The course is designed as an overview of the taxonomy, systematics, biodiversity, anatomy, and ecology of “marine fishes”. We will examine the biology of a variety of fishes from waters surrounding the Northern Gulf of Mexico and the factors that influence their distribution and abundance. The course will be field intensive and lectures will be framed by evolutionary and ecological processes that drive patterns of diversity. This is an intensive six credit hour class, consisting of separate, graded lecture (three hours) and lab (three hours) sections that must be taken concurrently. However, learning is cumulative, and due to the time restraints of this class, topics covered in “lecture” and “lab” will often bleed over. As such, fieldwork will make up a large portion of the course, and participation in field excursions is mandatory.

Lecture: Unless we are in the field, we will have lectures daily from ca. 8:30 until 11:45. Lectures will be broken into 90-minute increments with a 15-minute break in between. The format will consist of both PowerPoint presentations and “chalk and talk” written notes. A pdf of the PowerPoint presentations will be made available after each class. Please, please, please take notes (preferably using a pen or pencil in a notebook)!

- **Text:** There is no mandatory text, but material will be on reserve in the library. I will also provide you with pdf's of required readings. The lectures will mostly follow Helfman et al. *The Diversity of Fishes Biology, Evolution, and Ecology* and Bond’s *Biology of Fishes*.

- **Exams:** Exams are cumulative, and will be based largely on lecture presentations, readings, discussions, and will include discussions and observations from field trips and lab exercises.

- **Reading Assignments:** Periodically I will assign short reading assignments that will need to be read by everyone and also be prepared to discuss in class. Everyone is responsible for leading a discussion (or a team discussion), and you will be graded on this aspect. An ideal discussion will also include the incorporation of other contemporary papers. I do not require a PowerPoint presentation (although this format is helpful); rather the ability to “walk” through a paper, find flaws or discrepancies, discuss what was confusing, incorporate similar studies, and the ability to communicate the information effectively. This is not meant to be very time consuming, a 10-15 minute discussion is sufficient. You will also be graded on your participation in these discussions, so contribute even when it is not your paper!

- **Presentation:** You will be required to give a presentation that is between 12 and 15 minutes. 12 minutes is the ideal time to leave 3 minutes for questions (as you continue with your career the 12+3 presentation is the standard for most conferences). The presentation topic will be picked from a list of topics that I will provide, but I am also open to suggestions from you if a particular topic is not listed.

- **Grades:** Lecture grades will be based on two exams, the readings, and a presentation.

  Exam 1: 30%       Exam 2: 35%       Readings: 20%       Presentation 15%

**Graduate Credit:** If you are taking this class for graduate credit you are also required to write a review paper and give a presentation.

- **Abstract/Paper:** You will complete an abstract and a paper on a selected topic. Abstracts will be restricted to 250 words and will be due before 1700 Saturday, July 7th.
The paper is tentatively due before the beginning of class on Thursday, July 26th. Papers will be based on research from the primary literature, will be well written, ideally between 4-7 pages (including abstract), 1.5 spaced, 12 pt TNR or Arial font, 1” margins, and should include a figure that summarizes the information. This paper is not a natural history paper, but will cover a topic framed in an evolutionary or ecological perspective (i.e., no “Sharks are cool” type papers).

- **Grades:** Lecture grades will be based on the above plus the paper.
  - Exam 1: 25%
  - Exam 2: 30%
  - Readings: 15%
  - Presentation: 15%
  - Paper 15%

