COURSE DESCRIPTION SHEET (SYLLABUS)

AT THE DOCTORAL SCHOOL AT THE KAZIMIERZ WIELKI UNIVERSITY

COURSE DESCRIPTION	
Course	**Researcher's workshop I**
Type of classes (basic/specialist)	specialist classes
Field of science/art	natural sciences
Discipline of science/art	**earth and related environmental sciences**
Academic year	**2023/2024**
Title/academic degree First name and last name of academic teacher	**dr hab. Michał Habel**
Number of hours	**30**
Type of classes	**laboratory**
Form of assessment	**credit with grade**
Language of course	**english**
Framework learning outcomes (8 PRK)	• knows and understands the world's achievements relating to: - theoretical foundations - general and selected specific issues of the academic or artistic discipline at a level enabling the revision of existing paradigms • knows and understands the main scientific developments in the academic or artistic disciplines essential to the study programme • knows and understands the methodology of scientific research • knows and understands the rules for dissemination of scientific results, including in open access mode • knows and understands the economic, legal and other essential conditions of conducting scientific research • is able to take advantage of knowledge from different academic or artistic fields to creatively identify, formulate and innovatively solve complex problems or perform research activities, especially: - to define the aim and subject of the research, formulate a research hypothesis - develop research methods, techniques and tools and use them creatively - draw conclusions on the basis of research results • is able to transfer the results of research studies to the economic and social spheres • is able to communicate on specialist topics to the extent that they enable an active participation in the international scientific community • is able to participate in a scientific discourse • is ready for critical evaluation of the achievements of a given scientific or artistic discipline • is ready for recognising the importance of knowledge in solving cognitive and practical problems • is ready for uphold and develop the ethos of the research and artistic communities, including conducting research in an independent manner

DETAILED DESCRIPTION OF CLASSES

Particular learning outcomes	**Methods of verifications of learning outcomes**
1. PhD student has a basic knowledge of the subject specificity and methodology of earth and environmental sciences 2. PhD student has structured general knowledge of the methodology of earth and environmental sciences and sciences supporting research in the aquatic environment	

3. PhD student knows the basic research methods used in modern research on fluvial geomorphology, GIS and remote sensing 4. PhD student can obtain knowledge from scientific sources and literature and can improve his research skills 5. PhD student formulates and criticizes theses on topics related to the basics of the scientist's workshop based on the literature on the subject and sources 6. PhD student is able to conduct searches in Internet resources and obtain information using databases and electronic tools	active participation in classes, presentation at a conference or seminar with the audience

PROGRAM CONTENT ACCOMPLISHED DURNING CLASSES

Introduction of modelling water environmental problems.

Geographical information systems (GIS) - capture data,

Simulation modelling for managing the environment.

Implementing the critical thinking needed for the practical applications of GIS systems and their analytical outputs.

Coupling of GIS and simulation modeling

Space-time dynamics and decision-support systems.

Didactic methods and educational techniques	Presentation of good practices, document analysis, discussion
Evaluation criteria	Attendance 25 points. (each absence -5 points) Activity during classes 25 points. Written test 50 points. Grading scale: 3.0: 60-65 points; 3.5: 66-75 points, 4.0: 76-85 points; 4.5: 86-95 points; 5.0: 96-100 points
The form and conditions of assessment (the form of verification of learning outcomes)	Activity in classes, practical test
Literature	Brimicombe, A. (2009). *GIS, environmental modeling and engineering*. CRC Press. Slocum, T. A., McMaster, R. B., Kessler, F. C., & Howard, H. H. (2022). *Thematic cartography and geovisualization*. CRC Press. Fisher, P., & Unwin, D. (2001). *Virtual reality in geography*. CRC Press.