



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Introduction to Ecology

Course

Field of study

Environmental Protection Technologies

Area of study (specialization)

-

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

I/1

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

Projects/seminars

0

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

Barbara Górską, BEng, PhD

Responsible for the course/lecturer:

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Faculty of Chemical Technology,

Institute of Chemistry and Technical

Electrochemistry

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Prerequisites

The student has basic knowledge in the field of chemistry, biology and geography. The student has a basic knowledge of: the creation of the Earth and Earth's spheres. The student knows: basic concepts in ecology, laws governing nature and ecosystems. The student is familiar with the topics of ecological ethics, the impact of anthropogenic activities on the environment, traditional and alternative energy sources.

Course objective

To familiarize students with the most important concepts in ecology, with the Earth's spheres, including



the biosphere, the laws governing nature and ecosystems, and the relationships between them. Presentation of the impact of anthropogenic activities on the biosphere. Acquaintance with ecological ethics. Creating awareness of being co-responsible for the state of the natural environment and developing pro-ecological attitudes.

Course-related learning outcomes

Knowledge

K_W05 - knows the rules of environmental protection related to chemical production and waste management

K_W14 - has the general knowledge necessary to understand social, economic, legal and other non-technical conditions of engineering activities

Skills

K_U01 - obtains information from literature, databases and other sources related to chemical sciences, integrates them, interprets and draws conclusions and formulates opinions

K_U06 - has the ability to self-education

Social competences

K_K01 - understands the need for further training and raising their professional and personal competences

K_K02 - is aware of the importance and understanding of non-technical aspects and effects of engineering activities, including its impact on the environment and the associated responsibility for decisions

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written/oral exam graded on the basis of a points system (0-100 points)

3	50.1 -70.0 pts
4	70.1 -90.0 pts
5	90.1 -100 pts

Programme content

Basic concepts and definitions in ecology including biocenosis, species, populations, habitat, primary producer, consumer, ecological systems as well as the structure and characteristics of individual geospheres (atmosphere, lithosphere, hydrosphere, biosphere). The impact of human activities on ecosystems, environmental devastation, major pollutions of atmosphere, lithosphere, hydrosphere and their effects, including the disappearance of many species of plants and animals. Selected aspects of oceanography. Popular plant protection products and their environmental impact including bioaccumulation and the risks associated with the use of plant protection products. Urbanization, industrialization and the impact of industrial development on the environment. Prospects for the



further development of our civilization in the era of depletion of energy resources and progressive contamination of the biosphere. Classic and alternative energy sources and their impact on environmental degradation.

Teaching methods

Lecture: multimedia presentation.

Bibliography

Basic

1. T. Stefanowicz, Wstęp do ekologii i podstaw ochrony środowiska, Wyd. Politechniki Poznańskiej, ISBN 83-7143-066-3, Poznań 1996.
2. I. Wojciechowski, Ekologiczne podstawy kształtowania środowiska, Państwowe Wydawnictwo Naukowe, ISBN 83-01-07349-7, Warszawa 1987.

Additional

1. W.M. Lewandowski, Proekologiczne źródła energii odnawialnej, Wyd. Naukowo-Techniczne, ISBN 83-204-2546-8, Warszawa 2001.
2. B. Burczyk, Zielona Chemia Zarys, Oficyna wydawnicza Politechniki Wrocławskiej; ISBN 978-83-7493-866-2, Wrocław 2006.
3. S. E. Manahan, Toksykologia środowiska, Wydawnictwo Naukowe PWN; ISBN 978-83-01-14841-6 Warszawa 2012.
4. B. Kołodziej, M. Matyki (red.), Odnawialne źródła energii. Rolnicze surowce energetyczne, Wydawnictwo: PWRiL, ISBN: 978-83-09-01139-2, 2012.

Breakdown of average student's workload

	Hours	ECTS
Total workload	28	1,0
Classes requiring direct contact with the teacher	19	0,7
Student's own work (literature studies, preparation for tests/exam) ¹	9	0,3

¹ delete or add other activities as appropriate