MODULE INFORMATION SHEET

Name of Module Unit	**Environmental Chemistry II**
Name in polish language	Chemia środowiska II
Module type	compulsory / elective
Form of studying	full-time day courses
Level of study	graduate course (M.Sc. level)
Type of study (for extra-mural courses)	-
Programme	Environmental Engineering
Speciality	Environment Protection Engineering
Responsible department	Department of Informatics and Environment Quality Research
Responsible person	Jan Bogacki Ph. D.

Semester	Lectures(E)	Tutorials	Laboratory	Computer Exercises	Projects	ECTS
2	30		30			4

Learning outcomes (knowledge, skills, competencies)

Knowledge in the field of anthropogenic substances in the environment (priority substances, AOX), transformation of pollutants in the environment and selected instrumental method of water analysis

Prerequisites

Environmental Chemistry

Rules for integrated grade setting

0,4*lecture + 0,6*laboratories

Recommended readings

Gary W.VanLoon, Stephen J. Duffy Environmental Chemistry: A Global Perspective Oxford University Press, 2010
Julian E. Andrews An introduction to environmental chemistry Blackwell Publishing, 2004
Stanley E. Manahan Water chemistry University of Missouri, Columbia, USA, 2010

Contents of lectures (syllabus)

	Topics	Time (hrs.)	Scope (S / Ex)
1	Priority substances in the envoronment -AOX - Adsorbable, Organically Bound Halogen	5	S
2	The processes of self-purification in rivers - the curve of oxygen consumption (BODn), the curve of oxygen	6	S
3	Photochemical processes in the environment	6	S
4	Sediments and sewage - the phenomenon of sorption on the sediment water interface - partition coefficient and partition coefficient of water-octanol	6	S
5	Selected instrumental methods for testing the waters - GC-MS, AAS, HPLC and IC	6	
4	Final test	1	S
	Total	**30**	**hours**

S – topics listed in the legal study programme standards from 12.07.2007
Ex – extended topics

Lecturers

Jan Bogacki Ph. D.

Assessment method

Test

Contents of laboratories

	Topics	Time (hrs.)	Scope (S / Ex)
1	Self-purification processes in water - BOD removal curve and the curve of oxygen (oxygen balance)	6	S
2	Photochemical reduction of Fe(III)	6	S
3	Speciation of metals	3	S
4	Determination of selected pollutants in water sample	3	S
5	Preparation of sample of water and determination by GC-MS and AAS method	3	S
6	Selected methods of wastewater treatment	6	S
7	Final test	3	S
	Total	**30**	**hours**

S – topics listed in the legal study programme standards from 12.07.2007
Ex – extended topics

Persons responsible for laboratories

dr Jan Bogacki, dr hab. inż. Piotr Marcinowski

Assessment method for laboratories

Test