



Fabrication and analysis of surface nanostructures I

Educational subject description sheet

Basic information

Study programme Fizyka (Physics of Advanced Materials for Energy Processing)		Didactic cycle 2023/24	
Speciality -		Subject code 04FENS.22S.03261.23	
Organizational unit Faculty of Physics		Lecture languages English	
Study level Second-cycle programme		Course type Elective	
Study form Full-time		Block specialty subjects	
Education profile General academic			
Subject coordinator	Maciej Wiesner		
Lecturer	Maciej Wiesner		
Period Semester 2	Activities and hours • Laboratories: 15, Graded credit	Number of ECTS points 2	

Goals

Code	Goal
C1	Familiarization with selected techniques for nanostructures' fabrication.

Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
Knowledge - Student:			

Code	Outcomes in terms of	Learning outcomes	Examination methods
W1	Will learn how to operate a scanning electron microscope and an e-beam lithography unit.	FEN_K2_W01	Project
Skills - Student:			
U1	Will learn the basics of an electron beam lithography technique.	FEN_K2_U01	Project

Study content

No.	Course content	Subject learning outcomes	Activities
1.	Basics of the electron beam lithography.	W1, U1	Laboratories

Additional information

Activities	Teaching and learning methods and activities
Laboratories	Laboratory method

Activities	Credit conditions
Laboratories	Points P : P> 90% grade 5 80%<P<90% grade 4 60%<P<80% grade 3 P<60% grade 2 (failed)

Literature

Obligatory

1. Copies of necessary literature will be provided during meetings.

Calculation of ECTS points

Activities	Activity hours*
Laboratories	15
Preparation for classes	10
Preparation of a project	30
Student workload	Hours 55
Number of ECTS points	ECTS 2

* academic hour = 45 minutes

Efekty uczenia się dla kierunku

Kod	Treść
FEN_K2_U01	The graduate can use their knowledge to formulate and solve complex and unusual problems in the field of physical sciences; select and apply appropriate methods and tools necessary to solve a given problem (including advanced IT techniques), as well as adapt existing methods and tools or develop completely new ones
FEN_K2_W01	The graduate knows and understands in-depth selected facts, phenomena, concepts and theories specific to physics and complex relationships between them (constituting advanced general knowledge in the field of physical sciences and representing both key and other selected issues in the field of advanced detailed knowledge in this discipline)