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| 1. Course title: Ecology | | | | | |
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| 2. Code: | | 3. Type (lecture, practice etc.): seminar | | | |
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| 4. Contact hours: 2 hoursper week | | 5. Number of credits (ECTS): 2 | | | |
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| 6. Preliminary conditions (max. 3): none | | | | | |
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| 7. Announced:fall semester, spring semester, both | | | | | |
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| 8. Limit for participants: | | | | | |
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| 10. Responsible teacher (faculty, institute and department):  Zoltán Csabai, PhD (Faculty of Science, Institute of Biology, Department of Hydrobiology) | | | | | |
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| 11. Teacher(s) and percentage: | | Zoltán Csabai, PhD | | 10 % | |
| Győző Horváth, PhD | | 45 % | |
| János Csiky, PhD | | 45 % | |
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| 12. Language:English | | | | | |
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| 13. Course objectives and/or learning outcomes:  Objectives: The lecture intends to introduce students to ecology. The aims of the course are to provide up-to-date, general ecological knowledge and approach, to give an insight into the organization of the nature on a supraindividual basis, to introduce the conceptual, structural elements and community organizing processes. The acquired knowledge provides the basis for the specialization courses of ecological courses in the Master`s degree program.  Learning outcomes: Besides the outcomes listed at Ecology lecture, students successfully completing the course will be *able* to interpret ecological flow charts, organize and interpret field and experimental data of ecological surveys; will be *able* to portray and present basic field and experimental results independently; will be *able* to make presentations and summaries on their own, about ecological topics. | | | | | |
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| 14. Course outline   1. Fundamentals in population dynamics: Different degrees of environmental stochasticity, anthropogenic effects, havarias, small population effect. 2. Population interactions 1) Mechanisms of intraspecific competition, density-dependent regulations, asymmetric competition. 3. Population interactions 2) Mechanisms of intraspecific competition: territorial behavior, relationship between home range and territory, null model of territoriality. 4. Population interactions 3) Lottery-Voltera interference model for interspecific competition. Niche segregation. 5. Population interactions 4) Refining the Lotka-Voltera predation model. Predator-prey cycles in reality. 6. Optimality models in life-history studies. 7. Optimal foraging models (case studies). 8. Species richness, texture and cotexture in ecological systems. 9. Analyzing vegetation patterns of different scales. 10. Study of different succession theories. 11. Effect of disturbance on species richness and stability of communities. 12. Invasive species and their effects: theories and experiences. 13. Material cycles and energy flow in ecological systems. 14. Written exam. | | | | | |
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| 15. Mid-semester works  Week 1 - Week 13: Introduction (teacher) and discussion (students and teacher) of topics based on pre-published case studies, possibly based on 10-mins long student presentations (students, tutors)  Week 14: Written exam (students)  At the beginning of the semester, articles and case studies about the topics raised by the teachers will be provided to the students. A critical evaluation about at least one of the topics should be submitted by each student as a text before the given week. The student`s discussion skill will be evaluated based on the latter and the classrooms activity. | | | | | |
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| 16. Course requirements and grading  During the semester, the classroom activity and/or home assignments and small presentations held by students will be scored. The final grade will be counted as a weighted average.  The weights assigned to each type are as follows:  • written exam: 50%,  • classroom activity (discussion skill): 25%  • critical evaluation of a selected topic as a text (to be submitted before the given week): 25%.  Final grade scale:  • 0% - 54% - fail  • 55% - 64% acceptable  • 65% - 74% moderate  • 75% - 84% good  • 85% - 100% excellent  Other condition: None of the above listed three types of performance can be failed in itself. | | | | | |
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| 17. List of readings   1. An electronic textbook is available from the lecturers (slides of the lectures in pdf format). 2. Constantly updated collection of scientific papers 3. chapters of recommended books | | | | | |
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| 18. Recommended texts, further readings   1. Pásztor, L. – Botta-Dukát, Z. – Magyar, G. – Czárán, T. – Meszéna, G. 2016: Theory-Based Ecology. A Darwinian approach. Oxford University Press, Oxford, 301 pp. ISBN: 9780199577859 2. Begon, M. – Townsend, C.R. – Harper, J.L. 2005: Ecology: From individuals to ecosystems. Fourth edition. Malden, Wiley-Blackwell, 750 pp., ISBN: 978-1-4051-1117-1 3. Begon, M. – Howarth, R.W. – Townsend, C.R. 2014: Essentials of Ecology, 4th Edition, Wiley, 480 pp., ISBN : 978-0-470-90913-3 | | | | | |
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| **Date** | 13 April, 2017 | **Prepared by** |  | | |
| Zoltán Csabai, PhD  responsible teacher | | |
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| **Endorsed by** | | |  | | |
| Dr. László Molnár program supervisor | | |