****

**Department of Fish Res. And Aquatic Animals**

**College of Agriculture Engineering Sciences**

**Salahaddin University-Erbil**

**Subject: Fish Taxonomy**

**Course Book – (Year: 2nd)**

**Lecturer's name: Gashaw F. Agha**

**Course Book**

|  |  |
| --- | --- |
| **1. Course name** | **Fish Taxonomy** |
| **2. Lecturer in charge** | **Gashaw F. Agha** |
| **3. Department/ College** | **Fish Res. Dept./ College of Agriculture Engineering Sciences** |
| **4. Contact** | **Gashaw.agha@su.edu.krd** |
| **5. Time (in hours) per week**  | **Theoritical 2 th + Practical: 3 hrs**  |
| **6. Office hours** | **12hrs** |
| **7. Course code** |  |
| **8. Course overview:**  Taxonomy is basically the science of correctly naming species. The term has often been confused with fish identification, which basically refers to the use of the latest taxonomic information to identify fishes. The job of the Fish Taxonomist is to name and classify species in a way that makes it easier for fisheries scientists, and other “users”, to correctly identify fish species during their work. In other words, fish taxonomy is practiced by very few, whereas fish ident ification is practised daily by many people. Most readers of Catch and Culture have probably noticed the complicated scientific names of fish species written in brackets after the common name. These names are often difficult to pronounce and hard to remember. It is a lot easier for most of us to recall a name in our own language. So what do we need them for and what do they mean? The problem with local names is that they are different from country to country and sometimes even between different regions within the same country.Communication and exchange of information across borders is absolutely essential to science as is consistent identification of species. Therefore, we must be able to refer to any fish species by a name that is common to everybody, anywhere in the world. This is the only way we can ensure that we talk about the same species. All fishes (and other animals and plants) are therefore given unique names. These names are divided into two components derived from the classical old  European languages Latin or Greek. It was the Swedish naturalist Carl von Linné (1707-1778) who developed the current binomial (two part) naming system. He actually got so engrossed in naming things he even managed to re-name himself in the process (to Carolus Linnaeus). |
| **9. Course objective (Intended Learning Outcomes)**1. Know a lot of information about the fish taxonomy.
2. Recognize fishes among the other organisms.
3. Understanding the advantages of a scientific nomenclature.
4. Recognize live fish groups.
5. Understanding the relationships between fishes and the other Kingdome.
6. Using of keys for fish identification.
 |
| **10. Student's obligation** Students must attend at the lectures. At the beginning of each lecture, they are done a quiz about last lecture. At the end of each lecture, I will ask one or two question/s about the present lecture. For the next lecture, students must bring their own answers. Each student must make one assignment about a group of fishes. |
| **11. Forms of teaching** Different forms of teaching will be applied to reach the objectives of the course: power point presentations for the head titles, definitions and description images, summary of conclusions, classification of materials and any other illustrations, besides worksheet will be designed to let the chance for practicing on several aspects of the course in the classroom, furthermore students will be asked to prepare fortnightly reports about selective topics.  |
| **12. Assessment scheme** The students are required to do one closed book exam at the mid of the semester besides other assignments including daily activities, quizzes, and experimental results and precise. The exam includes 10 marks, classroom activities; quizzes and precise works counts 5 marks. There will be a final exam on 15 marks.‌ |
| **13. Student learning outcome:***After this term students should be able to...*1. Obtain general information about fish taxonomy and the phylum of chordates.
2. Explain the traits of fish classes and orders.
3. Identify the genera of different families and make a difference between them
4. Describe the properties of genera and species.
5. Diagnose the different types of fishes which found in our country.
6. Make the difference between the genera of different fishes.
 |
| **14. Course Reading List and References‌:****Book:** 1- Coad, B. (2010). Keys of Iraqi Freshwater fishes.2- ---------. (1978). Evolutionary development and Phylogeny of life fisfes. WBC, London, 341 pp. 3-http//: [www.](http://www.amazon.co.uk/Another-Kingdom-Amazing-World-Fungi/dp/1906129673/ref%3Dsr_1_8?ie=UTF8&qid=1447864574&sr=8-8&keywords=kingdom+of+fungi) Fishbase.com. 20151. Neeson, T. M. (2010). Sea lamprey (Petromyzon marinus) habitat and population models in Michigan river networks: Understanding geomorphic context and boundaries. Natural Resources and Environment, Univ. Michigan. 125 pp.
2. Neeson, T. M. and Nilson, G. M. (2012). Key of the families of freshwater fishes of new hemisphere. WBCs Publ., 72 pp.

**Useful internet references**a. http://www.fishbase.org b. http://www.life.evo.edu.html c. http://www.agnatha.com d. http://www.gnathostomata.com |
| **15. The Topics:** | **Lecturer's name** |
|  | ex: (3 hrs)ex: / /2022 |
|  |
|

|  |  |
| --- | --- |
| **Weeks** | **Lectures** |
| 1. | 1. Fish Taxonomy
* What are the Tools of Taxonomy?
* Why do the names change?
 |
| 2. | * Terminology
 |
| 3. | * Terms for groups of organisms
 |
| 4. | * Taxonomic identification keys
 |
| 5. | * Class: agnatha

LampreysHagfishes |
| 6. | 1st Exam |
| 7. | * Class: Chondrichthys

Elasmobranch fishes |
| 8. | * Class: Chondrichthys

Sting ray FishesSharkesChimerias |
| 9. | * Class: Actinopterygii

Family: Mastacembelidae. |
| 10. | * Class: Actinopterygii

Family: Cichlidae |
| 11. | * Class: Actinopterygii

Family: Siluridae |
| 12. | * Class: Actinopterygii

Salmonidae |
|  | * Class: Actinopterygii
* Family: Cyprinidae
 |
|  | 2nd Exam |

 | **Lecturer's name****Didar Othman****ex: (3hrs)****ex: / /2022** |
| **16. Practical Topics** **In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture** **Course Book****Introduction of Fish Taxonomy****History of Fish Taxonomy****Key of Fish** **Cyprinidae Family** ***Cyprinus carpio*  and some species*****Aribibarbus grypus* and some species****Siluridae Family****Mastacembulidae Family****Mugilidae Family** |
| **17. Examinations:*****1. Compositional:*** What are the main groups of life fishes?***2.******True or false type of exams:*****All petromyzones are true parasitic..*****3. Multiple choices:*****it can reproduce in three different ways.** A-Chondrychthes B-Salmoniphormes C-Craniata D-Keys.4. **Fill the gaps with the convenient word?****Velume is a ………………. Between ……….. and ……………….** |