**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | SCHOOL OF HEALTH |
| **DEPARTMENT** | BIOLOGICAL APPLICATIONS AND TECHNOLOGY |
| **CURICULUM OF STUDIES**  | UNDERGRATUATE |
| **LESSON CODE NUMBER** | **ΒΕΕ802** | **SEMESTER** | **7th-9th** |
| **LESSON TITLE** | Limnology |
| **TEACHING ACTIVITIES** | **TEACHING HOURS PER WEEK** | **ECTS** |
| Theory  | 3 | 6 |
| Lab | 3 |
| **COURSE TYPE** | Specialised general knowledgeSkills Development |
| **PREQUISITIES:** | Zoology |
| **TEACHING AND EXAMINATION LANGUAGE:** | Greek (Teaching, Examination)English (Examination) |
| **ERASMUS**  | The course is offered to exchange students. |

1. **LEARNING OUTCOME**

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| **LEARNING OUTCOME** |
| The course of Limnology aims at acquiring knowledge and skills regarding:• the structure and function of freshwater ecosystems• the hydromorphological and physico-chemical characteristics of ecosystems• biota• the use of biotic factors for the assessment and monitoring of the ecological quality of surface waters according to the Directive (2000/60 / EC).It also aims at:• Acquiring the ability to use field measurement instruments• Sampling procedure• Taxonomic identification of major aquatic taxonomic groups (eg phytoplankton, zooplankton, benthic macroinvertebrates, fish)• Interpretation of the results of aquatic ecosystems management and conservation studies• Raising awareness on the protection and management of freshwater bodies aquatic  |
| **GENERAL SKILLS** |
| • Implementation in practice• Search, analyze and synthesize data and information, using the necessary technologies• Autonomous work• Environmental awareness• Criticism and self-criticism• Work at an interdisciplinary level• Promote free, creative and inductive thinking  |

1. **LESSON SUBJECT**

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| Origin of lakes and riversGeomorphological features and typologyPhysical characteristics of water (light, temperature, flow, etc.).Chemical components of water (O2, CO2, ions, pH, nutrients, sulfur, silicon oxide, conductivity, suspended particles).Organisms (benthos, plankton, nekton, macrophytes) and methods of sampling.Trophic relations.Productivity of aquatic ecosystems.Eutrophication, Pollution,Bioprocessing, biomarkers.Management. Legislation. Restoration.Laboratory exercises:1. Determination of nutrients.2. Measurement of chlorophyll,3. Recognition of zooplankton4. major biotic taxonomic groups5. Use of biotic indicators6. Using statistical packagesOutdoor exercises:Sampling in river ecosystems, recording of hydromorphological, physical and chemical characteristics - pressure assessment.Anthropogenic factors hydroelectric dams, reservoirs |

1. **TEACHING AND LEARNING METHODS - EVALUATION**

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| **COURSE OF TRAINING** | Face to face |
| **USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES** | • Use of ICT in Teaching• Use of ICT in Laboratory Education• Use of ICT in Communication with students |
| **TEACHING PROGRAMME** |

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| ***ACTIVITY*** | ***WORKLOAD*** |
| LECTURES | 39 |
| LABORATORY EXCERSISES | 8 |
| OUTDOOR EXCERSISES | 10 |
| PROSSESING OF SCIENTIFIC PAPERS | 8 |
| USE OF PC APPLICATIONS | 6 |
| TOTAL WORKLOAD | ***71*** |

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| **STUDENT EVALUATION** | Written examination, co-operational work, general assessment of the student's ability and interest.Methods of Student AssessmentWritten Examination with Short Response Questions Extensive Answer Writing Written report |

1. **ATTACHED BIBLIOGRAPHY**

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| Wetzel, R. G. 2006. Limnology, Third Edition: Lake and River Ecosystems. Academic press.*-ADITIONAL LITERATURE:*Limnology and OceanographyHydrobiologiaFreshwater biology |