**COURSE OUTLINE**

1. **GENERAL**

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| **SCHOOL** | SCHOOL OF HEALTH |
| **DEPARTMENT** | BIOLOGICAL APPLICATIONS AND TECHNOLOGY |
| **CURRICULUM OF STUDIES**  | UNDERGRATUATE |
| **LESSON CODE NUMBER** | **ΒΕΕ802** | **SEMESTER** | **7th-9th**  |
| **LESSON TITLE** | Ichthyology |
| **TEACHING ACTIVITIES** | **TEACHING HOURS PER WEEK** | **ECTS** |
| Theory  | 3 | 6 |
| Lab | 3 |
| **COURSE TYPE** | Specialised general knowledgeSkills Development |
| **PREREQUISITIES:** | 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** |
| Acquiring knowledge about systematics, anatomy, morphology, physiology, age and growth, reproduction, ecology and fish dynamics and stock management.Familiarization with morphology measurements. Analysis of morphometric relationships. Age determination. Determination of fertility. Analysis of nutrition and diet. Statistical methods analysis and estimation of biological parameters. Presentation of the FishBase database (www.fishbase.org.Fisheries, fisheries management of stocks.Fish migrations.The course of zoology aims at acquiring knowledge and skills regarding:Introduction to fish systematics. Form, motion and cruising motion. Anatomy, gut, skeleton, muscular system, circulation, circulatory system, blood, breathing, respiratory system, nutrition, development, digestive system, nervous system, senses, excretion, excretory system, osmotic regulation, reproduction, reproductive system, embryology , age, mortality.Fish Strategies.Aquatic environment: inland waters, brackish waters, lagoons, seas. Fisheries, distribution, ethology, behavior, adaptation, defense, protection, species relationships, trophic interactions, parasitism, fish population, fish migration. |
| **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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| History of Ichthyology, course objective.General characteristics of fish, morphology, systematics.Physiological elements (lateral line, osmosis, breathing, reproduction, feeding, movement, thermoregulation, buoyancy).Fish and abiotic environment. Biological relations between fish and other organisms.Age and growth, length-weight relationships, growth parameters.Reproduction and fertility.Nutrition, stomach content analysis and trophic levels.Mortality dynamics and exploitation in fish management.Using FiSAT, Fishbase Laboratory exercises:1. Fish morphology. Variation of characteristics.
2. Teeth, scales (Cyclostomata, Chondrichthyes, Osteicthyes) variations, diversity, etc.
3. Assays of Chondrichtyes and Osteicthyes.
4. Biometrics, morphometrics and division of characteristics.
5. Anatomy of Osteichthyes.
6. Biometrics, morphometrics and meristic of characters
7. Age and growth.
8. Fertility.
9. Mortality, models.
10. Computer Applications in Fisheries Biology. FISAT and FishBase presentation and use.

Outdoor exercisesDaily exercise in Lake Pamvotis. Fish sampling, fish examination, sample preservation, fishing gear and inland fishing, enrichment.Daily exercise at Amvrakikos Gulf: fishing equipment and gear, open sea fish species,fish populations, fishing production.Daily exercise in Louros River: wetlands and inland fish species, ecological zones and riparian rivers, fish population. |

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 exercises | 20 |
| Outdoor exercises | 8 |
| Interactive lecture | 6 |
| Total  | 73 |

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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  |

1. **ATTACHED BIBLIOGRAPHY**

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| *-* ΛΕΟΝΑΡΔΟΣ Ι. Ιχθυολογία . 2012. Εκδόσεις Παν. Ιωαννίνων ΣΤΕΡΓΙΟΥ K.Ι., Π.Κ.KΑΡΑΧΛΕ, Α.Χ. ΤΣΙΚΛΗΡΑΣ & Η. ΜΑΜΑΛΑΚΗΣ. 2011. Κραυγή ιχθύος. Ψάρια ελληνικών θαλασσών – Βιολογία, αλιεία, διαχείριση. 358 σελ. Εκδόσεις Πατάκης,  |