



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Specialist Master's Laboratory [S2FT2>PrSM]

Course

Field of study

Technical Physics

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

full-time

Requirements

elective

Number of hours

Lecture

0

Laboratory classes

115

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

7,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge in the fields of physics, mechanics, chemistry, electrical engineering, materials science, nanotechnology, optoelectronics, development of research equipment, ability to acquire, use and process new knowledge.

Course objective

To acquire skills necessary for independent solving of engineering problems from the fields of physics, nanotechnology, computational physics, and construction of research equipment. To gain skills in solving problems in the field of technical physics, connecting physical and engineering areas, developing skills in designing and testing engineering solutions, selecting appropriate materials and equipment to solve research and engineering problems.

Course-related learning outcomes

Knowledge:

After completing the course, the student:

Has organized knowledge about physical phenomena of functional materials and phenomena in the field of classical experimental physics

Knows the current state of knowledge in the field of engineering work being performed and is aware of the latest trends in the field

Skills:

The student is able to independently solve problems that are the subject of the engineering work

The student is able to plan and conduct research in the area of engineering and technical physics

Social competences:

The student is aware of the need for continuous improvement and raising their professional competencies

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

- evaluation of the student's activity within the performed work
- evaluation of skills and mastery of knowledge necessary for completing the work,
- Evaluation of the student's work consistency
- Assessment of the content and form of the prepared project solutions

Programme content

The subject of the workshop is the implementation of program content in accordance with the specific tasks provided in the topic sheet of the specialized workshop.

Course topics

Literature review related to the topic of the specialized workshop

Development of the project concept and selection of necessary engineering and instrumental tools

Familiarization with the equipment used

Development and analysis of the results obtained during the specialized workshop

Teaching methods

Solving engineering problems using appropriate instrumental, engineering, and software tools, as well as developing and analyzing the results of one's work.

Bibliography

Basic:

Individually selected, according to the topic of the thesis and performed research tasks.

Additional:

Individually selected, according to the topic of the thesis and performed research tasks.

Breakdown of average student's workload

| | Hours | ECTS |
|---|-------|------|
| Total workload | 175 | 7,00 |
| Classes requiring direct contact with the teacher | 115 | 5,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 60 | 2,00 |