COURSE DESCRIPTION CARD - SYLLABUS

Course name
History of chemical science and industry [S2TCh2E-KiN>HNCiPC]

Course

Field of study
Chemical Technology

Year/Semester
2/3

Area of study (specialization)
Composites and Nanomaterials

Profile of study
general academic

Level of study
second-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Students starting this subject should possess a basic knowledge in the field of chemical sciences, i.e. chemistry, electrochemistry, chemical technology, and chemical engineering. He/she should also be able to obtain information from the indicated sources.

Course objective

To provide students with the basic knowledge regarding the history of chemistry and industry, persons and teams working on given laws, phenomena or processes. To develop students' ability to perceive and analyze processes leading to the presented discoveries and inventions. Knowledge • the student has a well-established knowledge about the processes and people leading to the development of theories, phenomena and discoveries in the field of chemical sciences and the latest chemical and material technologies • knows the trends in the development of chemical industrial processes Skills • the student has the ability to acquire and critically evaluate historical information and descriptions presented in literature and other available sources and, on this basis, formulate opinions a given discovery • can critically analyze the industrial chemical processes by utilizing the acquired knowledge about the achievements in the field of chemical sciences and industry Social competences • the student is aware of the possibilities and limitations of a man and a research team in the usefulness of knowledge, laboratory aids and advanced technologies for the development of science and technology • understands that the knowledge and skills needed to analyze a given process or phenomenon relatively quickly become obsolete and, at the same time, they are necessary for the raise and further development of the scientific issues

Course-related learning outcomes

Knowledge:
-

Skills:
-

Social competences:
-

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The knowledge acquired during the course is assessed through a colloquium. A minimum of 50% of the total points is required to pass. The subject matter of the colloquium will be systematically discussed during lectures and made available to students via email.

Programme content

Selected topics related to the history of chemistry and the chemical industry

Course topics

rogram content includes the course of discoveries, processes of development of views and key figures related to, among other things:
• atom's construction
• the discovery of electricity, the invention of energy storage and conversion devices
• the discoveries of selected elements and formation of the periodic table
• the influence of observations conducted by philosophers living in antiquity on the development of modern science
• the Industrial Revolution
• the development of chemical engineering and increasing the scale of production of individual compounds and chemical substances
• the development of chemical technology and new trends in the implementation of industrial processes

Teaching methods

multimedia presentation (PowerPoint) and videos illustrated with examples on the blackboard

Bibliography

Basic:
1. Partington, J. R., History of Chemistry. Macmillan Education, Limited: 1964.

2. Partington, J. R., A Short History of Chemistry. Dover Publications: 1989.
3. Debus, A. G., The Significance of Chemical History. Ambix 1985, 32 (1), 1-14.

Additional:
4. Mehra, J.; Rechenberg, H., The Historical Development of Quantum Theory. Springer New York: 2000.
5. Scerri, E. R., The Periodic Table: Its Story and Its Significance. Oxford University Press, USA: 2007.
6. Pullman, B.; Reisinger, A. R., The Atom in the History of Human Thought. Oxford University Press: 2001.
7. Priestley, J., The History and Present State of Electricity: With Original Experiments. J. Dodsley, J. Johnson, B. Davenport, and T. Cadell: 1767.
8. Agassi, J., Science and Its History: A Reassessment of the Historiography of Science. Springer Netherlands: 2008.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00