

MODULE INFORMATION SHEET

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| Name of Module Unit | Sustainable Development and Management |
| Name in polish language | Zrównoważony rozwój i zarządzanie |
| 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 | Dept. of Informatics and Environment Quality Research |
| Responsible person | dr hab inż. Artur Badyda, prof. WUT |

| Semester | Lectures(E) | Tutorials | Laboratory | Computer Exercises | Projects | ECTS |
|----------|-------------|-----------|------------|--------------------|----------|------|
| 1 | 15 | | | | 30 | 3 |

Learning outcomes (knowledge, skills, competences)

The aim of the course is to develop managerial approach to issues related with sustainable development and its social perspective, especially in the context of an increasingly restrictive rules and limitations related to the management of energy resources (non-renewable in particular). There will be presented issues related to the impact assessment of diverse human activities together with the actions that will be necessary to be implemented in different time horizons. Knowledge about the available instruments to achieve the tasks of sustainable development will allow future planners, officials, entrepreneurs and decision-makers to choose the optimal action to the current needs in the field of economic development, resource saving and social development. Basic information concerning the processes of public consultation, particularly in the context of managing the infrastructure development activities, but also in management in local government units or enterprises, will also be presented. In matters related to the management of institutions and industrial enterprises it would be helpful to get to know tools such as management systems based on ISO standards and EMAS Regulation.

Prerequisites

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Rules for integrated grade setting

Rules for integrated grade setting: $0,5 \cdot \text{colloquium grade} + 0,5 \cdot \text{project grade}$

Recommended readings

ISO standards (e.g. ISO 9000, ISO 14001, ISO 19000, ISO 23000)

Starzewska-Sikorska, Anna., and Polska Akademia Nauk. Instytut Podstaw Inżynierii Środowiska. Integrated Environmental Management of Land and Soil in European Urban Areas. Zabrze: Instytut Podstaw Inżynierii Środowiska Polskiej Akademii Nauk, 2021.

Norton, Susan B., Glenn W. Suter, Alexa C. Alexander, Susan M. Cormier, and Taylor & Francis . Wydawca. Ecological Causal Assessment. First Issued in Paperback. ed. Boca Raton ; London ; New York: Taylor & Francis Group, CRC Is an Imprint of Taylor & Francis Group, an Informa Business, 2017.

Theodore, Louis., and CRC Press. Environmental Risk Analysis : Probability Distribution Calculations. Boca Raton [etc.]: CRC/Taylor & Francis Group, 2016.

Contents of lectures (syllabus)

| | Topics | Time (hrs.) | Scope (S / Ex) |
|--------------|--|-------------|----------------|
| 1 | Assessment of the effects of human activity in the face of sustainable development | 4 | S |
| 2 | EPM in the local, regional and global dimension | 2 | S |
| 3 | Contemporary problems of environmental pollution | 3 | S |
| 4 | Energy security and reduction of greenhouse gas emissions | 3 | S |
| 5 | Management in infrastructure development processes | 1 | S |
| 6 | Management in local government units | 2 | S |
| 7 | Social and ecological conflicts | 2 | S |
| 8 | Colloquium | 2 | S |
| Total | | 15 | hours |

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

Ex – extended topics

Lecturers

Artur Badyda

Assessment method

Positive mark of the colloquium.

Contents of guided projects

| | Topics | Time (hrs.) | Scope (S / Ex) |
|--------------|---|-------------|----------------|
| 1 | Introduction, overview of program activities, the distribution of project works | 2 | S |
| 2 | The theory of organization, the subsystems in the organization | 2 | S |
| 3 | Implementation of project work involving the analysis of the current situation regarding management in the enterprise, local government units or in the investment process and suggestions of the optimal management system for this entity | 22 | S |
| 4 | Presentation of the results of the project | 4 | S |
| Total | | 30 | hours |

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

Ex – extended topics

Persons responsible for guided projects

Dominika Mucha

Assessment method for guided projects

Positive mark of the project (written document and presentation).