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| **COURSE IDENTIFICATION FORM** |
| **Course Code and Name:**SM-648 Fish Feeding Physiology and Biochemistry | **Department of :**Fisheries Ph.D. |
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| **Semester** |

 | **Theoretic Hour** | **Practice Hour** | **Total Hour** | **Credits** | **ECTS** | **Education Language** | **Type: Compulsory Elective** |
|  | 3 | 0 | 3 | 3 | 5 | Turkish | Optional |
| **Prerequisite (s)** | None |
| **Instructor** | Prof. Dr. Durali DANABAŞ | **Mail : ddanabas@munzur.edu.tr****Web :** |
| **Course Assistant** |  | **Mail :****Web :** |
| **Groups / Classes** |  |  |
| **Course Aim** | The aim of this course is to provide learning of fish feeding and nutrition determination of finfish species in culture stages that are ones of the most important points in aquaculture and feeding physiology in fish. |
| **Course Goals** | * It will be explained importance of fish feeding, nutritional requirements of freshwater and sea finfish species; feeding physiology; metabolism, growth, appetite- repletion, digestion and its enzymes; and nutrition components.
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| **Course Learning Outs and Proficiencie*s*** | 1. He will be able to grip importance of fish feeding.  1.1. He knows importance of fish feeding.  1.2. He grips its place in aquaculture. 2. He will be able to learn nutritional requirements of freshwater and sea finfish species. 2.1. He knows the nutritional requirements in feed of freshwater and sea finfish species.  2.2. He compares culture of different fish species. 3. He will be able to grip feeding physiology. 3.1. He dominates metabolism, growth, appetite- repletion, digestion and its enzymes.  3.2. He knows nutrition components. |
| **Course Basic and Auxiliary Contexts** | * Alpbaz, A., 2005. Su Ürünleri Yetiştiriciliği. Alp Yayınları, Bornova, İzmir, 548s.
* Atay, D., 1994. Deniz Balıkları ve Üretim Tekniği. Ankara Üniversitesi Ziraat Fakültesi, Yayın No:1352, Ders Kitabı:392, Ankara, 316s.
* Dikel, S., 2005. Kafes Balıkçılığı. Çukurova Üniversitesi Su Ürünleri Fakültesi Yayınları, Yayın No:18, Adana, 213s.
* Dikel, S., 2009. Tilapia Yetiştiriciliği. T.C. Gıda, Tarım ve Hayvancılık Bakanlığı Tarımsal Üretim ve Geliştirme Genel Müdürlüğü Yayınları, Ankara, 250s.
* Emre, Y., Kürüm, V., 2007. Havuz ve Kafeslerde Alabalık Yetiştiriciliği. Posta Basım, İstanbul, 272s.
* Hoşsu, B., Korkut, A.Y., Kop, A.F., 2008. Balık Besleme ve Yem Teknolojisi I (Balık Besleme Fizyolojisi ve Biyokimyası). Ege Üniversitesi Yayınları, Su Ürünleri Fakültesi Yayın No: 50, Ders Kitabı Dizin No:19, İzmir, 276s.
* Hoşsu, B., Korkut, A.Y., Kop, A.F., 2008. Balık Besleme ve Yem Teknolojisi II (Laboratuvar Uygulamaları ve Yem Yapım Teknolojisi). Ege Üniversitesi Yayınları, Su Ürünleri Fakültesi Yayın No: 54, Ders Kitabı Dizin No:23, İzmir, 320s.
* Sarıhan, E., 1995. Balık Üretimi. Çukurova Üniversitesi Ziraat Fakültesi Ders Kitabı No:39, Adana, 210s.
* Tekelioğlu, N., 2005. İç Su Balıkları Yetiştiriciliği. Adana Nobel Kitabevi Yayınları, Adana, 278s.
* Tekelioğlu, N., 1998. Deniz Balıkları Yetiştiriciliği, Baki Kitabevi Yayınları, Adana, 226s.
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| **Methods of Give a Lecture** | Lecture, Question and answer, Discussion, Brain storming, Individual work |

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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** | 1. Week: Present status and importance of aquaculture in our country, Importance of fish feeding,
 |
| **2** | 1. Week: Feeding behavior and feed intake in fish, Appetite-repletion, Gastrointestinal system and digestion of nutrition, Larval development and digestion physiology,
 |
| **3** | 1. Week: Digestion excretion and enzymes, Energy and maintenance of energy,
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| **4** | 1. Week: Metabolism, Excretory system,
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| **5** | 1. Week: Growth, The factors effecting growth,
 |
| **6** | 1. Week: Proteins, Amino acids, Their properties and varieties,
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| **7** | 1. Week: Digestion of amino acids, Mission of proteins and usage, Protein and amino acid requirements in fish, Protein sources in feeds,
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| **8** | 1. Week: Vise,
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| **9** | 1. Week: Lipids, Fatty acids and properties, Environmental factors effecting fatty acids requirements, Lipid sources,
 |
| **10** | 1. Week: Carbohydrates, Mission of carbohydrates and usage, Carbohydrates sources,
 |
| **11** | 1. Week: Vitamins, Vitamin requirements in fish and deficiency symptoms, Vitamins being in feed raw materials,
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| **12** | 1. Week: Minerals, Mineral rates using fish feeds,
 |
| **13** | 1. Week: Feeding disease in fish,
 |
| **14** | 1. Week: Investigation and discussion of articles related to fish feed physiology and nutrition components,
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