**General Information**

Title of Course, Catalog Number, Section:
MBIO1118.21 Beach Ecology Lecture  
MBIO1128.21 Beach Ecology Lab

Pre-requisites:  
BIOL1251, BIOL1253, BIOL1252, BIOL1254 General Biology I, II (or equivalent).

Class Room and Meeting Times and Dates:  
Tambora Beach Hotel

Instructor:  
Dr. I.R. Isquith

Office Location and Office Hours:  
Tambora Beach Hotel

Telephone with voice mail:  
201-692-2395

Email Address:  
isquith@fdu.edu

**Course Description**

Lecture: Visits to various coastal marine environments studied in MBIO 1128. Identification and experiments on marine organisms to gain an understanding of their ways of life.

Laboratory: Field work and experiments illustrating the topics discussed in MBIO 1118 Beach Ecology.

**Text and Materials**

No required text.

**Marine Biology Program Objectives**

1. use the scientific method and understand its strengths and weaknesses;
2. research a marine biological topic using traditional and computer technology;
3. read and evaluate professional scientific literature;
4. write and communicate science;
5. utilize mathematical reasoning and quantitative skills in marine biology;
6. possess observational and technical skills;
7. possess major field knowledge
8. successfully compete in marine biologically related fields

**Course Objectives (parenthetical numbers indicate which marine biology program objectives are emphasized)**

I. Gain knowledge of beach ecology including (1-4)
   1. underlying principles of general ecology
   2. how ecologists work
   3. ecology and evolution
   4. organismic diversity
   5. physical conditions and resources
   6. populations: effects of birth, death and migration
   7. community characteristics
   8. competition
   9. symbiosis
   10. predation
   11. energy in ecosystems
   12. sustainability
   13. pollution
   14. conservation

II. Learn field techniques (6 and 7)
Teaching Methodologies/Activities
Modes of instruction that will be used by the instructor:
1. Power point supported lectures
2. Video presentations
3. Guided field trips

The following will be used to assess student learning:
1. Lecture Exams
2. Graded Lab reports
3. Class room participation

Rules and Regulations
Attendance and lateness policy:
Students are expected to be available for class work seven days per week. Since this course requires scheduling flexibility, students are expected to be in continuous contact with the professor or Sr. Ramirez about last minute changes. Students are required to follow all FDU study abroad regulations, which are enumerated elsewhere.

Makeup and missed work policy:
Exams:
1. Each exam will predominantly cover the material taught since the previous exam (see the course outline). However, due to the nature of the subject matter, all materials from earlier in the semester will be needed as a foundation for the more advanced topics. On tests, you are responsible for all the material covered in class, whether or not you were present. Therefore, you should ask your classmates and instructor to go over any work you missed.
2. If you miss an exam and do not have a documented, legitimate excuse, you will receive a zero for the test.
3. If you miss an exam and have a legitimate excuse, you will be given a makeup exam. Makeup exams will be scheduled as soon as possible after the date of the missed exam. If the makeup is not taken at the scheduled time, it will be averaged into your course grade as a "0".

Lab work, field trips, and reports:
If you miss class time including field trips, you will need to make it up. If a lab report is not submitted in a timely manner, its grade will be lowered

Academic Integrity Policy:
Students enrolled at Fairleigh Dickinson University are expected to maintain the highest standards of academic honesty. Students have the responsibility to each other to make known the existence of academic dishonesty to their course instructor, and then, if necessary, the department chair, or the academic dean of their college. Course instructors have the added responsibility to state in advance in their syllabi any special policies and procedures concerning examinations and other academic exercises specific to their courses. Students should request this information if not distributed by the instructor.

Academic dishonesty includes, but is not necessarily limited to, the following:
1. Cheating-Giving or receiving unauthorized assistance in any academic exercise or examination. Using or attempting to use any unauthorized materials, information, or study aids in an examination or academic exercise.
2. Plagiarism-Representing the ideas or language of others as one’s own.
3. Falsification-Falsifying or inventing any information, data, or citation in an academic exercise.
4. Multiple Submission-Submitting substantial portions of any academic exercise more than once for credit without the prior authorization and approval of the current instructor.
5. Complicity-Facilitating any of the above actions or performing work that another student then presents as his or her assignment.
6. Interference-Interfering with the ability of a student to perform his or her assignments.

Sanctions: Any student violating academic integrity will, for the first offense, receive one or a combination of the following penalties imposed by the faculty member:
1. No credit (0) or Failure for the academic exercise.
2. Reduced grade for the course.
3. A failure in the Course.
4. Recommendation for Academic Probation to the dean of the college in which the student is registered.

The instructor shall file a notice of the penalty in the student's file maintained in the campus Office of Enrollment Services. In cases of interference and complicity, whether or not the student is registered in the affected course, the incident and penalty shall be recorded in the student's file maintained in the campus Office of Enrollment Services. For a subsequent violation of academic integrity, a student will be subject to any combination of the above sanctions, and, after due review by the academic dean according to the procedures below, one of the following:

1. Suspension from the University for one year. Readmission will be contingent upon the approval of the academic dean.
2. Dismissal from the University
3. Dismissal from University identified on the student's academic transcript as a result of a violation of the Academic Integrity Policy.

