



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Specialist Laboratory

### Course

Field of study

Education in Technology and Informatics

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)

75

Tutorials

Projects/seminars

### Number of credit points

7

### Lecturers

Responsible for the course/lecturer:

dr hab. Dobrosława Kasprowicz

dobroslaw.kasprowicz@put.poznan.pl

Responsible for the course/lecturer:

Faculty of Material Science and Technical

Physics

Piotrowo 3, 60-696 Poznań

### Prerequisites

Knowledge of physics, computer science and mathematics needed in the technical area, useful for formulating and solving tasks in the field of technical and IT education; knows the basic methods, techniques and tools used to solve complex engineering tasks in a selected area of physics, computer science and technology; has knowledge of computer-aided technical education. Can use the acquired knowledge to describe processes, create models and write algorithms; is able to obtain information from literature, databases and other sources (in the mother tongue and in English). Acts in accordance with the principles of professional ethics; is responsible for the reliability of the obtained results and their interpretation; understands the need and knows the possibilities of continuous updating and complements knowledge.



### Course objective

To acquaint students with the basic measurement methods and techniques used in the supervisor's research studio, which will be used in the research leading to the implementation of the thesis. Performing preliminary research, which is then continued during the implementation of the thesis. The specialist laboratory ends with the editing of the temporary work.

### Course-related learning outcomes

#### Knowledge

1. has detailed knowledge of physics, materials science and computer science needed to formulate and solve detailed tasks related to the thesis [K2\_W01], [K2\_W11], [K2\_W14].
2. has knowledge of selected issues in physics, materials science and computer science that are used in modern technologies [K2\_W14], [K2\_W15], [K2\_W16].

#### Skills

1. has the ability to self-educate and can interpret scientific texts [K2\_U02], [K2\_U03].
2. can plan and carry out experiments with the use of selected research methods, interpret the obtained results and draw conclusions [K2\_U09], [K2\_U10], [K2\_U11], [K2\_U12], [K2\_U21].
3. is able to prepare and edit in the mother tongue a thesis on a detailed issue related to the thesis [K2\_U01], [K2\_U02], [K2\_U03], [K2\_U04], [K2\_U05].

#### Social competences

1. acts in accordance with the principles of professional ethics; is responsible for the reliability of the obtained results and their interpretation [K2\_K02].
2. understands the need and knows the possibilities of continuous updating and complements the knowledge and the need to improve professional and social competences; [K2\_K01], [K2\_K04].

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

| Effect  | Form of evaluation  | Evaluation criteria education |
|---------|---|-------------------------------|
| W01-W02 | Assessment of the individual work of the master's student in the laboratory | 50.1% -70.0% (3)              |
|         | specialist and evaluation of the preparation of results                     | 70.1% -90.0% (4)              |
|         | and editing the transitional work.  | from 90.1% (5)                |
| U01-U03 | Assessment of the individual master's work in the laboratory                | 50.1% -70.0% (3)              |
|         | specialist and evaluation of the preparation of results                     | 70.1% -90.0% (4)              |
|         | and editing the transitional work.  | from 90.1% (5)                |
| K01-K02 | Assessment of the individual work of the master's student in the laboratory | 50.1% -70.0% (3)              |



specialist and evaluation of the preparation of results 70.1% -90.0% (4)  
and editing the transitional work. from 90.1% (5)

### Programme content

Classes conducted under the supervision of the supervisor and the direct supervisor of the master's degree in the supervisor's research studio. The classes are devoted to introducing the master's degree to the methodology of research work, mastering the theoretical foundations and experimental methods that will be used in research carried out during the implementation of the master's thesis.

### Teaching methods

Laboratory exercises: practical exercises, performing experiments, discussion, team work.

### Bibliography

Basic

1. Scientific literature indicated by the supervisor of the thesis.

Additional

1. D.Halliday, R.Resnick, J.Walker, Podstawy fizyki, t. 1-5, PWN, Warszawa 2003.

2. J. Orear, Fizyka, t. 1-2, WNT, Warszawa1998.

### Breakdown of average student's workload

|   | Hours | ECTS |
|---|-------|------|
| Total workload  | 175   | 7,0  |
| Classes requiring direct contact with the teacher   | 77    |      |
| Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup> | 98    |      |

<sup>1</sup> delete or add other activities as appropriate