

<b>Program:</b>	<b>Tropical Marine Ecology and Conservation</b>
<b>Location:</b>	<b>CIEE Research Station Bonaire</b>
<b>Course Title:</b>	<b>Independent Research in Marine Ecology/Biology</b>
<b>Instructor:</b>	<b>Rita BJ Peachey, PhD</b>
<b>Assistant Instructors:</b>	<b>Conservation Biology faculty</b>
<b>Teaching Assistant:</b>	<b>TBA</b>
<b>Contact Hours:</b>	<b>60</b>
<b>Credit Hours:</b>	<b>4 semester/6 quarter</b>
<b>Course Code:</b>	<b>INDE 3003 BONA</b>

**Course Description:**

Students carry out a project in a topic of their choice in one of the subject areas coral reef ecology, marine conservation management, human ecology, scientific diving - or another subject matter accepted by the instructors. The project culminates in a research paper that will be published in the CIEE journal *Physis: Journal of Marine Science* and a presentation. Students learn the basic steps of the independent research process: finding a topic, formulating a research question and seeking answers, verbalizing research findings, and presenting findings to a peer audience.

**Course meetings:**

Formal lab meetings at a time to be determined during the first week of classes & informal meetings as necessary

**Course objectives:**

- To design and conduct an original research project
- To develop experience with experimental techniques in marine ecology
- To develop a working knowledge of relevant research literature
- To practice scientific writing
- To be able to discuss the research and topic with other marine ecologists

**Expectations:**

- Students will develop (with guidance) a research project proposal at the beginning of the semester that will provide initiative, outline an experimental strategy, and serve as a request for funding of consumable supplies from the program (and possibly outside sources).
- Each student will present oral reports of research progress, relevant readings, and/or challenges at scheduled lab meetings.
- Students will take primary responsibility for conducting research and do so with professional attitudes and time commitments. This is a lab course a minimum of 6 hours of productive lab work per week is expected. It is more realistic to expect to spend an average of 8-12 hours per week working and thinking about your project.
- Students will produce a manuscript (with active feedback from the instructors and peers) that can be published in the CIEE research journal. Publishable manuscripts require many drafts, reviews, and revisions.
- Students are encouraged to present research results at appropriate scientific meetings (i.e. BEM, AAUS, and others). I will work with you to get funding. There are student scholarships given by many organizations to attend meetings. Generally, students will be first author on abstracts resulting directly from their work. Presentations at scientific meetings or publication of research that was conducted under the direction of CIEE staff will indicate the appropriate CIEE advisor in the authorship field.
- Students will be self-motivated and work independently, approaching the instructor for guidance regularly.

**Required Readings:**

Each student is expected to search appropriate databases (medline, biological abstracts, etc.),

read, and become familiar with the scientific literature relating to their research. In other words, with the help of the instructor, the student should become an expert on the literature relevant to their research topic.

**Evaluation:**

Your final course grade will be calculated according to the following criteria at the end of the semester. I am happy to discuss your progress at any time during the semester.

40%- Effort, attitude, and time invested (including lab safety, attention to detail, participation in lab meetings, troubleshooting, etc.),

10% - Organization of lab notebook, computer files, and any other documentation that remains in the lab as your research legacy

20% - Final paper (formatted according to CIEE scientific journal style)

15% - Presentation

7.5% - Familiarity with relevant research literature

7.5% - Evidence of original thought regarding the project

**Weekly Schedule (student actions are in bold):**

<b>Week 1</b>	Introduction to project; Literature review, Project ideas, <i>Physis</i>
<b>Week 2</b>	<b><i>Present verbal project proposal</i></b> ; Group discussion; Reading & Writing Science
<b>Week 3</b>	<b><i>Intro and prelim methods due</i></b> ; Statistics workshop
<b>Week 4</b>	<b><i>1<sup>st</sup> draft of proposal with data analysis section</i></b> ; Formatting proposals
<b>Week 5</b>	<b><i>Final proposal due; Begin data collection</i></b> ; Field notebooks
<b>Week 6</b>	<b>Regatta Break</b>
<b>Week 7</b>	<b><i>Data collection</i></b> ; Data entry workshop
<b>Week 8</b>	<b><i>Data collection</i></b> ; Group journal publication discussion and planning; Vote on presentation night
<b>Week 9</b>	<b><i>Data collection/analysis</i></b> ; Data analysis workshop
<b>Week 10</b>	<b><i>Data Analysis</i></b> ; Giving a scientific presentation
<b>Week 11</b>	<b><i>1<sup>st</sup> draft of papers due; Student swap; Practice presentations</i></b>
<b>Week 12</b>	Papers returned from instructors; <b><i>Presentations</i></b>
<b>Week 13</b>	<b><i>Second draft due Monday</i></b>
<b>Week 14</b>	<b><i>Final draft due Monday, Publication Work</i></b>
<b>Week 15</b>	Finals week; <b><i>Hand in notebooks &amp; data files</i></b>