



## MARINE ECOSYSTEM ECOLOGY

LUMCON is a leader in marine science education distinguished by our emphasis on field-based courses designed to educate and inspire.

**Course Dates:** July 6 – July 24, 2020

**Course Level:** Undergraduate and Graduate (3-credit)

**Course Location:** DeFelice Marine Center, Cocodrie, Louisiana

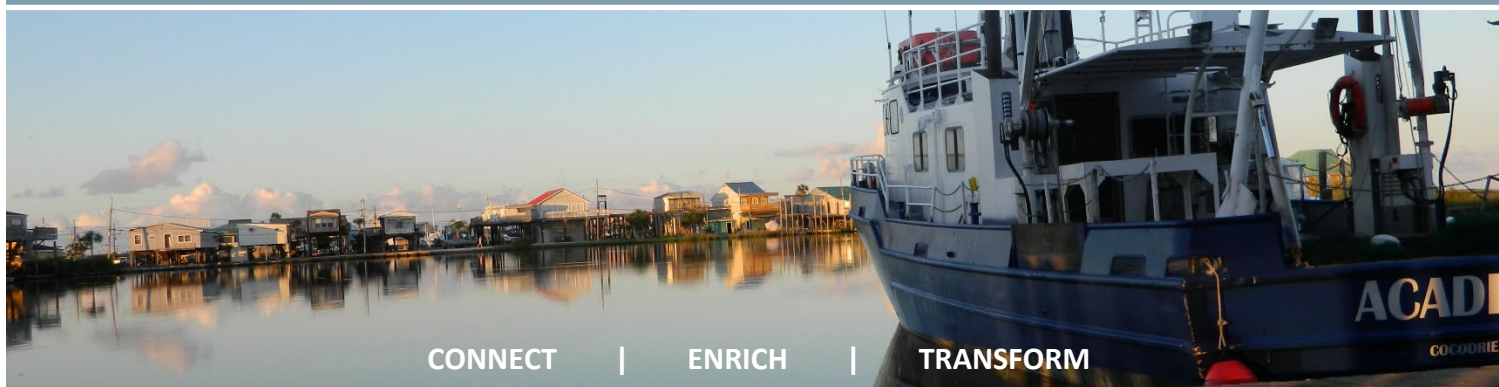
**Course Description:** Marine Ecosystem Ecology is a field-intensive course that provides a combination of lecture and field experiences in ecosystem ecology of coastal Louisiana. Topics covered include: what ecosystem ecology is; primary production and respiration; carbon and nutrient cycles; metabolism, decomposition, and nutrient remineralization; multiple stressors; roles, characteristics, and communities of water column primary producers; controls on primary producers; zooplankton; planktonic food webs; secondary production; trophic levels and energy transfer; controls on secondary production; and food web and food web processes.

**Course Highlights:** This field-intensive course in Marine Ecosystem Ecology provides students with a unique opportunity for hands-on experiential learning in ecosystem ecology while gaining a richer understanding of the local habitats and ecosystems near LUMCON. Students will participate in field activities involving sampling trips from kayaks, small boats, and LUMCON's larger research vessels.

**Course Instructors:** Dr. Brian Roberts, LUMCON, [broberts@lumcon.edu](mailto:broberts@lumcon.edu)

Dr. James Nelson, University of Louisiana @ Lafayette, [nelson@louisiana.edu](mailto:nelson@louisiana.edu)

For more course details, course application, or scholarship application visit [lumcon.edu/2020-summer-courses](http://lumcon.edu/2020-summer-courses)



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## Marine Ecosystem Ecology

### Course Instructors:

Dr. Brian Roberts, LUMCON, [broberts@lumcon.edu](mailto:broberts@lumcon.edu), Rm. 207, 985-851-2821

Dr. Jimmy Nelson, UL Lafayette, [nelson@louisiana.edu](mailto:nelson@louisiana.edu)

### Course Details:

6-24 July, 2020

Monday – Friday for 3 weeks (15 class days)

Field focused course with some lecture

### Course Grading System:

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

Three Exams worth 100 points each = 300 pts

Three Laboratory Reports worth 50 points each = 150 pts

Lab and Field Exercise Participation = 150 total points

Total course points = 600

### Sample Course Syllabus:

(Lectures in regular font and *Field/Lab Activities in italics*)

Date	Day	Content/activities	Afternoon activity
09-Jul	Mon	What is Ecosystem Ecology? / Circulation / Coastal LA	<i>Marsh plant production</i>
10-Jul	Tue	Primary Producers and base of food webs	<i>Pelagic primary production</i>
11-Jul	Wed	Carbon & Nutrient Cycles	<i>Sediment core metabolism</i>
12-Jul	Thu	Microbes / Decomposition / Anaerobic Metabolism	<i>Nutrient analyses &amp; synthesis</i>
13-Jul	Fri	<i>Trinity Island: High vs. Low Energy Habitats</i>	<b>Exam I / Lab Report Due</b>
14-Jul	Sat	<i>Have Fun</i>	<i>Have Fun</i>
15-Jul	Sun	<i>Have Fun</i>	<i>Have Fun</i>
16-Jul	Mon	Ecological roles in the plankton/ <i>Salt marsh plankton tow</i>	Controls on 1° & 2° producers
17-Jul	Tue	<i>Water collection for nutrient &amp; grazing experiments</i>	<i>Set up experiments</i>
18-Jul	Wed	Community ecology, plankton-style/ <i>marsh plankton tow</i>	<i>Break down experiments / Night plankton tow</i>
19-Jul	Thu	Plankton food webs and bigger picture	Process samples/analyze results
20-Jul	Fri	New methods in microbial and plankton ecology	<b>Exam II / Lab Report Due</b>
21-Jul	Sat	<i>Have Fun</i>	<i>Have Fun</i>
22-Jul	Sun	<i>Have Fun</i>	<i>Have Fun</i>
23-Jul	Mon	<i>Trawl collections</i>	Secondary production /Food webs
24-Jul	Tue	<i>Marsh field collections (kayaks)</i>	Food Web Dynamics
25-Jul	Wed	Food Webs on the Landscape	<i>Gut content analysis in Lab</i>
26-Jul	Thu	Food Web Services and Fisheries	<i>Gut content analysis in Lab</i>
27-Jul	Fri	Build Food Webs from Lab and present	<b>Exam III / Lab Report Due</b>

*Note: Schedule suggest to change due to weather conditions*