Academic course description

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| Bachelor**biology**3rd YEAR OF STUDY, 1ST SEMESTER |

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| **Course title** | **Hydrobiology** |
| Course code | B45 |
| Course type | full attendance |
| Course level | 1st cycle (bachelor) |
| Year of study, semester | 3rd year of study, 1st semester |
| Number of ECTS credits | 4 |
| Number of hours per week | 4 (2 lecture hours + 2 seminar hours) |
| Name of lecture holder | Gabriel-Ionuț Plavan |
| Name of seminar holder | Gabriel-Ionuț Plavan |
| Prerequisites | Advanced level of English  |
| A | **General and course-specific competences** |
|  | **General competences**:* Knowledge of water as an environment in which life appeared and is maintained.
* **Course-specific competences**:
* Deepening the structural, physical and chemical characteristics of water. Classification of water types and their characteristics.
* Knowledge of the peculiarities of hydrobiocenoses in inland and marine waters. Description of the adaptation of hydrobionts to the aquatic environment, depending on the physical, chemical characteristics and water dynamics.
* Biological characterization of impure waters (elements of saprobiology). Assessment of water self-purification capacity and protection of aquatic ecosystems.
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| B | **Learning outcomes** |
|  | * Operating with notions, concepts, laws and principles specific to the field.
* Characterization and classification of living organisms.
* Exploration of aquatic biological systems.
* Using models and algorithms to know the living world.
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| C | **Lecture content** |
|  | The object of study of HydrobiologyHydrological cycleWater as a natural resourceWater propertiesTypes of aquatic ecosystemsAssociations of aquatic organismsBioindicators of aquatic environment qualityWater pollution in a global perspectiveEcological reconstruction of aquatic ecosystems |
| D | **Recommended reading for lectures** |
|  | 1. Balian E.V., Leveque C., Segers H., Martens K., 2008 – Freshwater Animal Diversity Assesment, Springer
2. Fiundley S., Sinsabaugh R., 2003 – *Aquatic ecosystems*, Academic Press
3. McComas S., Lake and Pond Managemnt. Guide Book, Lewis Publishers
4. Nicoară M., 2008 - *Biodiversitatea mediilor acvatice*, PIM, Iaşi
5. Nicoară M., Ureche D., 2008, (Ediţia a II-a, completată şi revizuită)- *Ecologie acvatică*, PIM, Iaşi
6. O’Sullivan P.E., Reynolds C.S., 2005 – The Lakes Handbook, Vol. II, Blackwell Publishing
7. Roth R., 2009 – Freshwater Aquatic Bioms, Greenwood Press
8. Waldbauer G.P., 2006 – A walk around the pond, Harvard University Press
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| E | **Seminar content** |
|  | Sampling, storage and transport of water samplesInvestigation of the physico-chemical properties of the waterPlanktonNektonBenthosDetermination of water quality by bioindicators |
| F | **Recommended reading for seminars** |
|  | 1. Balian E.V., Leveque C., Segers H., Martens K., 2008 – Freshwater Animal Diversity Assesment, Springer Hauard R.F., Lamberti G.A., 2007 – Methods in stream Ecology. Second Edition, Academic Press
2. Crewe S., 2010 – In Rivers, Lakes and Ponds, Chelsea House Publishers
3. McComas S., Lake and Pond Managemnt. Guide Book, Lewis Publishers
4. Oscoz J., Galicia D., Miranda R., 2011 – Indentification Guide of Freshwater Invertebrates of Spain, Springer
5. Subramanian K.A., Sivaramakrishnan K.G., 2007 – Aquatic Insects for Biomonitoring Freshwater Ecosystems. Ecosystems – A Methodology Manual, Asoka Trust for Research in Ecology and Environment
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| G | **Education style** |
| learning and teaching methods | systematic exposure; conversation; didactic demonstration |
| assessment methods | Exam |
| Language of instruction | English |