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| **COURSE IDENTIFICATION FORM** |
| **Course Code and Name:**SM-619 Feed Additives in Fish Feeding | **Department of :**Fisheries Ph.D. |
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| **Semester** |

 | **Theoretic Hour** | **Practice Hour** | **Total Hour** | **Credits** | **ECTS** | **Education Language** | **Type: Compulsory Elective** |
|  | 2 | 2 | 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 understanding of the mixed feeds in aquaculture, effects of feeds and process on feeding, raw materials and properties, using preparing of mixed feeds, and properties and effects of feed additives. |
| **Course Goals** | * It will be explained importance of fish feeding; nutritional requirements of freshwater and sea finfish species; feeding physiology; nutrition components; mixed feeds in aquaculture; effects of feeds and process on feeding preparation; raw materials and properties, using preparing of mixed feeds and properties and effects of feed additives.
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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 mixed feeds in aquaculture and effects of feeds and process on feeding preparation. 3.1. He knows mixed feeds in aquaculture and effects of feeds and process on feeding preparation.  3.2. He knows raw materials and properties, using preparing of mixed feeds.4. He will be able to distinguish feed additives. 4.1. He knows properties and effects of feed additives. 4.2. He comments the results. |
| **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,
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| **2** | 1. Week: Feeding behavior and feed intake in fish, Gastrointestinal system and digestion of nutrition,
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| **3** | 1. Week: Digestion excretion and enzymes, Metabolism, Growth,
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| **4** | 1. Week: Raw materials of feeds, Feed additives,
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| **5** | 1. Week: Importance of feed additives in fish feeding,
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| **6** | 1. Week: Properties of feed additives,
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| **7** | 1. Week: Feed additives adding into fish feeds, Application of raw materials containing pigments, Algae,
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| **8** | 1. Week: Vise,
 |
| **9** | 1. Week: Probiotics and prebiotics,
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| **10** | 1. Week: Hormones,
 |
| **11** | 1. Week: Antibiotics,
 |
| **12** | 1. Week: Vitamins and minerals,
 |
| **13** | 1. Week: Other feed additives,
 |
| **14** | 1. Week: Investigation and discussion of articles related to feed additives,
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