



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Process chromatography [S2TCh2-PTiB>CP]

### Course

Field of study

Chemical Technology

Year/Semester

1/2

Area of study (specialization)

Technological Processes and Bioprocesses

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1,00

### Coordinators

dr hab. inż. Mariusz Sandomierski prof. PP  
mariusz.sandomierski@put.poznan.pl

### Lecturers

### Prerequisites

Basic physical, inorganic, organic and analytical chemistry on academic level; knowledge of mathematical tools used in chemical calculations; Can use basic laboratory techniques of separation and cleaning chemical compounds

### Course objective

Presentation of process applications of chromatographic techniques. Newest achievements and tendencies in process design. Basic of process chromatography dedicated to separation of biologically active substances.

### Course-related learning outcomes

Knowledge:

1. knowledge in the field of techniques, methods connected with the application of techniques in process chromatography

- [K\_W03, K\_W11]

2. can describe methods, techniques, tools and materials used for the solution of simple problems connected with process chromatography - [K\_W07, K\_W13]

#### Skills:

1. Student can select the proper technique for process chromatography - [K\_U01, K\_U08, K\_U09, K\_U14]
2. Student can discuss chromatographic problems in English. - [K\_U05, K\_U06]

#### Social competences:

1. Student understands the need to supplement her/his education and increasing professional competences. - [K\_K01]
2. Student has the awareness to obey the engineer ethic rules. - [K\_K03, K\_K05]
3. 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:

Final written control work. In case of stationary work 5-10 open questions. In case of on-line work through eKursu 5-10 open questions.

### Programme content

Issues concerning process applications of chromatographic techniques, newest achievements and tendencies in process design and including basic of process chromatography dedicated to separation of biologically active substances.

### Course topics

Combined techniques on process chromatography. Sample derivatization for chromatographic analysis. Miniaturization in process gas chromatography. Process applications of chromatography as a tool of separation of biologically active substances. Engineering of chromatographic installation. Modeling of chromatographic processes. Chromatography in biochemical industry.

### Teaching methods

lecture

### Bibliography

Basic:

1. Chromatografia procesowa, K. Kadlec, A. Voelkel, WPP, Poznań, 2011.
2. Zastosowanie metod chromatograficznych, K. Bielicka-Daszkiwicz, K. Milczewska, A. Voelkel, Wyd. PP, Poznań, 2005, 2010.

Additional:

L. Mondello, Comprehensive Chromatography in Combination with Mass Spectrometry, Wiley, Singapur, 2011.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	25	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)	10	0,50