



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Specialist pre-diploma seminar

Course

Field of study

Technical Physics

Area of study (specialization)

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

30

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

prof. dr hab. Alina Dudkowiak

Responsible for the course/lecturer:

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Faculty of Materials Engineering and Technical
Physics

Piotrowo 3, 60-965 Poznań

Prerequisites

Knowledge of experimental physics and basic specialist knowledge of nanotechnology and functional materials.

Ability to solve simple physical problems based on acquired knowledge, ability to obtain information from indicated sources.

Understanding the need to expand your competences, readiness to cooperate within a team.

Course objective

1. Providing students specializing in the field of nanotechnology of inorganic and organic materials and functional materials with detailed knowledge of the materials tested. Introducing principles of operation



of specialized apparatus for the characterization of nanostructures, ultra-thin functional layers and single crystals, and the methods of analyzing obtained results.

2. Developing students' ability to analyze results, prepare research reports and present results to audiences as well as in panel discussions.

3. Shaping students' teamwork skills.

Course-related learning outcomes

Knowledge

1. Student has knowledge of physical phenomena, production and characterization of multifunctional materials. [K2_W04]

2. Student knows advanced methods of physics and physicochemistry applicable in modern technologies. [K2_W02]

3. Student knows the state of knowledge in the field of their specialization and is aware of the latest trends in technology and materials science. [K2_W12, K2_W13]

Skills

1. Student is able, on the basis of literature, to independently make preliminary analysis of the results of laboratory measurements and draw conclusions. [K2_U01, K2_U02, K2_U06]

2. Student is able to prepare an oral presentation in Polish on their own and efficiently present it with well-documented and interpreted measurement results. [K2_U03, K2_U04]

Social competences

1. Student can work independently and in a team on a given task, shows responsibility in this work. [K2_K01]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

W02, W04, W12, W13	Assessment of the oral presentation with	50.1%-70.0% (3)
	the use of computer software and	70.1%-90.0% (4)
	assessment of answers on questions related to presentation	from 90.1% (5)
U01, U02, U03, U04, U06	Assessment of the oral presentation with	50.1%-70.0% (3)
	the use of computer software and	70.1%-90.0% (4)
	assessment of answers on questions related to presentation	from 90.1% (5)
K01	Assessment of student's activity in discussions during seminar	50.1%-70.0% (3)
	classes and their involvement in preparation of the presentation	70.1%-90.0% (4)
		from 90.1% (5)



Programme content

1. Principles of preparing master's theses.
2. Tips for preparing a presentation in Power Point and similar.
3. The current state of technology in the world.
4. Additional content depending on the subject of the completed master's thesis.

Teaching methods

a seminar, consultations on implemented projects, workshops - discussions on presented diploma projects

Bibliography

Basic

Selected individually by the student in accordance with the topic of their work.

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	74	3,0
Classes requiring direct contact with the teacher	34	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	40	2,0

¹ delete or add other activities as appropriate