

MODULE INFORMATION SHEET

Name of Module Unit	Environmental Impact Assessments (EIA)
Name in polish language	Oceny oddziaływania na środowisko (OOS)
Module type	Compulsory
Form of studying	Full-time day courses
Level of study	undergraduate course (B.Sc. level)
Type of study (for extra-mural courses)	
Programme	Environmental Engineering
Speciality	Environmental Engineering
Responsible department	Department of Environmental Protection and Management
Responsible person	dr hab. inż. Andrzej Kulig, prof. uczelni

Semester	Lectures(E)	Tutorials	Laboratory	Computer Exercises	Projects	ECTS
7	30 (Exam)				15	4

Objectives (summary)

The purpose of the course (module unit) is to familiarise students with the environmental impact assessment procedures to be used in case of the spatial and sector planning processes at the national, regional and local level (i.e. creating planning documents), as well as in the processes of designing and implementing projects and operating existing facilities. The knowledge delivered during the lectures is supplemented by design exercises (guided projects), which provide students with the information of formal and legal procedures and give them practical skills necessary to conduct environmental impact assessments and environmental audit (ecological surveys) on selected environmental components, as well as to prepare formal reports that constitute the basis for administrative (e.g. environmental) decisions.

Prerequisites

Economics and Law in Environmental Engineering

Rules of integrated grade setting

Integrated grade = lecture grade x 0.55 + project exercise grade x 0.45

Recommended readings

1. Marriott Betty B. Environmental Impact Assessment. A practical Guide. McGraw-Hill. New York 1997.
2. Morgan Richard K. Environmental Impact Assessment. A methodological perspective. Kluwer Academic Publishers. Dordrecht 1998.
3. Methods of Environmental Impact Assessment. Ed. Morris Peter & Therivel Riki. The Natural and Built Environment series. Oxford Brookes University. London 2000.
4. Harrop Owen D. & Nixon Ashley J. Environmental Assessment in Practice. Routledge. London 1999.
5. Glasson John, Therivel Riki, Chadwick Andrew. Introduction to Environmental Impact Assessment. Principles and procedures, process, practice and prospects. 2nd Edition. The Natural and Built Environment series. UCL Press Limited. London. 1999.
6. Petts Judith & Eduljee Gev. Environmental Impact Assessment for Waste Treatment and Disposal Facilities. John Wiley & Sons. Chichester 1994.
7. Roberts James A. Just What Is EIR? Global Environmental Management Services. Sacramento 1991.
8. Environmental protection regulations, including Act of 3 October 2008 on *Making Accessible Information about Environment and its Protection, Public Participation in Environmental Protection*

and Environmental Impact Assessment (Official Journal No 194, Item 1227 as amended) and Regulation on Projects that may Significantly affect the Environment issued by the Council of Ministers of September 10, 2019 (Official Journal 2019, Item 1839).

9. Environmental Impact Assessment (EIA). Procedure and Requirements in Malaysia (<http://www.doe.gov.my/eia/wp-content/uploads/2013/06/EIA-Procedure-and-Requirements-in-Malaysia.pdf>)
10. Selected scientific and technical publications (bibliography items) from magazines.
11. Selected internet sources (with accurate indication of the website address).

Contents of lectures (syllabus)

Item	Topics	Time (hours)	Scope (S/Ex)
1	Introductory issues. Environmental impact at the stage of implementation, operation and liquidation of a facility; and assessment of that impact. Idea of environmental impact assessments (EIA). Basic definitions.	2	Ex
2	Brief history of EIA: globally, in the EU and in Poland. International principles and regulations (directives and conventions) applicable to environmental impact assessments.	2	Ex
3	Legal basis for EIA procedures in Poland – evolution of regulations and their final status. Types of projects affecting the condition of the environment (policies, plans and programmes, and investment projects). Strategic Environmental Assessments (SEA).	2	Ex
4	Investment process in the context of environmental protection requirements. Technical objectives and types of projects for environmental impact assessments (<i>screening</i>). Formal and legal procedures of environmental impact assessment – analysis of patterns. Environmental impact assessment in a transboundary context.	2	Ex
5	Formal procedure of environmental impact assessment at the project planning stage. Schedule of assessment procedures. Environmental impact assessment procedure for small investment projects. Decision on environmental conditions of project implementation.	2	Ex
6	Assessment methods and techniques. Source materials in environmental impact assessments. Use of environmental monitoring data. Determination of the scope for environmental impact assessment (<i>scoping</i>). Descriptive checklists.	2	Ex
7	How to make the assessments more detailed (from qualitative to quantitative). Environmental impact assessment methods: matrices, scaled and weighted checklists, method of map overlay, network interrelation matrix, environmental status comparison matrix, mathematical modelling.	2	Ex
8	Alternatives of solutions in environmental impact assessments. Extraordinary environmental hazards and their assessment.	2	Ex
9	European Ecological Network <i>Nature 2000</i> and its implications for SEA and EIA procedures.	2	Ex

