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| ***Title of the course:*****Nature and landscape protection, Environmental and nature field exercises** | ***NEPTUN-code:***RKXTT1ABNF | ***Weekly teaching hours:*** *l+cw+lw*2+4+0 | ***Credit*:** 5***Exam type****:* 1m  |
| ***Course leader:***Krisztina Demény Ph.D. | ***Position:*** senior lecturer | ***Required preliminary knowledge:*** - |
| ***Curriculum:*** |
| The purpose of the subject is to present the basic knowledge of nature and landscape protection through the following topics, and to prepare students for effective nature protection: Definition of landscape, natural and cultural landscape. Hierarchical system of landscape. Landscape-forming factors (biotic and abiotic factors). Types of landscape, landscape potential and protection. History of nature protection/conservation in Hungary and in the world. Major types of protected areas. Subjects of nature protection/conservation: geological, hydrological, zoological, botanical, cultural values. Main protected areas in Hungary and in the world.The aim of the course is to apply the theoretical knowledge acquired in professional subjects to practical work, field work and field visits. Sampling and measurements on the field and in the lab provide students with experience that they can build upon to solve a problem later on. The main objective of the course is to create a competence-based environmental engineer training in addition to advanced theoretical science training. During the semester the students will participate in field visits and field work to identify environmental and nature conservation issues. Direct contact with the environment helps to develop an environmentally conscious approach, to recognize the causal relationships and relationships between the state of the natural environment and human activity. It is possible to observe anthropogenic impacts in the environment - waste incineration plant, sewage treatment plant, landfill, small water streams, municipal infrastructure, etc., and to carry out impact studies. During the course students will have the opportunity to interpret and analyze complex environmental and nature conservation problems. |
| **Detailed description of the subject, timetable** |
| **Weeks** | **Topics of lectures and practices** |
| 1. 11.09. | Talking general topics, requirements, and student’s lectures.Introducing of the theoretical background of the field working and researching. |
| 2. 18.09. | Anthropogenic impacts I.: waste incinerator visit or sewage treatment plant. |
| 3. 25.09. | Natural values I. (field observations, analyses, sampling): geological, cultural historical and landscape values. Visit to Hárs-Mt.- Budai-Mts.) *- Field trip together with Hungarian course students* |
| 4. 02.10. | Anthropogenic impacts II.: waste incinerator visit or sewage treatment plant. |
| 5. 09.10. | Anthropogenic impacts III. Power plant visit. |
| 6.16.10. | Discussion and assessment of the reports. |
| 27.23.10. | *Holiday* |
| 8. 30.10. | Natural values II. (field observations, analyses, sampling): geomorphological (karst form treasure), botanical and hydrological values. *Visit to the Máriaremete Gorge Valley (In Buda Mts.) observing the landscape change. – Field trip together with Hungarian course students* |
| 9. 06.11. | Definition of landscape, natural and cultural landscape. Hierarchical system of landscape. Landscape-forming factors (in Hungary). Landscape types of Hungary.  |
| 10.13.11. | Definition of nature and landscape protection/conservation. Protected areas, history, IUCN categories. Main types of protected areas.Main conventions on nature conservations Subjects of nature/landscape protection/conservation.Project work |
| 11.20.11. | *Holiday*. |
| 12.27.11. | Introduction to nature conservation in Hungary, main emblematic values, parks in Hungary. National parks and protected areas in the world.Project work |
| 13. 04.12. | Written test (theoretical and practical).Discussion and assessment of the project work. |
| 14.11.12. | Replacement test |
| **Mid-term requirements** |
| **Participation in occupations:**Classroom works: It is compulsory to attendance at classroom work. The rules of Student Requirements System of Óbuda University are the guidelines. |
| **Mid-terms, protocols, reports, etc.:****-** project work - practical reports- written tests (theoretical and practical) |
| **The method of obtaining a signature / mid-term mark:**Requirement of midterm mark: * attendance at classroom works,
* project work min. = 2 (pass)
* preparing reports about practical works, fields works and field visits, min. = 2 (pass).
* written test (theoretical and practical), min. = 2 (pass) (separately)

Mid-term mark = written test - 70%; reports – 10%; project work – 20%In case of mid-semester mark fail (1), correction opportunities are available according to the Student Requirements System of Óbuda University |
| ***Professional competencies:*** |
| Knowledge of general and specific mathematical, natural and social scientific principles, rules, relations, and procedures as required to pursue activities in the special field of environment protection. Comprehensive knowledge of the basic features and interrelations of environmental elements and systems, as well as of the environmentally harmful substances affecting them. Undertaking and authentically representing the social role of environment protection, its basic relationship with the world. Open to professional cooperation with specialists related to their profession but involved in other areas.Knowledge of the learning, knowledge acquisition, and data collection methods of the special fields of environment protection, their ethical limitations, and problem-solving techniques. Knowledge of the main methods to examine the quantity and quality features of environmental elements and systems, their typical measuring instruments, and limitations thereof, as well as methods for the evaluation of data measured. Able to perform environmental impact assessments and to participate in compiling impact studies. Able to apply in practice as well the regulations and requirements of health and safety, fire protection, and safety engineering as related to their special field. Able to participate in project and proposal implementation and audit tasks based on their knowledge. Able to participate creatively in engineering work based on their multidisciplinary skills, as well as to adapt to continuously changing circumstances.  |
| ***Literature:*** |
| Kertész, A. (2013): Landscape and environmental assessment (http://p2014-1.palyazat.ektf.hu/public/uploads/kertesz-landscape-and-environmental-assessment\_532c37799f86c.pdf)Stuart Chape et al.(edit) 2008: The world protected areas (statues, values and prospects in the 21th century), University of California Press (http://www.the-eis.com/data/literature/The%20worlds%20protected%20areas.pdfPPT files on the homepage of Moodle learning systemRavi Jain - Lloyd Urban - Harold Balbach - M. Diana Webb: Handbook of Environmental Engineering Assessment: Strategy, Planning, and Management, Elsevier - Health Sciences Division, 2012, ISBN: 9780123884442Brian Barkdoll: Field guide to environmental engineering for development workers: water, sanitation, and indoor air, 2009, https://www.academia.edu/73112295/Field\_guide\_to\_environmental\_engineering\_for\_development\_workers\_water\_sanitation\_and\_indoor\_air |
| Comment:  |