

**DESCRIPTION OF TRAINING PROGRAMME
FOT THE DOCTORAL SCHOOL AT THE KAZIMIERZ WIELKI UNIVERSITY**

INFORMATION ON COURSE	
Course	Research methodology
Type of classes	specialist classes
Academic year	2020/2021
Field of science	Engineering and technology
Discipline of science	mechanical engineering
Class instructor	prof. dr hab. Mariusz Kaczmarek
Number of hours	30
Forme of classes	lecture
Pass rules	exam
Language of lecture	english
Framework learning outcomes (8 PRK)	<ul style="list-style-type: none"> • knows and understands research methodology • knows and understands to such an extent that is possible to revise existing paradigms – world heritage, including theoretical foundations, general issues and selected specific issues – specific to a scientific or artistic discipline • knows and understands the main trends in the development of the scientific or artistic disciplines covered in the curricula
DETAILED DESCRIPTION OF CLASSES	
Particular learning outcomes	<ul style="list-style-type: none"> • knows the methods of acquiring and disseminating knowledge used in scientific research, • is aware of the available experimental, mathematical and IT tools useful in solving research tasks in the discipline, • knows the methods of data acquisition, visualization of results, • knows various forms of disseminating and exchanging scientific information, important in the discipline, • knows the rules of ethics in research work,
Program content implemented during classes	
<p>The concept and essence of scientific research; Fields and disciplines of science; Characteristics of research problems; Inference methods; Types of research methods: observations, experiments, document research, survey, statistical methods, computer simulation, heuristic methods; Measurement in scientific research, measurement uncertainty; Mathematics and IT tools in science; Identification of models and parameters; Parameter identification uncertainty; Types, characteristics and tools for writing scientific papers; Analysis of examples. Ethics of research work.</p>	

Didactic methods	Course lecture, discussion methods, methods of working with sources
Assessment methods and criteria	Assessment of students' activity, assessment of the final written work. Grading scale 2-5.
Passing rules	Exam
Basic literature	C. R. Kothari, Research Methodology. Methods and Techniques, 2004, https://dinus.ac.id/repository/docs/ajar/Kothari_-_Research_Methodology_Methods_and_Techniques_-_2004.pdf
Supplementary literature	Silverman D., Prowadzenie badań jakościowych, Wydawnictwo Naukowe PWN, Warszawa 2013.

ATTACHMENT FOR DESCRIPTION OF TRAINING PROGRAMME

Course	Research methodology
Forme of classes	stationary / manual / mixed model*
Methods and techniques distance learning	MS TEAMS – Research methodology
Form and date of individual consultations *	Kopernika 1, 209B - Tuesday 10:00-12:00 or MsTeams directly after the course
Form of passing of assessment / examination	1. orally / written 2. manual / stationary