**Laboratory:** The laboratory section of the course will include both field excursions and lab exercises.

- **Laboratory/field notebook:** You should keep and have a notebook with you at all times! Your lab/ field notebook will not be graded, but the information that is disseminated during field/ lab activities will be on quizzes and exams. Furthermore, a GROUP notebook is required and the information from the field will be very, very critical.
- **Boat trips:** When we have a boat day, the boat leaves the pier at 8 am!!! This means be on board the vessel before 8 am or you will literally miss the boat!
- **Fieldwork:** In addition to boat trips, we will spend a large portion of our lab time outdoors. Often we will leave early! Students will be held responsible for information discussed by the instructor and the teaching assistant during field excursions. Please refer to the student handbook regarding appropriate preparation and dress for fieldwork. We will be conducting activities in clear to brown water, in marshes to beaches, from freshwater to marine environments, and around seagrass beds to sharp oysters; therefore, flip-flops, sandals, crocks, and bare feet are not permissible. Please bring an old pair of sneakers that you do not mind ruining, or purchase a cheap pair of sneakers (thrift stores are great for this!). Most “aquashoes” are also not permissible because they tend to slip off in soft mud. I have recently become aware of expensive sandals called “Chacos”; these are also not suitable to most of our field activities and can be consumed by the Mississippi mud in no time at all! Footwear that protects the entire foot is required on all USM field trips and vessels. Sunscreen, sunglasses, and clothing that minimizes sun exposure are highly recommended; furthermore, we will likely get muddy and some grass is pointy so bring appropriate clothing. You may and should wear a swimsuit under your clothes if you anticipate getting wet (again will be in the field a lot). We will snorkel on some trips; snorkel gear will be provided, but you may bring your own if you have it.
- **Participation:** In addition to execution of lab exercises, you will be expected to pitch in and help as needed. All students will assist in maintaining/cleaning the lab space, loading/storing equipment, recording data, and working gear/instruments. Before each field day we will coordinate the groups that are responsible for helping with lunches, gear, cleanup, etc…
- **Collections:** Each group is required to maintain and turn in a collection of at least 80 species of fish (you will have more) that are properly curated.
- **Group Notebook:** Your group is responsible for turning in a “notebook” at the end of the class. Certain field trips (not ALL) will need to be outlined in this notebook. Each notebook will require the following information for each specified collection: Geographical location (preferably with a map), date, an abiotics field sheet, habitat type and description, gear used, a list of species collected, a qualitative assessment of the species that were present (abundant, common, rare) including a brief statement about why you
think they were there. You are also required to provide a comparison of the ichthyofauna of similar habitats (e.g., seagrass beds in LA, FL panhandle, and Port St. Joe). Get to work on this ASAP! Time moves very quickly.

- **Grades:** Lab grades will be calculated as follows:
  - Practical: 40%
  - Quizzes: 10%
  - Collection: 20%
  - Group Notebook: 30%

**Grading scale:** All grades (lecture and lab) will be assigned according to a ten-point scale:
- 100-90 = A
- 89-80 = B
- 79-70 = C
- 69-60 = D
- <59 = F

**Extra credit:** There will be no extra credit assignments, but exams may have a question or two.

**Course Schedule:** The schedule is very, very, very tentative. Dates/topics are subject to change due to changes in field trip schedules (weather happens, machinery breaks down, and plans change). A running schedule will be posted in class.

**Academic Honesty:** As stated in the undergraduate bulletin: the faculty member may give the student an F on the work involved or in the course. If further disciplinary action is deemed appropriate, the student should be reported to the dean of students. Cheating also violates the Code of Student Conduct and may be grounds for probation, suspension or expulsion. Academic dishonesty also includes any submission of false documents such as add/drop forms, substitutions, special requests, etc. Students on disciplinary suspension may not enroll in any courses offered by USM.

**Plagiarism:** As stated in the undergraduate bulletin: Plagiarism is scholarly theft, and it is defined as the unacknowledged use of secondary sources. More specifically, any written or oral presentation which the writer or speaker does not distinguish clearly between original and borrowed material constitutes plagiarism. Because students, as scholars, must make frequent use of the concepts and facts developed by other scholars, plagiarism is not the mere use of another's facts and ideas. However, it is plagiarism when students present the work of other scholars as if it were their own work. **Plagiarism is a serious offense.** An act of plagiarism may lead to a failing grade on the paper and in the course, as well as sanctions that may be imposed by the student judicial system.

**Academic Integrity Statement:** All students at the University of Southern Mississippi are expected to demonstrate the highest levels of academic integrity in all that they do. Forms of academic dishonesty include (but are not limited to):
1. Cheating (including copying from others’ work)
2. Plagiarism (representing another person’s words or ideas as your own; failure to properly cite the source of your information, argument, or concepts)
3. Falsification of documents
4. Disclosure of test or other assignment content to another student
5. Submission of the same paper or other assignment to more than one class without the explicit approval of all faculty members’ involved
6. Unauthorized academic collaboration with others
7. Conspiracy to engage in academic misconduct

Engaging in any of these behaviors or supporting others who do so will result in academic penalties and/or other sanctions. If a faculty member determines that a student has violated our Academic Integrity Policy, sanctions ranging from resubmission of work to course failure may occur, including the possibility of receiving a grade of “XF” for the course, which will be on
the student’s transcript with the notation “Failure due to academic misconduct.” For more details, please see the University’s Academic Integrity Policy. Note that repeated acts of academic misconduct will lead to expulsion from the University.

**ADA Syllabus Statement:** If a student has a disability that qualifies under the Americans with Disabilities Act (ADA) and requires accommodations, he/she should contact the Office for Disability Accommodations (ODA) for information on appropriate policies and procedures. Disabilities covered by ADA may include learning, psychiatric, physical disabilities, or chronic health disorders. Students can contact ODA if they are not certain whether a medical condition/disability qualifies.

**Address:** The University of Southern Mississippi Office for Disability Accommodations, 118 College Drive # 8586, Hattiesburg, MS 39406-0001

**Voice Telephone:** 601.266.5024 or 228.214.3232 Fax: 601.266.6035

Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1.800.582.2233 (TTY) or email ODA at oda@usm.edu.