COURSE DESCRIPTION CARD

<table>
<tr><td colspan="10">Faculty of Civil Engineering and Environmental Sciences</td></tr>
<tr><td>Field of study</td><td colspan="6"></td><td colspan="2">Degree level and programme type</td><td></td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6"></td><td colspan="2">Study profile</td><td>Academic profile</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Ecology</td><td colspan="2">Course code</td><td>IS-FCEE-00031W</td></tr>
<tr><td colspan="2">Course type</td><td>Erasmus</td></tr>
<tr><td rowspan="2">Forms and number of hours of tuition</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td>Winter</td></tr>
<tr><td>15</td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>No. of ECTS credits</td><td>4</td></tr>
<tr><td>Entry requirements</td><td colspan="9">Biology, Soil science, Environmental protection</td></tr>
<tr><td>Course objectives</td><td colspan="9">Recognition of the relationship between life forms and a set of biotic, abiotic, edaphic and climatic factors</td></tr>
<tr><td>Course content</td><td colspan="9">The levels of biological organization: species, individual, population, biocoenosis, ecosystem. Life and the physical environment. Adaptation to aquatic and terrestrial environments. Habitat and ecological niche. Ecology tolerance of individuals. Population ecology. Population structures. Temporal and spatial dynamics of populations. Reproductiveness, mortality, migration of populations. Biocoenosis ecology. The structure and organization of biocoenosis. Interaction: competition, predation, parasitism, mutualism. Ecosystem: spatial and trophic structure. The food chains, food webs and food levels. Energy and matter in the ecosystem. Primary and secondary production. Pathways of elements in the ecosystem. Ecological succession. Applied ecology.</td></tr>
<tr><td>Teaching methods</td><td colspan="9">Lecture - presentation, the project - presentation, discussion</td></tr>
<tr><td>Assessment method</td><td colspan="9">Lecture - Exam; the project - a description and discussion of the project</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="7">Learning outcomes</td><td colspan="2">Reference to the learning outcomes for the field of study</td></tr>
<tr><td>LO1</td><td colspan="7">student has knowledge of the structure and functioning of populations, biocoenosis and ecosystem</td><td colspan="2">K_W03, K_W11</td></tr>
<tr><td>LO2</td><td colspan="7">recognizes and understands the relationship between abiotic environment and organisms; understands bioindication term</td><td colspan="2">K_W05, K_W18, K_U18, K_U22</td></tr>
<tr><td>LO3</td><td colspan="7">know how to identify environmental threatened and know how to prevent them</td><td colspan="2">K_W16, K_U18, K_U22, K_K02</td></tr>
<tr><td>LO4</td><td colspan="7">know how to identify plant communities and diagnostic species of habitat types (in the context of Natura 2000 habitats)</td><td colspan="2">K_W11, K_W12, K_U22</td></tr>
<tr><td>LO5</td><td colspan="7">know how to choose and use the research methods used in phytosociology</td><td colspan="2">K_U23</td></tr>
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LO6	know how to work in a team	K_U03, K_K04
Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	tests on lecture content, student's reports, discussion, description of project	lecture, project, consultation
LO2	evaluating the student's reports and preparation for the classes, tests on lecture content, discussion, description of project	lecture, project, consultation
LO3	evaluating the student's reports and preparation for the classes, tests on lecture content, discussion, description of project	lecture, project, consultation
LO4	tests on lecture content, student's reports, discussion, description of project	lecture, project, consultation
LO5	evaluating the student's reports and preparation for the classes, discussion, description of project	project
LO6	discussion, description of project	project
Student workload (in hours)		**No. of hours**
Calculation	lecture attendance	**15**
	participation in classes, in project	**15**
	participation in student-teacher sessions related to the class/ project	**10**
	preparation for classes, projects	**15**
	work on projects, reports, etc	**15**
	implementation of project tasks	**15**
	preparation and participation in exams	**10**
	TOTAL:	**95**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	**50**	**2**
Student workload – practical activities	**45**	**2**

Basic references	1) Krebs Ch.J.: Ecology. Experimental Analysis of Distribution and Abundance. Pearson Education, Inc., 2009. 2) Mackenzie A., Ball A.S., Virdee S.R.: Instant Notes Ecology. BIOS Scientific Publishers Limited, 2001. 3) Matuszkiewicz W.: Guide to the determination of Polish plant communities. PWN, Warszawa, 2005. 4) Weiner J.: Biosphere life and evolution. PWN, Warszawa, 2008.
Supplementary references	1) Falinska K.: Ecology of plants. PWN, Warszawa, 2004. 2) Kornas J., Medwecka-Kornas A.: Geography of plants. PWN, Warszawa, 2002. 3) Matuszkiewicz J.M.: Plant communities of Poland. PWN, Warszawa, 2005. 4) Forman R.T.T.: Land Mosaics: The Ecology of Landscapes and Regions. Cambridge Univ. Press, Cambridge 1999
Organisational unit conducting the course	**Department of Agri-Food Engineering and Environmental Management**	**Date of issuing the programme**
Author of the programme	**Assoc. Prof. Grażyna Łaska, DSc, PhD**	**12-03-2021**

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar