

**DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

SUPERVISOR DECLARING/CONDUCTING COURSE: Prof. dr hab. inż. Malgorzata Kotulska
DEPARTMENT: FACULTY OF FUNDAMENTAL PROBLEMS OF TECHNOLOGY
SCIENTIFIC DISCIPLINE:

COURSE CARD

Course name in Polish: Warsztat badacza IB
Course name in English: Research skills
Course language: English
University-wide general course type*:
The course is intended for all PhD students: YES / NO
1) **BASIC COURSE**
2) **SPECIALIST COURSE**
3) **SEMINAR**
4) **HUMANISTIC COURSE**
5) **LANGUAGE**
6) Research skills

Subject code: IBQ100201W

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)				30
Grading				Presentation, report, activity

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Research skills at the MSc level
2. Pre-defined research topic of PhD

COURSE OBJECTIVES

- C1 To gain basic knowledge on academic career.
- C2 To gain skills related to searching, evaluating and organizing information from scientific databases.
- C3 To gain skills related to methodology of research work.
- C4 To gain skills required to prepare a presentation of a scientific work.
- C5 To gain skills required to write a scientific publication.
- C6 To gain skills required to prepare applications for research funding and scholarships from various sources of funding.
- C7 To gain skills of scientific cooperation in research teams, including international cooperation.
- C8 To gain basic knowledge on knowledge transfer and commercialization of research results.

DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

PROGRAM CONTENTS

Form of classes		Number of hours
1.	Operation of doctoral school, organizational issues, incentive scholarships, governmental and university legal acts.	2
2.	Choosing an academic career – how to successfully set it in motion and pursue: selecting an appropriate PhD project, setting up your optimal working mode, and environment, finding inspiration and encouragement, sustaining motivation. What to avoid.	2
3.	How successfully unfold your PhD project. Basic tools for knowledge search, scientific databases, collaborations.	2
4.	Conferences and workshops – where to go and how to obtain a funding, writing a successful abstract.	2
5.	Conferences and workshops – preparing an exciting presentation.	2
6.	Conferences and workshops – delivering a successful presentation.	2
7.	Where to publish your results – scientific journals and conference proceedings. Impact factors and ministerial scores – what do they mean? Funding schemes – subscription and open access. Editorial process – from manuscript to the final article.	2
8.	How to write a good scientific article and how to write a successful PhD thesis.	2
9.	How to write a good scientific article – practice.	2
10.	Disseminating results in a less formal manner – blogs, podcasts, popular science journals.	2
11.	Money. Where to obtain funding and how it works. Available resources and their availability.	2
12.	Writing a successful grant proposal.	2
13.	Team projects. How to successfully and peacefully participate or lead it.	
14.	Scholarships and internships – long and short term. When, where and for how long? What is available for a young scientist and how to apply.	2
15.	Research and teaching. How to integrate teaching into your scientific projects still being a successful teacher.	2
Total hours		30

TEACHING TOOLS USED
N1. Lecture N2. Presentation N3. Discussion N4. Self-work

ACHIEVED SUBJECT LEARNING OUTCOMES		
Type of learning outcome	Code of learning outcome	Assessment of learning outcome
Knowledge	P8S_WK	Presentation, participation in discussion
Skills	P8S_UK	Presentation, participation in discussion
Skills	P8S_UO	Report, participation in discussion
Social competence	P8S_KK	Presentation, report, participation in discussion
Social competence	P8S_KO	Report, participation in discussion

**DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

- [1] Roel Snieder, Ken Lerner, "A Guide for Graduate Students and Their Mentors", Cambridge University Press 2009
- [2] Robert E. Berger, "A Scientific Approach to Writing for Engineers and Scientists", Wiley-IEEE Press 2014
- [3] Joshua Schimel, "Writing Science: How to Write Papers That Get Cited and Proposals That Get Funded"
- [4] N. Patel, "Technical Presentations", IEEE Books
(<https://www.scribd.com/document/156325110/Technical-Presentations-Book-1-Strategy-Preparation-and-Planning>)

SECONDARY LITERATURE:

- [5] Legal acts
- [6] Literature related to a particular scientific discipline
- [7] Regulations of research funding institutions

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

Prof. dr hab. inż. Małgorzata Kotulska (malgorzata.kotulska@pwr.edu.pl)