Ichthyology - BIOL 4432/5432
Department of Life Sciences
Fall 2015

A. COURSE INFORMATION

Course number/section: BIOL 4432/5432
Class meeting time: Lecture 11:00 – 12:15 TR, Lab 2:00 – 4:50pm, 5:00 – 7:50pm T
Class location: Lecture CI-122, Lab CS-235
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Dr J Derek Hogan
Office location: HRI 102
Office hours: 10:00-12:00 T
Telephone: 825-5883
e-mail: james.hogan@tamucc.edu
Appointments: Upon request when available

Instructor: Dr David S Portnoy
Office location: HRI 213D
Office hours: 1:30-3:30 T
Telephone: 825-2859
e-mail: david.portnoy@tamucc.edu
Appointments: Upon request when available

C. COURSE DESCRIPTION

Catalog Course Description
Fish are fascinating animals and phenomenally diverse. They occur in both fresh and saltwater habitats and inhabit all parts of the globe. Together we will learn about the biology, ecology, systematics and evolution of fishes in a broad global context. Prerequisite: A strong background in zoology will be useful for this course, as such BIOL 3414 is a prerequisite, failing that formal consent of instructor may be given. 4 sem. hrs. (3:3)

D. PREREQUISITES AND COREQUISITES

Prerequisites
BIOL 3414 and SMTE 0091 OR formal consent of instructor

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

1
**Required Textbook(s)**

- Merryman, Rainer, McKee & Murdy. 2012. McKee “key” (2nd ed.) Available for free at: [http://texas-seagrant.tamu.edu/WhatWeDo/online%20publications/FishKey/SaltWaterKey020813sm.pdf](http://texas-seagrant.tamu.edu/WhatWeDo/online%20publications/FishKey/SaltWaterKey020813sm.pdf) (required).
- McEachran & Fechhelm. 2005. Fishes of the Gulf of Mexico (required but there is a copy in the lab)

**Optional Textbook(s) or Other References.**


**Supplies**

None

**F. STUDENT LEARNING OUTCOMES AND ASSESSMENT**

By the end of this course, students should be able to:

1. Demonstrate an understanding of the basic anatomy and physiology of fishes.
2. Demonstrate and understanding of the form, function and diversity of fishes globally
3. Exhibit knowledge of the evolutionary relationships between groups of fishes
4. Demonstrate an understanding of the biogeography of fishes globally
5. Demonstrate an ability to identify common species in Texas and beyond our area

**INSTRUCTIONAL METHODS AND ACTIVITIES**

This course will be a combination of lecture section which will include traditional lecture, discussion, in class demonstrations (through video). It will also include a laboratory section that will further enforce concepts from class using field trips and hands-on learning experiences.

**G. MAJOR COURSE REQUIREMENTS AND GRADING**
### ACTIVITY % of FINAL GRADE

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>15%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td>Lab Practical</td>
<td>16%</td>
</tr>
<tr>
<td>Lab Attendance/Participation</td>
<td>4%</td>
</tr>
<tr>
<td>Species Scavenger Hunt</td>
<td>5%</td>
</tr>
<tr>
<td>Fish Osteology Project</td>
<td>8%</td>
</tr>
<tr>
<td>Weekly Lab Exercises</td>
<td>7%</td>
</tr>
</tbody>
</table>

### H. COURSE CONTENT/SCHEDULE

[Delete and insert a list of topics (by day or week) including dates, reading assignments, homework problems, or other activities. Indicate exam dates, holidays, and any other important dates for students such as the last day to drop the class.]

