**SYLLABUS** (MODULE-ERASMUS+)

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| Course/module (as specified in the approved curriculum for the field of study)  **Wetland conservation** | | | | | | ECTS  **3** | | Component code  **ENVI 2.4** | |
| Name in Polish  **Ochrona mokradeł** | | | | | |
| 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)  **Agnieszka Ławniczak-Malińska, Prof. (**[**agnieszka.lawniczak@up.poznan.pl**](mailto:agnieszka.lawniczak@up.poznan.pl)**)** | | | | | | | | | |
| Other teachers  **-** | | | | | | | | | |
| Course category  **Open** | | Language  **English** | | Level  **Bachelor/Master** | Profile  **Academic-general** | | Semester  **Winter/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 | | | 14 | * lectures | | | | | - |
| * practical classes | | | 14 | * practical classes | | | | | - |
| * field exercise | | |  | * field exercise | | | | | - |
| * other lessons | | | - | * other lessons | | | | | - |
| * self-study | | | 48 | * self-study | | | | | - |
| Total number of hours: | | | 76 | Total number of hours: | | | | | - |
| **PRE-REQUSITES**  Basics of environmental sciences. | | | | | | | | | |
| **OBJECTIVE OF COURSE/MODULE**  This course will provide an overview of the wetland ecology, restoration and conservation methods of wetland habitats. | | | | | | | | | |
| **TEACHING METHODS**  Lectures, tutorials, field trip. 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 wetlands in environmental  engineering and environmental protection.  O2: Students will discover advanced methods to restore and protect different types of wetlands.  O3: Students will know about the natural and human impact on different type of ecosystems and how to evaluate its conditions. | | | | | | Not  applicable | | |
| Skills | O4: Students will have skills to write reports on environmental risks and to undertake simple field research.  O5: Students will be able to evaluate conditions of the different types of wetlands using standard methods. | | | | | | Not  applicable | | |
| Social  competences | O6: Students will understand the social responsibility for the environment.  O7: Students will be able to take a part in an open discussions about climate changes and its consequences. | | | | | | Not  applicable | | |
| **METHODS TO VERIFY LEARNING OUTCOMES**  Oral individual report,  Assessment of participation in a discussion.  Final written exam | | | | | | | Outcome Reference  Numbers  O1, O2, O3,  O4, O5,  O6, O7 | | |
| **TEACHING CONTENT**  **Lectures**: Wetland classifications, wetlands distribution in Poland and around the world, wetlands protection, criteria for identifying wetlands of international importance, Ramsar convention, protected areas; Hydrological regimes in the different types of wetlands; Role of wetlands: 1) hydrological: water cycle, 2) biodiversity: target species, bioindicators, invasive and rare species, red list; 3) climate change: microclimate, emission and reduction of greenhouse gases; 4) paleontological; 5) economical: water quality control, flood protection, 6) education etc.. Nutrient cycle in wetlands, primary production, nutrient limitation, N:P, N:K nutrient ratio in plant species as indicators of environmental changes.  **Practical classes:** Wetlands restoration and conservation: methods, advantage and disadvantage of applied methods. | | | | | | | | | |
| **Forms and criteria for passing of course/module**  Presentations  Exam | | | | | | | Percentage of final mark  40%  60% | | |
| **LIST OF LITERATURE**   1. Mitsch W.J. ,Gosselink J.G. 2003. Wetlands. John Wiley &amp; Sons. 2. Okruszko T., Maltby E., Szatylowicz J., Miroslaw-Swiatek D., Kotowski W. 2007. Wetlands: Monitoring, Modelling and Management. Taylor &amp; Francis, The Netherlands. 3. Directive 79/409/EEC (Birds Directive) on the conservation of wild birds. 4. Directive 92/43/EEC (Habitat Directive) on the conservation of natural habitats and of wild fauna and flora. | | | | | | | | | |