



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Process chromatography

Course

Field of study

Chemical Technology

Area of study (specialization)

Organic technology

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

15

Laboratory classes

Tutorials

Projects/seminars

Other (e.g. online)

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

prof. dr hab. inż. Adam Voelkel

Responsible for the course/lecturer:

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

resentation 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

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-Daszkiewicz, 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	20	2,0
Classes requiring direct contact with the teacher	15	
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	5	

¹ delete or add other activities as appropriate