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/27</td>
<td>Course Introduction</td>
<td>Dave/Derek</td>
</tr>
<tr>
<td>9/1</td>
<td>Skeleton Skin Scales</td>
<td>Dave</td>
</tr>
<tr>
<td>9/3</td>
<td>Neurosensory Systems</td>
<td>Dave</td>
</tr>
<tr>
<td>9/8</td>
<td>Respiration and Circulation</td>
<td>Derek</td>
</tr>
<tr>
<td>9/10</td>
<td>Metabolism, mineral balance &amp; thermoregulation</td>
<td>Derek</td>
</tr>
<tr>
<td>9/15</td>
<td>Bouyancy &amp; Locomotion</td>
<td>Derek</td>
</tr>
<tr>
<td>9/17</td>
<td>Reproductive biology &amp; development</td>
<td>Derek</td>
</tr>
<tr>
<td>9/22</td>
<td>History of ichthyology and systematics</td>
<td>Derek</td>
</tr>
<tr>
<td>9/24</td>
<td>Exam 1</td>
<td>Derek</td>
</tr>
<tr>
<td>9/29</td>
<td>Systematics I: evolution of fishes Early fishes Agnatha and early Gnathostomes</td>
<td>Derek</td>
</tr>
<tr>
<td>10/1</td>
<td>Systematics II: Chondrichthys</td>
<td>Dave</td>
</tr>
<tr>
<td>10/6</td>
<td>Systematics III: Bony Fishes I, Ancient Lineages Sarcopterygii through Neopterygians</td>
<td>Dave</td>
</tr>
<tr>
<td>10/8</td>
<td>Systematics IV: Bony Fishes II, Osteoglossomorpha, Elopomorpha, Ostarioclupeomorpha</td>
<td>Derek</td>
</tr>
<tr>
<td>10/13</td>
<td>Systematics V: Boney Fishes III Euteleosti – Protacanthopterygii – Paracanthopterygii</td>
<td>Dave</td>
</tr>
<tr>
<td>10/15</td>
<td>Systematics VI: Boney Fishes IV, Euteleosti - Acanthopterygii – Mugiliformes-Beryciformes</td>
<td>Dave</td>
</tr>
</tbody>
</table>
10/20  Systematic VII Euteleostei – Acanthopterygii-Scorpaeniformes – Tetraodontiformes  Dave
10/22  Open Date
10/27  Exam 2
10/29  Introduction to Zoogeography of fishes  Derek
11/3   Marine fishes of the Gulf of Mexico  Dave
11/5   Freshwater fishes of Texas  Derek
11/10  Polar, Temperate marine fishes  Derek
11/12  Semitropical, Tropical marine fishes  Derek
11/17  Freshwater fishes  Derek
11/19  Deep sea fishes, cave fishes and other extreme environments  Dave
11/24  Open Date
11/26  Graduate Student Lectures
12/1   Exam Review
12/3 – 12/9 Exam Week

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

I. COURSE POLICIES

Attendance/Tardiness
Attendance is not taken but participation is graded and students are tested on materials presented in class. Therefore, both tardiness and lack of attendance are likely to negatively impact grades.

Late Work and Make-up Exams
A note is required to excuse students from all graded in class work such as exams, paper discussions and field trips. Students will be given a chance to make-up the work but it must be done in a timely manner.

Extra Credit
Extra credit may be available as bonus question on exams at the instructors’ discretion.

Cell Phone Use
Please refrain from using cell phones in class, this include texting, tweeting, posting or any other such shenanigans.
Laptop (Tablet) Use
Laptop use in class is permitted as long as the student is using it to facilitate the learning process. Appropriate uses include; taking notes, looking up materials during discussion and looking at relevant papers. Inappropriate uses include; checking email, looking at Facebook and playing Hello Kitty Island Adventure. If a student continually abuses the privilege of using a laptop in class they will be asked not to use it any more.

Food in Class
Eating in class is not prohibited unless it proves disruptive.

J. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior.
  See Full University Policy at [http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity](http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity)

- **Classroom/Professional Behavior**

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course by November 6, 2015. No student is eligible to receive a W without completing the official drop process by this deadline. Visit the Office of the University Registrar for the Course Drop Form that must be submitted. After November 6, 2015 a student will not be allowed to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate
department or school, the Office of the College of Science and Engineering Dean, or the
Office of the Provost.

- **Disability Services**
  Disability Services (DS) is the hub for coordinating services and accommodations to
ensure accessibility and utilization of all programs for all Texas A&M University-
Corpus Christi students with disabilities. Our services are designed to meet the
unique educational needs of enrolled students with documented permanent or
temporary disabilities. DS provides intake and consultation services to students
seeking to register with our office. DS reviews an individual’s documentation of
disability and assesses eligibility for services and the determination of reasonable
accommodations. For more information visit the Disability Services Office at 116
Corpus Christi Hall or go to [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

**GENERAL DISCLAIMER**
I reserve the right to modify the information, schedule, assignments, deadlines, and course
policies in this syllabus if and when necessary. I will announce such changes in a timely
manner during regularly scheduled lecture periods.