy of the musculoskeletal system, assessment of body composition and somatotype, relationships between diet, physical activity and health, as well as the use of anthropometric indicators to assess physical development and the occurrence of risk factors for lifestyle diseases.

COURSE LEARNING OUTCOMES AND METHODS OF EVALUATING LEARNING OUTCOMES

Learning outcome	The description of the learning outcome defined for the course	Relation to the degree programme outcomes (symbol)	Learning Format (Lectures, classes,...)	Method of assessment of learning outcomes (e.g. test, oral exam, written exam, project,...)

Knowledge (no.)	**(Knows and understands)**			
1	Areas of application of anthropometric data in scientific research and R+D projects and development works in various scientific disciplines, with particular emphasis on the field of medical sciences and health sciences.	P8S_WG1	Lab	Oral Exam
2	Directions of development of anthropometry in the context of scientific research and challenges related to the development of new technologies, including 3D imaging and the use of artificial intelligence in the interpretation of data obtained by various methods	P8S_WG2	Lab	Oral Exam
3	Universal nomenclature related to anthropometric measure-ments, used by researchers around the world (i.e. names of anthropometric points, research instruments, etc.)	P8S_WG3	Lab	Oral Exam
4	The areas of application of anthropometric data in the identification of risk factors and the diagnosis of lifestyle diseases.	P8S_WK1	Lab	Oral Exam
Skills (no.)	**(Able to)**			
1	Use knowledge in the field of anatomy, physiology, anthropology and ergonomics to creatively identify and innovatively solve research tasks that take into account the measurements of the human body, in particular: • define the aim and subject of scientific research, formulate a research hypothesis, • correctly apply research methods, techniques and tools based on protocols recognized in the scientific literature • correctly draw conclusions based on the obtained results of scientific research	P8S_UW1	Lab	Project
2	Based on current scientific reports and own knowledge and skills in the field of anthropometry, he/she is able to	P8S_UW2	Lab	Project

	plan and conduct a research project using anthropometric methods.			
3	Based on the results of anthropometric measurements, he/she is able to calculate selected anthropometric indicators and analyze them based on a critical assessment of current reports from the scientific literature.	P8S_UW3	Lab	Project
4	Use a foreign language at the B2 level of the Common European Framework of Reference for Languages (CEFR) to a degree that allows for participation in the international scientific and professional environment.	P8S_UK6	Lab	Oral Exam
Social competence (no.)	**(Ready to)**			
1	Recognize and explain the importance of correct measurement and interpre-tation of anthropometric data in various areas of human life	P8S_KK3	Lab	Oral Exam

LEARNING FORMAT – NUMBER OF HOURS

Semester (no.)	Lectures	Seminars	Conversatorium	Internships	others	ECTS
2	-	-	15	-	-	2

METHODS OF INSTRUCTION

Conversatorium/ Instruction/ group work/ project

COURSE CONTENT

1) Anthropometric points - correct location and marking of anthropometric points necessary to perform the most important anthropometric measurements
2) Anthropometric instruments - correct technique of work with tools used in kinantropometry. Basic methods of anthropometric tools calibration
3) The procedure, methodology and correct technique for taking basic body measurements
4) Procedure, methodology and correct technique for measuring body circumferences
5) Procedure, methodology and correct technique for measuring segmental lengths and body heights
6) Procedure, methodology and correct technique for measuring the width and depth of the body
7) Procedure, methodology and correct technique of skinfold thickness measurements
8) Methodology, meaning and method of calculating the value of technical error of measurement TEM (technical error of measurement)
9) Selected methods of body composition assessment.
10) Determination of the somatotype using the Heath-Carter anthropometric method and analysis of the results
11) Application of anthropometry in diagnosis and health prevention
12) Basic ethical issues related to the measurement of the human body
13) Application of anthropometry in assessing secular trends
14) Anthropometry in ergonomics
15) Large-scale anthropometric research projects

COURSE ASSESSMENT CRITERIA

The points obtained in the oral exam and the practical project are converted into percentages corresponding to the grades:

1) below 50% - 2.0
2) 51% - 60% - 3.0
3) 61% - 70% - 3.5
4) 71% - 80% - 4.0
5) 81% - 90% - 4,5
6) 91% - 100% - 5

The condition for admission to the exam is obtaining a positive grade from the project

TOTAL PhD STUDENT WORKLOAD REQUIRED TO ACHIEVE THE INTENDED LEARNING OUTCOMES – NUMBER OF HOURS AND ECTS CREDITS

Activity	Number of hours
Scheduled course contact hours	15
Other contact hours involving the teacher (consultation hours, examinations)	10
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	30
Total number of hours	55
Total number of ECTS credits	2

INSTRUCTIONAL MATERIALS

Compulsory literature:	1. Marfell-Jones, M., Olds, T., Stewart, A. and Carter, L., *International standards for anthropometric assessment (2006).* ISAK: Potchefstroom, South Africa) 2. Norton K. & Olds T. (1996) Anthropometrica: A Textbook of Body Measurement for Sports and Health Courses. UNSW Press.
Complementary literature:	1. Kasper AM, Langan-Evans C, Hudson JF, Brownlee TE, Harper LD, Naughton RJ, Morton JP, Close GL. Come Back Skinfolds, All Is Forgiven: A Narrative Review of the Efficacy of Common Body Composition Methods in Applied Sports Practice. Nutrients. 2021; 13(4):1075. https://doi.org/10.3390/nu13041075 2. Martin A. D., Ross W. D., Drinkwater D. T. and Clarys J. P. (1985). Prediction of body fat by skinfold calliper: assumptions and cadaver evidence. International Journal of Obesity; 9: 31–39. 3. Hume, P. A., Kerr, D. A., & Ackland, T. R. (Eds.). (2018). Best practice protocols for physique assessment in sport (p. 61). Singapore:: Springer.