



DEEP-SEA BIOLOGY

LUMCON is distinguished by our emphasis on field-based courses designed to educate and inspire.

Course Dates: June 7-26, 2020

Course Level: Undergraduate and Graduate (3-credit)

Course Location: DeFelice Marine Center, Cocodrie, Louisiana

Course Description: The deep sea, areas of the ocean below 200 meters, is the largest biome on Earth--vast, remote, and inhospitable. These conditions create unique challenges for deep-sea life and the scientists who study it. The challenge of studying this expansive and extreme ecosystem also makes it ripe for new discoveries and allows us as scientists to challenge the paradigms of life on Earth and beyond. This course will apply concepts from biology, biochemistry, ecology, and conservation sciences to the study of the deep-sea.

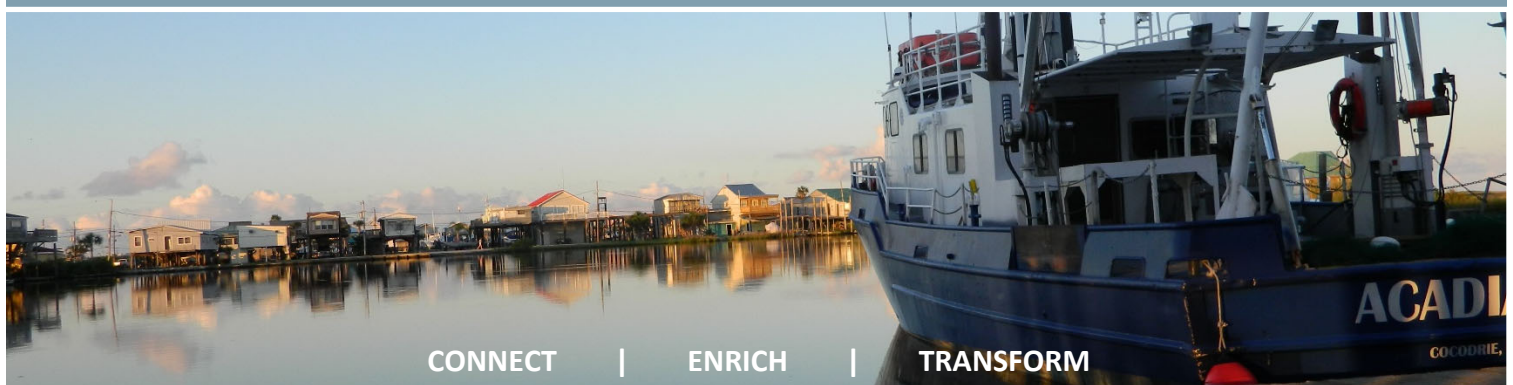
Course Highlights: Students will experience aspects of both field and laboratory settings including:

- Working aboard research vessels for both shallow- and deep-water sampling
- Collecting and identifying invertebrates
- Engaging with both historical and modern views of the deep ocean
- Using large databases to test ecological hypotheses
- Utilizing analytical software
- Measuring community structure using diversity metrics
- Managing a project from generation of hypotheses through to a final product
- Constructing a strong social media campaign to engage general audiences in deep-sea science

Course Instructors: Dr. Craig McClain, LUMCON, cmclain@lumcon.edu

Dr. Clifton Nunnally, cnunnally@lumcon.edu

For more course details, course application, or scholarship application visit lumcon.edu/2020-summer-courses



CONNECT

| ENRICH

| TRANSFORM

Deep-Sea Biology

Course Instructors: Dr Craig McClain, LUMCON, mcclain@lumcon.edu
Dr Clifton Nunnally, LUMCON, cnunnally@lumcon.edu
Dr. Jim Junker
River Dixon

Course Details:

- Dates: June 8-26, 2020
- Monday – Friday for 3 weeks (15 class days, some evenings required, one Saturday required for research cruise)
- Lecture and field trip times will be announced through email and in class.

Course Grading System:

3 Credits, Solid Letter Grade (A,B,C,D,F)

Undergraduate:

- Journal Club
- Weekly Quizzes
- Final Presentation

Graduate:

- Journal Club
- Weekly Quizzes
- Final Presentation
- Literature Review of Course Research

Sample Course Syllabus:

Week 1

Monday, June 8	Lecture 1: Introduction to the deep sea (definition, habitats, environment, history of discovery) (Dixon, Nunnally, McClain)	Lecture 2: Diversity of life (McClain, Nunnally) Lab 1: Megafauna
Tuesday, June 9	Lecture 3: Carbon, Energy, and Biomass (Nunnally) Lab 2: Deep-sea macrofauna	Lecture 4: Diversity patterns and biogeography (McClain, Dixon) Lab 3: Macrofauna Evening event: Watch deep-sea movie
Wednesday, June 10	Lecture 5: Gulf of Mexico Systems (Nunnally)	Journal Club Quiz 1
Thursday, June 11	Depart LUMCON aboard R/V <i>Pelican</i> at 00:01 AM Lecture 6: Life at Sea (Dixon, McClain, Nunnally)	Arrive at First Deep-Sea Sampling Location
Friday, June 12	Lecture 7: Sampling, Gear, and Equipment (Nunnally) Deep-Sea Sampling	Deep-Sea Sampling

Saturday, June 13 **Deep-Sea Sampling** **Quiz 2**
At-sea games
Depart Final Station
Return to LUMCON

Week 2

Monday, June 15 **Lecture 8:** Special systems
(Dixon, Nunnally, and McClain) **Lab 4:** Deep-sea macrofauna lab

Tuesday, June 16 **Lecture 9:** Data types,
challenges, curation, and gaps
(Junker, McClain) **Lab 5:** Methods, analysis, and management
in deep-sea data
Evening: Youtube Video Event

Wednesday, June 17 **Lecture 10:** Adaptations and
evolution (Nunnally, McClain) **Lab 6:** Wood fall diversity lab

Thursday, June 18 **Terrebonne Bay Sampling** **Terrebonne Bay Sampling**

Friday, June 19 **Lab 5:** Bay macrofauna **Quiz**
Journal Club

Week 3

Monday, June 22 **Lecture 11:** Food webs and
trophic complexity (Dixon,
Junker) **Open Lab**

Tuesday, June 23 **Lecture 12:** Body size and
metabolism (McClain, Junker) **Open Lab**

Wednesday, June 24 **Lecture 13:** Human impacts,
threats, climate, and
conservation (Nunnally, Dixon,
McClain, Junker) **Open Lab**

Thursday, June 25 **Open Lab** **Quiz 3**
Journal Club

Friday, June 26 **Work on final report** **Final report due**
Afternoon recreational event