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

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| | Nekton<br>Benthos<br>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<br>2. Crewe S., 2010 – In Rivers, Lakes and Ponds, Chelsea House Publishers<br>3. McComas S., Lake and Pond Managemnt. Guide Book, Lewis Publishers<br>4. Oscoz J., Galicia D., Miranda R., 2011 – Indentification Guide of Freshwater Invertebrates of Spain, Springer<br>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 |