

Module name	<b>Ecology</b>
Module code	
ISCED code	0511: Biology
Study cycle	I <sup>o</sup>
Semester	winter / summer
Responsible for this module	Piotr Sugier Department of Botany, Mycology and Ecology email: piotr.sugier@poczta.umcs.lublin.pl
Language of instruction	English
Website	
Prerequisites	no
ECTS	6
ECTS points hour equivalents	Contact hours (work with an academic teacher) – ..... - lectures: 30 - labs: 40 - terrain: 5 Non-contact hours (students' own work) – 85 - preparation for the exam: 40 - preparation for labs: 30 - preparation of reports from laboratory exercises: 10 - literature study: 5 Total number of ECTS points for the module - 6
Learning outcomes verification methods	
Course full description	The scope of the content covers the basics of general ecology, including: the relationships among organisms and between organisms and the environment occurring at different levels of biological organization; ecological processes; matter exchange and energy balance in the biosphere; ecological factors affecting the organism; principle of ecological tolerance; the theory of ecological niche; life forms of plants and animals; life history traits and adaptation strategies of organisms; population abundance and density; spatial organization of population; processes in population, the concept of ecosystem, food chains and food networks in different types of ecosystems; primary and secondary productivity; energy flow through ecosystem; nutrient cycling and biogeochemical cycles; species interactions; role of biological and physical factors in developing plant community structure; ecological succession; geographical range and dispersion of organisms; diversity and characteristics of biomes; threats of biodiversity. Students will also be introduced to current research problems of modern ecology and the nature of its relationship with many areas of mathematical, socio-economic, and natural sciences. Scientific methods including field and laboratory methods to understand ecological patterns and processes (observation, sampling, recording data, analysis and reporting of

	data).
Bibliography	<p>Begon M., Townsend C.R. Harper J.L. 2006. Ecology. From Individuals to Ecosystems. Blackwell Publishing, Malden, USA.</p> <p>Crawley M.J. 1997. Plant Ecology. Blackwell Science, Oxford, UK.</p> <p>Dodson S.I., Allen T.F., Carpenter S.R., Ives A.R., Jeanne R.L., Kitchell J.F., Langston N.E., Turner M.G. 1998. Ecology. Oxford University Press.</p> <p>Falińska K. 1998. (ed.). Plant Population Biology and Vegetation Processes. Polish Acad. Sci., W. Szafer Inst. Botany, Kraków.</p> <p>Krebs Ch.J. 2009. Ecology: the Experimental Analysis of Distribution and Abundance. 6th edition. University of British Columbia, Vancouver.</p> <p>Mackenzie A., Ball A.S., Virdee S.R. 1998. Instant Notes in Ecology. BIOS Scientific Publishers, UK.</p> <p>Oldfield F. 2005. Environmental Change: Key Issues and Alternative Approaches. Cambridge University Press.</p> <p>Silvertown J.W., Lovett Doust J. 1993. Introduction to Plant Population Biology. 3rd ed. Blackwell Sci., Oxford.</p> <p>Underwood A.J. 1997. Experiments in Ecology. Cambridge University Press.</p>
Learning outcomes	<p>Knowledge</p> <p>K1. The graduate knows and understands the basic research, laboratory and field methods and techniques used in modern ecology. K_W02</p> <p>K2. The graduate knows and understands the connections between ecology and other natural disciplines, enabling understanding of the principles of functioning of organisms. K_W03</p> <p>K3. The graduate knows and understands ecology specific selected issues in the field of detailed knowledge, including basic processes occurring at the level of population, biocenosis and ecosystem as well as the relationship between organisms and the environment. K_W04</p> <p>K4. The graduate knows and understands at an advanced level the essence of actions for the preservation of biodiversity as a condition for ensuring balance in the biosphere and as a source of biological material for practical applications. K_W05</p> <p>K5. The graduate knows and understands the specificity of ecology, its development directions and selected achievements, as well as the possibilities of practical applications of ecological knowledge, especially in the field of applied ecology in socio-economic space.</p> <p>Skills</p> <p>S1. The graduate is able to properly select and use appropriate analytical methods and research tools, and present the results experiments or observations and</p>

	<p>conclusions. K_U03</p> <p>S2. The graduate is able to perform observations and measurements using appropriate tools during the analysis of research material, as well as laboratory and/or field research methods, and interpret the results obtained and concluded. K_U04</p> <p>S3. The graduate is able to plan and organize individual and team work in order to efficiently solve problems and perform specific tasks. K_U07</p> <p>S4. The graduate is able to cooperate with other people as part of team activities. K_U08</p> <p>S5. The graduate is able to independently plan and implement his own life learning, choosing the range of problems to study in terms of his interests and future professional and/or scientific activity. K_U09</p> <p>Social competence</p> <p>C1. The graduate is ready to make independent decisions, critically evaluate his own activities and the teams and organizations in which he participates, and to be responsible for the effects of these activities. K_K01</p> <p>C 2. The graduate is ready to critically assess his ecological knowledge and received content, and to recognize the importance of ecological knowledge in solving cognitive and practical problems. K_K02</p> <p>C 3. The graduate is ready to fulfill social obligations, including sharing knowledge in the field of ecology with others and co-organizing activities for the social environment. K_K03</p> <p>C 4. The graduate is ready to responsibly perform professional roles, including compliance with the principles of professional ethics and the requirement of this from others when cooperating in a group. K_K05</p> <p>C 5. The graduate is ready to take care of the achievements and traditions of the profession of biologist. K_K06</p>
Practice	
Teaching methods	Lecture, scientific discussion, laboratory practice, observation, measurement, presentation