|  |  |
| --- | --- |
| **Course Title:** | **Ichthyology** |
| **Course Code:** | **Zoo 320** |
| **Program:** | **Zoology** |
| **Department:** | **Zoology** |
| **College:** | **Science** |
| **Institution:** | **King Saud University** |

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# A. Course Identification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1. Credit hours:** | | | | **2 (1+0+2)** | | | | | | | | | | | | |
| **2. Course type** | | | | | | | | | | | | | | | | |
| **a.** | University | |  | | College | | |  | Department | | | |  | Others |  |  |
| **b.** | | Required | | | |  | Elective | | |  |  | | | | | |
| **3. Level/year at which this course is offered:** | | | | | | | | | | | | **Level 5** | | | | |
| **4. Pre-requisites for this course** (if any)**: ZOO 305** | | | | | | | | | | | | | | | | |
| **5. Co-requisites for this course** (if any)**: None** | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |

## 6. Mode of Instruction (mark all that apply)

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage** |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** | **22.4** | **80%** |
| **2** | **Blended** |  |  |
| **3** | **E-learning** |  |  |
| **4** | **Correspondence** | **4.2** | **15%** |
| **5** | **Other** | **1.4** | **5%** |

**7. Actual Learning Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Learning Hours** |
| **Contact Hours** | | |
| **1** | **Lecture** | **28** |
| **2** | **Laboratory/Studio** | **14** |
| **3** | **Tutorial** |  |
| **4** | **Others** (specify) |  |
|  | **Total** | **42** |
| **Other Learning Hours\*** | | |
| **1** | **Study** |  |
| **2** | **Assignments** |  |
| **3** | **Library** |  |
| **4** | **Projects/Research Essays/Theses** |  |
| **5** | **Others** (specify) |  |
|  | **Total** |  |

**\*** The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

# B. Course Objectives and Learning Outcomes

|  |
| --- |
| 1. Course Description |
|  |
| 2. Course Main Objective |
| **1- Classification of fish.**  **2- Fish Biology, external and internal features.**  **3- Fish diversity of Saudi Arabia.**  **4- Fish ecology and Zoogeography.** |

## 3. Course Learning Outcomes

| **CLOs** | | **Aligned****PLOs** |
| --- | --- | --- |
| 1 | **Knowledge:** |  |
| 1.1 | Recognize Fish classification based on taxonomic procedures |  |
| 1.2 | Define Ecological factors affecting distribution. |  |
| 1.3 | Record fish presence in Saudi Arabia. |  |
| 1.4 | Identify different systems and their functions. |  |
| **2** | **Skills:** |  |
| 2.1 | Compare different species of fish based on their morphological Characters. |  |
| 2.2 | To dissect and handle Selected examples of fish to compare different organs structures |  |
| 2.3 | To Analyze fish foods. |  |
| **3** | **Competence:** |  |
| 3.1 | To be able to work in a team to dissect fish and recognize internal system. |  |
| 3.2 | To be able to discuss results of work in groups. |  |
| 3.3 | Ability to write and present reports about selected domestic fish species |  |
| 3.4 | Ability to use computers and internet to retrieve information on fish biology. |  |

# C. Course Content

|  |  |  |
| --- | --- | --- |
| **No** | **List of Topics** | **Contact Hours** |
| 1 | **Introduction** | **1** |
| 2 | **Fishes habitat** | **3** |
| 3 | **Different Body Systems** | **6** |
| 4 | **Growth and age** | **1** |
| 5 | **Specialized organs in fish** | **1** |
| 6 | **Fish diversity of Saudi Arabia** | **1** |
| **Total** | |  |

# D. Teaching and Assessment

## 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| **Code** | **Course Learning Outcomes** | **Teaching Strategies** | **Assessment Methods** |
| --- | --- | --- | --- |
| **1.0** | **Knowledge** | | |
| 1.1 | Recognize Fish classification based on taxonomic procedures | Lectures are given using Power Point, presentation and illustrations.  Practical studies.  Reports | Quizzes  Midterm  Final exam |
| 1.2 | Define Ecological factors affecting distribution. |
| 1.3 | Record fish presence in Saudi Arabia. |
| 1.4 | Identify different systems and their functions. |
| **2.0** | **Skills** | | |
| 2.1 | Compare different species of fish based on their morphological Characters. | Using illustrations materials  Laboratory training  Fields and lab work | Quizzes  Midterm and  Final exam  Evaluation of activities and lab work. |
| 2.2 | To dissect and handle Selected examples of fish to compare different organs structures |
| 2.3 | To Analyze fish foods. |
| **3.0** | **Competence:** | | |
| 3.1 | To be able to work in a team to dissect fish and recognize internal system. | Practical studies  Illustrations  Reports and oral presentation  Assignments.  Encouraging students to participate in group discussion and do assignments  Students are asked to write and present reports. | Assessment of group work.  Assessment of Individual work.  Evaluating the activities of the students  Evaluating the practical studies |
| 3.2 | To be able to discuss results of work in groups. |
| 3.3 | Ability to write and present reports about selected domestic fish species |
| 3.4 | Ability to use computers and internet to retrieve information on fish biology. |

## 2. Assessment Tasks for Students

| **#** | **Assessment task\*** | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | **Reports - activities and homework** | **3-6-9-12** | **15%** |
| **2** | **Midterm Exam.** | **9** | **15%** |
| **3** | **Lab. report** | **12** | **5%** |
| **4** | **Lab. Exam.** | **13** | **25%** |
| **5** | **Final Exam.** | **15** | **40%** |
| **6** |  |  |  |
| **7** |  |  |  |
| **8** |  |  |  |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# E. Student Academic Counseling and Support

|  |
| --- |
| **Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:** |
| * **The supervision done by the staff member over lab. Sessions.** * **Office hours 7 hr/ week** |

# F. Learning Resources and Facilities

## 1.Learning Resources

|  |  |
| --- | --- |
| **Required Textbooks** | 1. Khanna, S. S. and Singh, H. R. (2013). A text book of fish biology and fisheries. Narendra Publishing House, Delhi, India. 2. Al-Balawi, H. F. (2005). Ichthylogy. KSU, Saudi Arabia. 3. Sumich, J. L. and Morrissey, J. F. (2004). Introduction to the biology of marine life. Jones and Bartlett Publishers international, Barb House, Barb Mews, London W6 7PA, UK. 4. Amin, I. M. (1994), Introduction of Ichthylogy. College of Science, Qatar University, Qatar. |
| **Essential References Materials** | **Bone *et al.*, (1999). Biological of fishes (2nd edition). Stanley Thornes (Publisher).** |
| **Electronic Materials** | **Websites on the internet that are relevant to the topics of the course** |
| **Other Learning Materials** | **Microsoft office package** |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**  (Classrooms, laboratories, demonstration rooms/labs, etc.) | **Modern lecture rooms equipped with all materials.**  **Modern laboratories.** |
| **Technology Resources**  (AV, data show, Smart Board, software, etc.) |  |
| **Other Resources**  (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | **Microscopes – fish tissue sections – incubators – autoclaves –water baths – Water quality measurements- fish aquaria safety facilities.** |

# G. Course Quality Evaluation

| **Evaluation**  **Areas/Issues** | **Evaluators** | **Evaluation Methods** |
| --- | --- | --- |
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**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

# H. Specification Approval Data

|  |  |
| --- | --- |
| **Council / Committee** |  |
| **Reference No.** |  |
| **Date** |  |