

**BIOLOGY 448/443**  
**Biology and Ecology of Freshwater Fish**  
**SPRING 2014**

**Instructor:** Bill P. Stark, Sadler Professor of Biology  
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**Credit,** 4 semester hours; Prerequisite, Biology 111 and 112 or equivalent

**Lecture Schedule:** (Bio 448) MWF 12-12:50; Lab Schedule (Bio 443): T 1:30-4:30

**Course Description:** “A study of the biology and ecology of freshwater fish species.”  
Lecture 3 hours per week. Laboratory 3 hours per week.

**Rationale for Course:** Because freshwater fishes are the most ancient and diverse group of vertebrate species on earth, their study is an important part of the education of every well trained biologist. This course provides background information and research skills needed for teaching, graduate study and professional school, and it satisfies requirements for an elective course for Biology majors in the General Biology Track.

**Instructional Materials:** Text: *Inland Fishes of Mississippi*, S.T. Ross

**Learning Objectives:** In this course we will consider the methods of zoological nomenclature and the vertebrate and invertebrate fauna of freshwater ecosystems.

1. Students will explain the biological species concept and the procedures of zoological nomenclature.
2. Students will collect and properly handle samples of freshwater animals.
3. Students will identify freshwater fish at the class, ordinal, familial, generic and species levels.
4. Students will collect, identify and analyze samples of freshwater fishes from Mississippi streams and lakes.

**Academic Integrity:** Students are expected to be honest and to submit their own work on exams, collections and research projects. The “Mississippi College Honesty Policy” will be followed.

**Tuition Refunds for Dropped Classes:** Deadlines for dropped classes are published on the university calendar. At the end of the 2<sup>nd</sup> week of classes the refund level is reduced to 75%, the third week to 50%, 4<sup>th</sup> week to 25%. **Subsequently there is no refund.**

### **COURSE OUTLINE**

Topic 1: Chapters 1-5 Introduction to study of freshwater fishes

Topic 2: Chapter 6 Morphology and examples of major families

Topic 3: Primitive Fishes (Lampreys, Sturgeon, Bowfin, Paddlefish, Gar)

Topic 4: Rayfinned Fishes (Mooneyes, Eels, Herrings, Minnows, Suckers, Pickerel, Salmonids, Mosquito Fish)

Topic 5: Spiny-finned fishes (Catfish, Pirate Perch, Mulletts, Topminnows, Silversides, Temperate Bass, Sunfish, Pygmy Sunfish, Darters & Perch, Drum)

### **SELECTED FIELD AND LAB STUDIES**

1. Fish morphology and introduction to keying
2. 1<sup>st</sup> and 3<sup>rd</sup> order stream fauna
3. Swamp fauna
4. Pond and lake fauna
5. Identification exam

**Methods of Instruction:** Presentations of powerpoint based lectures will be given and selected specimens will be provided for experience in identification. Laboratory exercises include several field days in selected freshwater habitat for specimen collection.

**Individualized Accomodation Plan:** If you need special accommodations due to learning, physical, psychological or other disabilities, please contact the Student Counseling Services in Alumni Hall, Room 4. They may be reached by phone at 601 925-7791 or by e-mail at [mbryant@mc.edu](mailto:mbryant@mc.edu) or [rward@mc.edu](mailto:rward@mc.edu). If this applies to you it is imperative that you contact the counseling center immediately upon recognition of the disability, or if the disability is already diagnosed you should contact the SCS as soon as classes begin each semester.

**Required Practices:** Selected specimens collected during field studies will be sorted, labeled and identified by each student to an appropriate (designated) level.

**Evaluation Methods:** Three discussion style exams will be given with the last one given during the final exam period. The average on these exams will comprise 60% of the course grade.

Two sight identification/keying exams will be given. The average on these will comprise 20 % of the course grade.

Grades from keying selected museum specimens will comprise 10 % of the course grade.

Analysis of scale counts, lengths and other morphological data will comprise 10 % of the course grade.

**Exam Schedule:** Regular exams are tentatively scheduled for these dates: Exam 1 – Feb. 14; Exam 2 – March 28; Exam 3 – Final exam period

**Final grades will be assigned on this scale:**

A= 90-100

B = 80-89

C = 70-79

D = 60-69

F = 0-59

**Attendance and Make-up Policy:** The Mississippi College attendance policy will be followed: “Any student whose absences, whether excused or unexcused, exceed 25% of the class meetings will receive a grade of F in the course.”

Students are responsible for work missed during an absence. Exams should be made up promptly, usually within one week after the student has returned. Field work missed cannot be made up, although it may be possible for a student to collect individually at an appropriate site.

**Early Alert System:** Mississippi College has adopted the practice of finding students early in the semester who may be exhibiting behaviors that could ultimately have a negative impact on their academic progress. These behaviors are often called “red flag” behaviors and include, but are not limited to, excessive absences, poor test grades, and lack of class participation or evidence of non-engagement. Identifying these behaviors early gives the instructor the opportunity to raise the “red flag” on behalf of a particular student so the student can take appropriate action to redirect his/her progress. The system alerts the student, the advisor and the Office of Student Success.

These messages are intended to help a student recognize an area of concern and to encourage him/her to make choices to improve the situation. When a student receives an Early Alert, the student should quickly make an appointment to talk with the professor about the situation. Students may also make use of the Office of Student Success to set goals and connect with campus resources.

**Some Important Dates:**

January 20 – Martin Luther King Holiday, no day or night classes

January 21 – Last day to enroll or add a class

March 10-16 – Spring Break

March 21 – Drop Deadline, last day to drop a class

April 21 – Easter Holiday, no classes

April 30 – Last day of classes – night exams begin

May 2-7 – Final Exams

May 9-10 - Graduation