DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

SUPERVISOR/TEAM/ DECLARING/CONDUCTING COURSE: dr hab. inż. Marcin Sieńczyk, prof. uczelni
DEPARTMENT Chemistry

COURSE CARD

Course name in Polish: Między chemią a biologią
Course name in English: Between chemistry and biology
Course language Polish
University-wide general course type*: Yes
3) seminar in discipline or interdisciplinary: basic science

Subject code: NCQ100176S

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)	12		1	2
Grading	-		Oral presentation	Practical exercises
Number of ECTS points				

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Ability to work in group.
2. Willing to actively participate in the course.

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COURSE OBJECTIVES
C1 Introduction to the design thinking methodology.
C2 Applications of design thinking methodology in research.
C3 Practical application of design thinking methodology in project realization.

PROGRAM CONTENTS

Form of classes – lecture (Lec)		Number of hours
Lec1	An intorduction to design thinking	2
Lec2	Practical application of design thinking methods. Steps of design thinking	4
Lec3	Empathy.	2
Lec4	Design and prototyping	2
Lec5	Innovation vs. creativity	2
	Total hours:	**12**

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Form of classes – foreign language course (Lng)		Number of hours
Lng1		
Lng2		
Lng3		
..		
	Total hours:	

Form of classes – seminar (Sem)		Number of hours
Sem1	Group design thinking-based project presentation	1
	Total hours:	1

Form of classes – mixed forms (mix)		Number of hours
Mix1	Design thinking in practice	2
	Total hours	2

TEACHING TOOLS USED
N1. Laptop with projector N2. Presentation N3. Paper and drawing tools. N4. Whiteboard and markers N5. Materials for creative design and prototyping.

ACHIEVED SUBJECT LEARNING OUTCOMES		
Type of learning outcome	Code of learning outcome	Assessment of learning outcome
Knowledge	**P8S_WG**	- student has a sound knowledge of basic subjects such as mathematics, physics, chemistry or others
Knowledge	**P8S_WG**	- has an advanced knowledge fundamental to a field relevant to his/her research, including the most advanced methods of research and verification of results achieved
Knowledge	**P8S_WG**	- has basic knowledge of design thinking
Knowledge	**P8S_WG**	- has knowledge at an advanced level of discipline and subject matter relevant to the field of research carried out, including the most recent research findings and scientific achievements
Skills	**P8S_UK**	- is able to prepare and present an oral and multimedia presentation on the implementation of the research and to lead a discussion on the presented presentation.
Skills	**P8S_UK**	- shows an active attitude in preparing a scientific publication in the form of a book or in the form of a scientific publication for printing in a peer-reviewed scientific journal listed in among scientific journals published by the Minister of Science and Higher Education, or in a peer-reviewed report on an international scientific conference or a public presentation of an artistic work

Skills	**P8S_UK**	- is able to prepare and make a public presentation of the results of research work, including a doctoral dissertation prepared under the supervision of a supervisor or supervisors, or an assistant supervisor and supervisor
Skills	**P8S_UK**	- participates in innovative research and development projects
Skills	**P8S_UK**	- works in a group on project realization
Skills	**P8S_UK**	- applies design thinking methodology in research
Social competence	**P8S_KO**	- has an acknowledged need to develop contacts between the scientific community and the socio-economic environment
Social competence	**P8S_KR**	- perceives the creativity of the pupil-master relationship, the creation of conditions for conducting research, and the legitimacy of the requirement of direct participation of academic teachers, including a promoter or promoters, or a promoter and a supporting promoter in the implementation of curricula and individual research plans
Social competence	**P8U_K**	- is able to understand the needs of other team members
Social competence	**P8U_K**	- applies empathy in creative design
Social competence	**P8U_K**	- understands and considers the needs of others in realization of her/his research activities

PRIMARY AND SECONDARY LITERATURE
PRIMARY LITERATURE: [1] Tim Brown, Change by design, ed. Harper Collins Publ. USA, 2009 **SECONDARY LITERATURE:** [1] Beverly Rudkin Ingle, Design thinking dla przedsiębiorców i małych firm. Potęga myślenia projektowego w codziennej pracy, wyd. Helion, 2015 [2] Koh, J.H.L., Chai, C.S., Wong, B., Hong, H.-Y., Design Thinking for Education Conceptions and Applications in Teaching and Learning, wyd. Springer, 2015
SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)
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