**SYLLABUS** (MODULE-ERASMUS+)

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| Course/module (as specified in the approved curriculum for the field of study)  **Environmental protection of rural areas** | | | | | | ECTS  **3** | | Component code  **ENVI 3.1** | |
| Name in Polish  **Ochrona środowiska na obszarach wiejskich** | | | | | |
| Unit(-s) providing the course/module (Faculty, Institute/Department)  **Faculty of Environmental and Mechanical Engineering, Department of Ecology and Environmental Protection** | | | | | | | | | |
| Head of course/module (e-mail address)  **Ryszard Staniszewski, Prof. UPP (**[**ryszard.staniszewski@up.poznan.pl**](mailto:ryszard.staniszewski@up.poznan.pl)**)** | | | | | | | | | |
| Other teachers  **Krzysztof Achtenberg, PhD** | | | | | | | | | |
| Course category  **Open** | | Language  **English** | | Level  **Bachelor/Master** | Profile  **Academic-general** | | Semester  **Summer** | | |
| **TYPE OF CLASSES/LECTURES AND THE NUMBER OF HOURS**  (organised classes/lectures and self-study) | | | | | | | | | |
| Type of studies: full-time | | |  | Type of studies: extramural | | | | |  |
| * lectures | | | 10 | * lectures | | | | | - |
| * practical classes | | | 10 | * practical classes | | | | | - |
| * field exercise | | | 10 | * field exercise | | | | | - |
| * other lessons | | | - | * other lessons | | | | | - |
| * self-study | | | 45 | * self-study | | | | | - |
| Total number of hours: | | | 75 | Total number of hours: | | | | | - |
| **PRE-REQUSITES**  Basics of environmental sciences. | | | | | | | | | |
| **OBJECTIVE OF COURSE/MODULE**  Acknowledgment of students with issues related to the human impact on environment of rural areas. During course students will learn how to evaluate environmental health and what kind of protection activities are suited for certain problem. | | | | | | | | | |
| **TEACHING METHODS**  Lectures with multimedia presentation, discussion.  Classes: calculation of pollutions emission to environment, field surveys, physical and chemical analysis. individual projects. Possibility to use distance learning tools and techniques. | | | | | | | | | |
| **LEARNING OUTCOMES** | | | | | | | Reference  to field outcomes | | |
| Knowledge | O1: Students will have advanced knowledge of the role of biological methods in environmental engineering and environmental protection.  O2: Students will have knowledge about aspects of sustainable development.  O3: Students will have knowledge about the natural and human impact on water ecosystems and how to evaluate different pressures.  O4: Students will know role of wastes in rural environment. | | | | | | Not  applicable | | |
| Skills | O5: Students will have skills to write reports on environmental risks and to undertake simple field research.  O6: Students will be able to evaluate water and air quality using standard methods. | | | | | | Not  applicable | | |
| Social  competences | O7: Students will understand the need of continuous learning, will be able to inspire and organize learning processes of other persons  O8: Students will understand technical and non-technical aspects of environmental engineering and their impact on environment | | | | | | Not  applicable | | |
| **METHODS TO VERIFY LEARNING OUTCOMES**  Written test, presentation.  Elaboration of selected topic. | | | | | | | Outcome Reference  Numbers  O1, O2, O3, O4, O5, O6, O7  O3, O4, O5, O6, O8 | | |
| **TEACHING CONTENT**  **Lectures**: Rural environment as an area susceptible for degradation. Human impact on water, air, soil and landscape. Main sources of pollution. Preventing methods according to water and air pollution. Evaluation of the rate of degradation and valorisation of observed modifications. Mining pressure in rural areas. Use of renewable energy In rural areas.  **Practical classes:** Technical and biological methods used in environment protection. Analytical instruments used in monitoring. Wastes in rural landscape. Environmental problems in rural areas of Wielkopolska region. | | | | | | | | | |
| **Forms and criteria for passing of course/module**  Project evaluation and completion.  Final written exam. | | | | | | | Percentage of final mark  50%  50% | | |
| **LIST OF LITERATURE**   1. Hemond H., Fechner E. Chemical Fate and Transport in the Environment. Academic Press, 2014. 2. Koc J. Environment alterations - research and protection methods. University of Warmia and Mazury, Olsztyn, 2011. 3. Polish Journal of Environmental Studies, 2010-2020. | | | | | | | | | |