



## COURSE DATASHEET

<b>Semester:</b>	2014/15/1
<b>Course:</b>	General Ecology II.
<b>Code:</b>	VEMKLIB212A
<b>Responsible department:</b>	Department of Limnology
<b>Department code:</b>	MKLI
<b>Responsible instructor:</b>	Gábor László Seress

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### Course objectives:

The topic of this course is introduction to basic rules of community assembly and ecosystem functions. Mechanisms of supraindividual organization are in focus together with basics of behavioral ecology. Students will be enabled to study literature of ecology and they will gain competence in correct evaluation of ecological hazards and their interpretation.

### Course content:

Basic principles of behavioral ecology. Basic models in behavioral ecology I. Basic models in behavioral ecology II. Complex behavioral patterns and their importance in ecology and environmental protection. Supraindividual organization levels above population: metapopulations, guilds, communities, landscape; scale dependence. Spatial and temporal patterns in communities. Classical and modern concepts of community development; the necessity of model-building. Organization of communities. Relationship between life strategies and population growth. Clonal organization (corals, plants) and the importance of ontogenetic cycles. Vertical structure of communities and its importance; vertical structures in phytoplankton communities and its limnological bases. Basic features of ecological successions; directional changes, cycles, stochastic processes, role of interspecific interactions. Competition and avoidance of competition, resource partitioning. Equilibrium and non-equilibrium models in community development. Ecological equilibrium, disturbance, external and internal noise. Diversity of communities, diversity models. Regulation of food-webs, top-down and bottom-up models. Similarities and differences of terrestrial and aquatic food-webs and applications in biomanipulation. Necessities, possibilities, potentials and limits of ecological modelling.

### Requirements, evaluation and grading:

### Required and recommended readings:

Krebs, C. J. (2001): Ecology: The experimental Analysis of Distribution and abundance. Addison-Wesley, San Francisco. Juhász Nagy, P. (1986): Egy operatív ökológia hiánya, szükségletei és feladatai. Akadémiai Kiadó, Budapest. Mátyás, Cs. (1996): Erdészeti ökológia. Mezőgazda Kiadó, Budapest.