

MODULE INFORMATION SHEET

Name of Module Unit	Pro-ecological Technologies
Name in polish language	Technologie proekologiczne
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	Chair of Environmental Protection and Management
Responsible person	dr inż. Piotr Manczarski

Semester	Lectures(E)	Tutorials	Laboratory	Computer Exercises	Projects	ECTS
3	15				30	3

Learning outcomes (knowledge, skills, competences)

The student has knowledge about pro-ecological technologies applied in industry and Best Available Techniques (BAT) concept.

The student has skills to prepare Ecological Audits and Environmental Permits.

The student has competences to cooperate with industry and authorities.

Prerequisites

Municipal Solid Waste Treatment Technology

Rules for integrated grade setting

Integrated mark = lecture mark x 50% + project mark x 50%

Recommended readings

www.mos.gov.pl www.environment-agency.gov.uk www.epa.ie
www.europa.eu.int/comm/environment/ippc

Contents of lectures (syllabus)

	Topics	Time (hrs.)	Scope (S / Ex)
1	Introduction: definitions, basic terms, environmental requirements.	2	S
2	Legal bases of BAT incl. IE directive.	2	S
3	Technological bases: unit operations, material & energy saving, minimization of environmental effects. Running of the technological processes. Environment friendly technologies.	3	EX
4	Best Available Techniques (BAT): criteria of selection & identification, reference notes, defining of optimal technology based on siting factors, BAT conclusions (BATC).	4	S
5	Ecological Audits and Environmental Permit – tools for introduction, implementation & enforcement of BAT requirements.	3	S
6	Written test	1	S
Total		15	hours

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

Ex – extended topics

Lecturers

dr inż. Anna Rolewicz-Kalińska, dr inż. Piotr Manczarski

Assessment method

The written examination

Contents of guided projects

	Topics	Time (hrs.)	Scope (S / Ex)
1	The discussion of rules and the range of the project	2	Ex
2	Introduction: principles of BAT for selected installations.	20	S
3	Assessment of BAT for selected IPPC installations made by students (in teams). Consultations.	8	EX
Total		30	hours

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

Ex – extended topics

Persons responsible for guided projects

Dr inż. Krystyna Lelicińska-Serafin

Assessment method for guided projects

The presence, the realization of the project, passing the project.