**General Information**  
Catalog Number, Section, and Term: MBIO 3400, 21, Spring 2010

Title of Course: Tropical Marine Invertebrates

Pre-requisites: None

Class Room and Meeting Times and Dates: Tambora Hotel, Mondays, Tuesdays, Thursdays and Fridays 10:00 AM – 5:00 PM, March 15, 2010 – April 9, 2010

Instructor: Dr. Marion McClary

Office Location and Office Hours: Tambora Hotel, TBA

Telephone with voice mail: TBA

FDU Email Address: mcclary@fdu.edu

**Course Description**
A study of the evolution, reproduction, development, behavior, anatomy, physiology, and ecology of marine invertebrate taxa. The laboratory will include dissections, collections, identifications and experimentation on tropical marine invertebrates.

**Text and Materials**
Required text: None
Required materials: Mask, swim fins and snorkel.

**Rules, Regulations, Grades**
Attendance and lateness policy: Students are responsible for all material missed due to absence and or tardiness.

Makeup and missed work policy:
1) Each exam will only cover the material listed above it or the material listed since the previous exam (see the course outline).

2) Exams may be curved depending on the class average.

3) If you miss the exam and do not have a doctor’s note, YOUR EXAM WILL NOT BE CURVED. Therefore it is important to take the exam on time.

4) Exams not taken by the last day of the course will become zeros. An incomplete (I) is given if there is a doctor’s note or other official notes.

5) Only doctor’s notes or other official notes can remove zeros.

6) Exams will be short answer and fill-in.
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.
Grading policy:
There will be five grades: (1) a lecture mid term exam; (2) a laboratory mid term exam; (3) a lecture final exam; (4) a laboratory final exam; and (5) a research paper. Each grade is worth 20% of your final grade. An average of the five grades is 100% of your grade. Your final grade will be an average of the five grades. This average will then be placed on the following scale for your grade:

A 92 - 100
A- 89 - 91
B+ 86 - 88
B 82 - 85
B- 79 - 81
C+ 76 - 78
C 72 - 75
C- 69 - 71
D 60 - 68
F 0 - 59

Course Objectives
The objectives (goals) of this course are for you to become competent in knowledge of:
(1) the Porifera; (2) the Mollusks; (3) the Anthozoans, Nematostelem and Nematode worms; (4) development; (5) Cnidarians; (6) differences between acoelomate, pseudocoelomate, and eucoelomate organisms; (7) similarities and differences between choanocytes, cnidocytes, odontophores, osphradia, ctene rows, ctenidia, ostia, oscula, septa, and sclerozeptae, (8) the Crustaceans; (9) the Arthropods; (10) the Annelids; (11) the water vascular system; (12) the Echinoderms; (13) the Polychaetes; (14) respiratory trees; (15) the primitive function of pharyngeal gill slits in Chordates; (16) epitoky; (17) zoecium; (18) nephridium; (19) methods of feeding; (20) centralization; (21) scaphognathites; (22) endostyle; (23) evisceration; (24) mesocoel; (25) tadpole larvae; (26) and lophophores; (27) writing laboratory protocols; (28) data collection and analysis; (29) reading scientific literature; (30) writing a scientific paper; and (31) giving a scientific presentation.

Teaching Methodologies/Activities
The following will be used to assess student learning:
1. Exams to assess numbers 1-26 above (program outcome # 7)
2. A paper to assess numbers 27- 31 above (program outcomes # 1-6)

Modes of instruction that will be used by the instructor:
1. Oral Presentation
2. Hands-on Demonstration
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**Other Information**

(Please see the next two pages)
Papers:
You will be responsible for a paper. It must be typed and will be graded based on its organization, content, grammar, punctuation, and spelling. It is to be written in scientific format (avoid using “my”, “our”, “I”, or “we”).

Title Page
State the title of your work, your name, school address, and the date.

Abstract
Write a few sentences of the introduction, methods, results, and discussion. If you get information from other authors, you must cite them. You cite them by writing their last name followed by a comma and the year of publication in parentheses.

Introduction
Start by giving the background of the topic and end by stating the purpose of the study.

Materials and Methods (written in past tense)
Explain how you did the study. As you explain how you did the study, include the materials that you used in paragraph form. No lists.

Results
Start by saying what you found and end by showing what you found. You show the reader what you found by referring to tables or figures (graphs or diagrams). You refer to them by number (like Table 1 or Fig. 1). You must number your tables and figures. For tables or figures you must provide a key or legend to explain the meaning of any signs or symbols that you use. For graphs you must also label the x axis and the y axis and state the units (moles or grams, #, or %).

Discussion
Start by briefly telling the reader what you found and end by telling them what you think the results mean and why. If the study did not turn out as you thought it should, state the reasons why. How do you think these reasons gave you the results that you got? You can include your mistakes here but you must explain how you think these mistakes gave you the results that you got. At the very end of this section you should conclude by making a statement about whether the purpose of this study was accomplished or not, and what it means in a general sense.

Hints for writing papers
1. Keep a detailed record of what you used to do the study and how you did the study
2. Write the materials and methods section using this information
3. Look at your tables and figures and state what you got
4. Write the results section using these data
5. Decide what you think the results mean and why
6. Write the discussion using these ideas, conclude (general) by relating to the purpose
7. Decide what information the reader needs to know to understand the discussion
8. Write the introduction using this information, state study purpose, and write abstract.
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Acknowledgements
Thank everyone that helped you with the project except your coauthors.

Literature cited
Write the author’s last name, a comma, their first initial, and a period before writing the same for the other authors. Next write the year the paper was published, a period, the title, a period, the journal name, volume, and page numbers. Do this for each work cited and put on separate lines. Put in alphabetical order by last name of the first author.