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. | |
| 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. | |
| C | **Lecture content** | |
|  | The object of study of Hydrobiology  Hydrological cycle  Water as a natural resource  Water properties  Types of aquatic ecosystems  Associations of aquatic organisms  Bioindicators of aquatic environment quality  Water pollution in a global perspective  Ecological 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 | |
| E | **Seminar content** | |
|  | Sampling, storage and transport of water samples  Investigation of the physico-chemical properties of the water  Plankton  Nekton  Benthos  Determination 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 | |
| G | **Education style** | |
| learning and teaching methods | | systematic exposure; conversation; didactic demonstration |
| assessment methods | | Exam |
| Language of instruction | | English |