DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

SUPERVISOR DECLARING/CONDUCTING COURSE: Prof. dr hab. inż. Andrzej Miniewicz
DEPARTMENT: Chemical Department
SCIENTIFIC DISCIPLINE: Chemical Engineering, Chemical Sciences

COURSE CARD

Course name in Polish: Seminarium interdyscyplinarne – w zakresie materiałów funkcjonalnych –właściwości fizykochemiczne i mechaniczne
Course name in English: **Interdisciplinary seminar on functional materials – physciochemical and mechanical properties**
Course language: polish
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**~~

Subject code: NCQ100114S

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)			15	
Grading	Exam	Exam	Oral presentation	Exam, inspection, evaluation classes
Number of ECTS points			0	

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge on master degree level of chemical and physical sciences

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COURSE OBJECTIVES

C1 Mastering of skills in preparation and oral presentation of seminar via delivering multimedia presentation in English (preferably) language or Polis language
C2 Acquiring advanced knowledge in the branch of science directly related to the field of PhD candidate research, including the most recent scientific achievements described in literature
C3 Development of skills to conduct a scientific discussion in a group of PhD candidates in English or Polish

PROGRAM CONTENTS

Form of classes		Number of hours
Sem 1	Introduction to subjects of seminar. Presentation of general themes and their choice by PhD candidates. Presentation of conditions of crediting of the seminar. Presentation of hints how to prepare good presentation and how to deliver it to the audience.	2
Sem 2	Individual oral seminars of PhD candidates followed by scientific discussion of all listeners, comments of seminar chairman with some critical suggestions of further seminar improvement.	13
	Total hours	15

TEACHING TOOLS USED

N1. Methods of audio-visual presentations
N2. Scientific discussion with members of the group on the subject related to the seminars

ACHIEVED SUBJECT LEARNING OUTCOMES

Type of learning outcome	Code of learning outcome	Assessment of learning outcome
Knowledge	P8S_WG	Depth of understanding of the subject and participation in discussion
Knowledge		
…		
Skills	P8S_UW, P8S_UK	Individual evaluation of oral seminar in the form of presentation
Skills		
…		
Social competences	P8S_KKK	Evaluation of PhD candidates activity during seminar cycle

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Introduction to Nanoscience and Nanotechnology, G. L. Hornyak, J. Dutta, H. F. Tibbals, A. K. Rao, CRC Press (2008)
[2] The Physics and Chemistry of Nanosolids, F.J. Owens, C.P. Poole Jr.,Wiley-Interscience (2008)
[3] Introduction to Nanotechnology, C.P. Poole Jr., F.J. Owens, Wiley-Interscience 2003

SECONDARY LITERATURE:

[1] Current publications from scientific journals
[2] Materials Today
[3] Advanced Materials
[4] Nature
[5] Science

SECONDARY LITERATURE:

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

Prof. dr hab. eng. **ANDRZEJ MINIEWICZ**, e-mail: andrzej.miniewicz@pwr.edu.pl,