



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Fundamentals of electrochemical technology [S11ChiP1>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 (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1,00

### Coordinators

dr hab. Piotr Krawczyk prof. PP  
piotr.krawczyk@put.poznan.pl

### 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.

### 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