COURSE DESCRIPTION CARD - SYLLABUS

Course name
Specialist engineering laboratory [S1ETI2>LSInż]

Course

Field of study
Education in Technology and Informatics

Year/Semester
3/6

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture
0

Laboratory classes
30

Other
0

Tutorials
0

Projects/seminars
30

Number of credit points

4,00

Coordinators

Lecturers

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 computer education; knows the basic methods, techniques and tools used in solving complex engineering tasks from the selected area of physics, computer science and technology; has knowledge of computer-aided technical education. Is able to use the acquired knowledge to describe processes, create models and record algorithms; is able to obtain information from literature, databases and other sources (in native language and English). Acts in accordance with the principles of professional ethics; is responsible for the reliability of the results of his/her work and their interpretation; understands the need and knows the possibilities of continuous updating and supplementing knowledge.

Course objective

Familiarizing students with basic measurement methods and techniques used in the supervisor's research laboratory, which will be used in research leading to the implementation of the engineering thesis. Carrying out preliminary research, then continued in the implementation of the engineering thesis. The specialist laboratory ends with the editing of a transitional thesis.

Course-related learning outcomes

Knowledge:

W01 has detailed knowledge of physics, materials engineering and computer science needed to formulate and solve detailed tasks related to the diploma thesis
W02 has knowledge of selected issues of physics, materials engineering and computer science that are used in modern technologies

Skills:
has the ability to self-educate and is able to interpret scientific texts
is able to plan and conduct experiments using selected research methods, interpret the obtained results and draw conclusions
is able to prepare and edit a paper in the native language on a detailed issue from the scope of the dyploma thesis

Social competences:
the student is able to work on a given task, acts in accordance with the principles of professional ethics; is responsible for the reliability of the results of his/her work and their interpretation
understands the need and knows the possibilities of continuous updating and supplementing knowledge and the need to improve professional and social competences; is able to convey engineering and technical information, is aware of the importance of engineering activities

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Assessment of individual work of the engineer within the laboratory 50.1%-70.0% (3) specialist and assessment of preparation of results 70.1%-90.0% (4) and editing of the transitional paper. from 90.1% (5)

Programme content

Individually carried out in accordance with the topics of engineering works proposed by employees of the Faculty of Materials Engineering and Technical Physics and employees of other faculties of the Poznań University of Technology cooperating in the education process.

Course topics

The topics of engineering theses are proposed by employees of the Faculty of Materials Science and Technical Physics and employees of other faculties of the Poznań University of Technology cooperating in the educational process.

Teaching methods

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

Bibliography

Basic:
1. Scientific literature indicated by the master's thesis supervisor.

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	100	4,00
Classes requiring direct contact with the teacher	60	2,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	40	1,50