



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Fundamentals of electrochemical technology [S1IChiP1>PTEob]

Course

Field of study

Chemical and Process Engineering

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

15

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

1,00

Coordinators

dr hab. Piotr Krawczyk prof. PP
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Lecturers

Prerequisites

The student has an ordered knowledge of mathematics and physical chemistry. He has an ability to use the basic techniques in a laboratory scale. He can work individually and in teams and he also has a need for further education and enhance of professional and personal competences.

Course objective

The aim of the course is to broaden the knowledge as well as reinforcing the skills to plan and conduct electrochemical processes used in practice.

Course-related learning outcomes

Knowledge:

1. the knowledge in the field of basics of electrochemical processes –[k_w03, k_w04],
2. the knowledge in the field of various electrochemical technologies –[k_w13, k_w15],
3. the knowledge in the field of related fields –[k_w12].

Skills:

1. the student can use in practice theoretical knowledge gained earlier –[k_u08, k_u15, k_u16],

2. the student has the ability to selection of measurement techniques –[k_u01, k_u02],

Social competences:

1. the student understands the need for self-study and improvement of their professional competence –[k_k01],
2. student can act and cooperate in the group accepting different roles –[k_k04].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

Laboratory assessment on the basis of the current work during the laboratory and the written tests.

Programme content

1. Electrode materials used in electrochemical technologies.
2. Electrochemical techniques used in practice in electrochemical processes.
3. the types of electrochemical reactors,
4. The examples of electrochemical synthesis.

Course topics

Issues related to planning and conducting electrochemical processes used in practice.

Teaching methods

Laboratory exercises, explanation, didactic discussion.

Bibliography

Basic

1. A. Kiswa – Elektrochemia cz. I i II (Jonika i Elektrodyka) WNT, W-wa, 2001,
2. R. Dylewski, W. Gniot, M. Gonet, Elektrochemia przemysłowa, Wyd. Politechniki Śląskiej, 1999,
3. A. Czerwiński, Ogniwa, akumulatory, baterie, WNT, W-wa, 1999,
4. C. G. Zoski praca zb., Handbook of Electrochemistry, Elsevier, 2007,
5. A. Ciszewski, Technologia chemiczna. Procesy elektrochemiczne, Wyd. Politechniki Poznańskiej, 2008.

Additional

1. A.V. da Rosa, Fundamentals of Renewable Energy Processes, Elsevier/Academic Press, 1990,
2. H. Scholl, T. Błaszczuk, P. Krzyczmonik, Elektrochemia, Wyd. Uniwersytetu Łódzkiego, 1998.

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	15	0,50