Grades and Grading Policy

Grade components

<table>
<thead>
<tr>
<th>Lectures exam #1</th>
<th>30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture exam #2</td>
<td>30%</td>
</tr>
<tr>
<td>Lab reports</td>
<td>30%</td>
</tr>
<tr>
<td>Class participation</td>
<td>10%</td>
</tr>
</tbody>
</table>

This average will then be placed on the following scale for your grade:

<table>
<thead>
<tr>
<th>A</th>
<th>100-92</th>
<th>C+</th>
<th>78-76</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-</td>
<td>91-89</td>
<td>C</td>
<td>75-72</td>
</tr>
<tr>
<td>B+</td>
<td>88-86</td>
<td>C-</td>
<td>71-69</td>
</tr>
<tr>
<td>B</td>
<td>85-82</td>
<td>D</td>
<td>68-60</td>
</tr>
<tr>
<td>B-</td>
<td>81-79</td>
<td>F</td>
<td>59-0</td>
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</tbody>
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Lab Reports

Lab reports are all to be prepared in the manner of a scientific paper. They should consist of the following components:

- Introduction
- Materials and Methods
- Results
- Discussion
- Conclusions
- Literature Cited (Bibliography)

Introduction: Introduces the subject of the report. It contains materials from scientific papers and texts. All materials should be cited and included in the List of Literature section. Do not use numbered footnotes. Use a combination of the following formats:

“Smith (1998) found a new cat species.”
“In 1998, Smith found a new cat species.”
“A new species of cat was found. (Smith, 1998)”

Materials and Methods: Exactly what you did. No detail is too small. Based on your Materials and Methods, anybody should be able to exactly reproduce what you did. This section does not include your results.

Results: This is the data that you produced. Whenever possible it should be in tabular form. The data are not interpreted here, but only presented in a logical, readable format.

Discussion: What did your data mean? What is its significance? How does it relate to published results? If your results were not the same as other people’s, why weren’t they? Cite any references.

Conclusions: Basically, a very brief summary of the work.

Literature: Alphabetically use the following format:


Reports can be submitted once, before their due date, for an ungraded critical review. This does not alter their original due date. All parts of the report should be word processed. Data sheets are the only permitted exception. Representations of organisms can either be drawn, using a sharp, hard pencil, or digitally photographed and merged onto the data sheet. Whatever format of representation you use, the magnification should be sufficiently high as to permit observation of critical features. All pictures, no matter what format, should have an indication of the organism’s size. If you are taking pictures in the field, the easiest thing to do is to include an object of known size, e.g. a 10cm ruler or a quarter, in the picture.
<table>
<thead>
<tr>
<th>DAY</th>
<th>LECTURES</th>
<th>VIDEOS</th>
<th>OTHER ACTIVITIES</th>
<th>LABS</th>
</tr>
</thead>
</table>
| 1   | Ecology Principles, Water, Birth, Planet Earth |                             | Midterm                               | 1. Draw, collect or photograph 15 protists and/or plants (including microscopic)  
2. Identify each as well as possible, but at least phylum or division  
3. Describe the environment of each organism, listing as many factors as you can think of that might influence the organism. |
| 2   | Bacteria, Protists, Life from Sea |                             | Final                                 | 1. Draw, collect or photograph 15 animals (including microscopic)  
2. Identify each as well as possible, but at least phylum or division  
3. Describe the environment of each organism, listing as many factors as you can think of that might influence the organism. |
| 3   | Plants                    | Margins of the Land         |                                       | 1. Draw, collect or photograph 15 organisms from the tidal zone.  
2. How is each adapted to its medium?  
3. How is each adapted to its substrate?  
4. Is zonation displayed? |
| 4   | Animalia                  | Life at the Edge of the Sea |                                       | 1. Obtain a plankton sample  
2. Identify 20 organisms as well as possible  
5. What modifications does each have for planktonic existence? |
| 5   | Energy, Open Ocean        |                             | Midterm                               | 1. Find and describe 10 pairs of organisms that are coacting.  
2. Determine and defend your choice of type of coaction for each pair. |
| 6   | Medium, Substrate, Biology of the Ocean |                             |                                       | 1. Find and define five communities.  
2. List all the organisms in each.  
3. Define each organism’s niche.  
4. Defend why you consider each to be a community. |
| 7   | Biogeochemical cycles Coral Reef |                             |                                       |                                                                      |
| 8   | Population                |                             |                                       |                                                                      |
| 9   | Niche, Coaction           |                             |                                       |                                                                      |
| 10  | Communities               |                             |                                       |                                                                      |
| 11  |                           |                             |                                       |                                                                      |
| 12  |                           |                             |                                       |                                                                      |
| 13  |                           |                             |                                       |                                                                      |
| 14  |                           |                             |                                       |                                                                      |
| 15  |                           |                             | Final                                 |                                                                      |