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| **COURSE IDENTIFICATION FORM** |
| **Course Code and Name:**SM-550 Comparative Fish Endocrinology | **Department of :**Fisheries M.Sc. |
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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 anatomic and physiologic structures and interactions with each other of endocrine system and its components as comparative among live groups (vertebrate, invertebrate, insect, bird, fish, reptile, mammalian etc.).  |
| **Course Goals** | It will be explained the endocrinology and chemical messengers in lives, anatomic and physiologic structures and hierarchical structure of endocrine system and its components and these components among lives groups (vertebrate, invertebrate, insect, bird, fish, reptile, mammalian etc.) as comparative. |
| **Course Learning Outs and Proficiencie*s*** | 1. He will be able to know the endocrinology and chemical messengers in lives.  1.1. He identifies endocrinology.  1.2. He knows the kinds and features of chemical messengers. 2. He will be able to learn anatomic and physiologic structures and hierarchical structure of endocrine system and its components. 2.1. He knows anatomic and physiologic structures of endocrine system.  2.2. He comments hierarchical structure of endocrine system. 3. He will be able to compare endocrinological components among lives groups. 3.1. He identifies endocrinological components in other live groups.  3.2. He compares among live groups. |
| **Course Basic and Auxiliary Contexts** | * Emre, Y., Kürüm, V., 2007. Havuz ve Kafeslerde Alabalık Yetiştiriciliği. Posta Basım, İstanbul, 272s.
* Tekelioğlu, N., 2005. İç Su Balıkları Yetiştiriciliği. Adana Nobel Kitabevi Yayınları, Adana, 278s.
* Tekelioğlu, N., 1998. Deniz Balıkları Yetiştiriciliği, Baki Kitabevi Yayınları, Adana, 226s.
* Timur, M., 2006. Balık Fizyolojisi. Nobel Yayın Dağıtım, Nobel Yayın No: 957, Ankara, 183s.
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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: Definition of endocrinology, Definition of hormone, Neuroendocrine system,
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| **2** | 1. Week: History of endocrinology, The methods and its details using in endocrinology,
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| **3** | 1. Week: Chemical messengers in lives, Hormones, Neurohormones, Neurohumors, Their properties and effects,
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| **4** | 1. Week: Parahormones, Phytohormones, Pheromones, Their properties and effects,
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| **5** | 1. Week: Endocrine system in invertebrate, Neurosecretion in Polychaeta, Neurosecretion in Olygochaeta, Endocrine system in Crustacea,
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| **6** | 1. Week: Endocrine system in insects, Neurosecretion cells, Neurohaemal organs, Endocrine glands,
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| **7** | 1. Week: Metamorphosis in insects, Physiological interactions,
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| **8** | 1. Week: Vise,
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| **9** | 1. Week: Change of color and its hormonal control in insects, Mechanism of action of hormones, Using of insect hormones in control of hazardous insects,
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| **10** | 1. Week: Endocrine system in vertebrate, Pituitary, Comparative anatomy of pituitary, Pituitary hormones and their comparison,
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| **11** | 1. Week: Thyroid gland, Comparative anatomy of thyroid, Thyroid hormones and their comparison,
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| **12** | 1. Week: Parathyroid gland, Pancreas, Insulin and glucagon mechanism and their comparison,
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| **13** | 1. Week: Gastrointestinal hormones, Adrenal gland, Cortex hormones and their comparison,
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| **14** | 1. Week: Gonads, Comparison of gonads, Comparison of ovary and testis, Urohypophysis and its hormones, Investigation and discussion of articles related to endocrinology in fish
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