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| **COURSE IDENTIFICATION FORM** |
| **Course Code and Name:** : SM-556 Methods of Biochemical Analysis in Aquatic Animal | **Department of :** |
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| **Semester** |

 | **Theoretic Hour** | **Practice Hour** | **Total Hour** | **Credits** | **ECTS** | **Education Language** | **Type: Compulsory Elective** |
| Fall | 2 | 3 | 3 | 3 | 6 | Turkish | Optional |
| **Prerequisite (s)** |  |
| **Instructor** | Prof. Dr. Azime KÜÇÜKGÜL | **Mail : akucukgul@munzur.edu.tr** **Web :** |
| **Course Assistant** |  | **Mail :****Web :** |
| **Groups / Classes** |  |  |
| **Course Aim** | The aim of the course is to enable introduction of tools and apparatus used in the biochemistry laboratory, giving of the basic theoretical information related to biochemical methods, practices |
| **Course Goals** | * The presentation of the instruments and apparatus in biochemistry laboratory, the basic laboratory techniques, pH, buffer preparation, homogenization methods, centrifugation, spectrophotometric methods, chromatographic methods, flow sitomert, hematological measurement methods, electrophoresis methods
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| **Course Learning Outs and Proficiencie*s*** | * Will learn biochemistry concepts and using of basic biochemistry laboratory instruments and apparatus
* Will be able to learn weighing and obtaining of samples used in biochemical research and the solution preparation
* Will be able to learn and review tissue and cell homogenization and centrifugation applications
* Will be able to learn and review Postmortem and live examination of the fish diseases and the points to be considered

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| **Course Basic and Auxiliary Contexts** | * Lehninger Principles of Biochemistry, David L. Nelson, Michael M.Cox Textbook of Biochemistry With Clinical Correlations
* Tietz textbook of clinical chemistry and molecular diagnostics. Edited by: Carl A. Burtis, Edward R. Ashwood, David E. Burns. Elsevier Saunders. 2006
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| **Methods of Give a Lecture** | Lecture, The relevant notes from application, Question-answer, Discussion, Individual study, Relevant web information |

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| **Assessment Criteria** |  | **If Available, to Sign (x)** | **General Average Percentage (%) Rate** |
| **1. Quiz** | **X** | **40** |
| **2. Quiz** |  |  |
| **3. Quiz** |  |  |
| **4. Quiz** |  |  |
| **5. Quiz** |  |  |
| **Oral Examination** |  |  |
| **Practice Examination (Laboratory, Project etc.)** |  |  |
| **Final Examination** | **X** | **60** |
| **Semester Course Plan** |
| **Week** | **Subjects** |
| **1** | Basic knowledge of biochemistry |
| **2** | The basic tool and equipments used in biochemistry laboratories  |
| **3** | Solutions |
| **4** | The samples used in biochemical investigations |
| **5** | General information about the homogenization techniques, the introduction of homogenizer |
| **6** | Centrifugation techniques |
| **7** | Spectrophotometric methods |
| **8** | Intermediate exam |
| **9** | Chromatography |
| **10** | Electrophoresis |
| **11** | Basic principles of biochemical analysis in aquatic animals |
| **12** | Hematological tests |
| **13** | The basic principles of chromatography  |
| **14** | Flow Cytometry |