DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

SUPERVISOR/TEAM/ DECLARING/CONDUCTING COURSE: Łukasz Sadowski
DEPARTMENT: Civil Engineering Department
SCIENTIFIC DISCIPLINE: Civil Engineering and Transport

COURSE CARD

Course name in Polish: Warsztat badacza ILT

Course name in English: Research skills ILT

Course language Polish ~~/ English~~

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: ILQ100183W

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)				30
Grading				Delivering a presentation, preparation of final report, activity in group discussion

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Having a basic knowledge of a given discipline at the second level of studies.
2. Having a predefined research topic related to realized PhD thesis.

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COURSE OBJECTIVES
C1. To acquaint with the principles of operation of the doctoral school, basic legal acts, scientific fields and disciplines, the path of the academic career and the principles of promotion C2. To gain skills of searching for scientific knowledge. C3. To gain skills related to related to methodology and conducting scientific research. C4. To gain skills required to prepare the presentation of the results of scientific research including copyright, public presentations and presentation of academic achievements. C5. To gain skills necessary to prepare and write scientific articles. C6. To gain skills required to acquire funds for research and to prepare applications for research funding. C7. To gain skills of scientific cooperation in research teams, including international ones. C8. Acquainting with the basic principles of ethics in scientific research. C9. To gain basic knowledge in the field of knowledge transfer and commercialization of research results.

Form of classes – mixed forms (mix)		Number of hours
Mix1	Academic career (principles of a doctoral school, basic legal acts, scientific fields and disciplines, academic career path, principles of promotion). Lecture and group discussion.	2
Mix2	Searching for scientific knowledge. Lecture and group discussion.	2
Mix3	Methodology and conducting scientific research. Lecture and group discussion.	2
Mix4	Presentation of the results of scientific research, copyrights in presentations, public presentations and presentation of academic achievements. Lecture and group discussion.	4
Mix5	Preparation and writing of scientific articles. Lecture and group discussion.	4
Mix6	Acquiring funds for research and preparation of applications for research funding. Lecture and group discussion.	2
Mix7	Scientific cooperation in research teams, including international ones. Lecture and group discussion.	2
Mix8	Ethics in scientific research. Lecture and group discussion.	2
Mix9	Knowledge transfer and commercialization of research results. Lecture and group discussion.	2
Mix10	Delivering a multimedia presentation on a selected topic related to the planned PhD thesis. Seminar.	6
Mix11	Preparation of final report. Own work.	-
Mix12	Review of final report. Group discussion.	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, activity in group discussion
Skills	**P8S_UK**	Presentation, activity in group discussion
Skills	**P8S_UO**	Final report, activity in group discussion
Social competence	**P8S_KK**	Presentation, final report, activity in group discussion
Social competence	**P8S_KO**	Final report, activity in group discussion

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Berger, R. (2014). A Scientific Approach to Writing for Engineers and Scientists. Wiley-IEEE Press.
[2] Kraicer, J. (1997). The art of grantsmanship. Toronto: University of Toronto.
[3] Załącznik do uchwały Nr 2/2020 Zgromadzenia Ogólnego PAN z dnia 25 czerwca 2020 r. "Kodeks Etyki Pracownika Naukowego", Wydanie III

SECONDARY LITERATURE:

[4] Legal acts
[5] Search tools, e.g., http://scholar.google.pl/, https://www.researchgate.net, https://www.scopus.com, http://www.sciencedirect.com/, http://www.link.springer.com/
[6] Databases of patent offices
[7] Literature related to a particular scientific discipline
[8] Regulations of research funding institutions (MNiSW, NCN, NCBR, FNP)

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

Prof. of WUST Łukasz Sadowski, DSc, PhD, Eng. (Lukasz.Sadowski@pwr.edu.pl)