10	Ex-post assessments and environmental audit (EA; ecological surveys). General principles of and formal requirements to be met by the surveys. EA of contaminated areas. Detailed EA procedures (privatisation processes, solid waste management).	2	Ex
11	Examples of environmental impact assessments produced for industrial, infrastructure (road, railroad etc.) and municipal projects.	2	Ex
12	Environmental impact of wastewater treatment plants and solid waste management facilities (e.g. dumping site, composting or biogas plants). Assessment of the sources, types and range of the impact. Active and passive methods of reducing unfavourable impact.	4	Ex
13	Public participation in environmental impact assessment procedures. Formats and techniques of consultation exercises involving the general public. Role of an investor and environmental protection authorities in the environmental impact assessment procedure.	2	Ex
14	Environmental Impact Report – principles of elaboration and formal requirements. Assessment authors. Environmental impact assessment commissions and their powers.	2	Ex
Total		30	hours

S – topics listed in the study programme standards

Ex – extended topics

Lecturers

dr hab. inż. Andrzej Kulig, prof. uczelni

Assessment method

Exam – credit in a written format (test can be stationary or remote *on-line*, depending on the conditions).

Contents of design exercises (guided projects)

Item	Topics	Time (hours)	Scope (S/Ex)
1	Principles of granting credit for the module, division into groups. EU and national legislation, and readings facilitating production of an environmental impact assessment report. Brief characteristics of EIA.	1	Ex
2	Description of individual groups of projects. Formal and legal requirements towards individual groups of projects. Selection of topics on the basis of the Resolution issued by the Cabinet. Decision on underlying environmental conditions: characteristics.	1	Ex
3	Presentation of the scope of the report. Description of the planned project: its location, conditions of land use in the phase of construction and operation. Selection of location for the chosen project.	1	Ex
4	Description of analysed variants of the planned projects. Expected types and amounts of contaminants resulting from the operation of	1	Ex

	the planned project. Technological diagrams.		
5	Description of natural elements of the environment covered by the scope of the expected impact. <i>Natura 2000</i> Sites: brief characteristics.	1	Ex
6	Description of proposed technical and technological solutions. Presentation of alternative solutions.	1	Ex
7	Expected impact on individual environmental elements at the stage of construction, operation and liquidation. Presentation of environmental impact assessment methods which have been employed.	1	Ex
8	Leopold's matrix.	1	Ex
9	Description of expected activities aimed at prevention, reduction or compensation of unfavourable impact.	1	Ex
10	Analysis of possible social conflicts. Suggested methods of avoiding or minimising them.	1	Ex
11	Presentation of proposed monitoring of a project impact at the construction and operation stage.	1	Ex
12	Verification of obtained results. Analysis of limitations and difficulties. Production of a final environmental impact assessment report.	1	Ex
13	Presentation of final reports. Guided project wrap-up and making out of grades.	3	
Total		15	hours

S – topics listed in the study programme standards

Ex – extended topics

Persons responsible for design exercises (guided projects)

Prof. nzw. dr hab. inż. Andrzej Kulig, Dr hab. inż. Mirosław Szyłak-Szydłowski
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Assessment method for design exercises (guided projects)

Attendance, preparation of a project and successful completion of the guided project exercises (defence of the project).
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