



COURSE SYLLABUS

Course Number BIO 327SL	Course Title Marine Biology & Tropical Ecology		
Fall Semester	Spring Semester	Summer Semester XX	Credit Hours 4
Name of Instructor Dr. Todd A Rimkus			
Meeting Day, Time, and Room Number Lec: M-F TBA Gales Point Manatee Reserve Conf. Field Experiences: Belize: Mangrove Swamps, Coral Reefs, Estuary, Tropical Forest, Turtle Nesting Beaches			
Final Exam Day, Time, and Room Number July 22, 9:00-12:00 Manatee Reserve Conference Room			
Office Hours, Location, Phone by appt, 571-435-0703			
E-mail and Web Site trimkus@marymount.edu			
Course Description <u>BIO 327 Marine Biology and Tropical Ecology</u> The marine biology and tropical ecology of Belize are experienced firsthand in this study abroad course. Students will have unique opportunities to study and experience tropical jungles, coral reefs, savannas, limestone caves, mangroves, lagoons, and estuaries. Students also will have an opportunity to explore the habitats of manatees, spider monkeys, hawksbill sea turtles, and saltwater crocodiles. They will experience all of this while immersed in a different culture. This course satisfies the Liberal Arts Core requirement for a natural science with laboratory. Field experience/Service learning: 30 hours. <i>Liberal Arts Core/University Requirements Designation: NS. (4-6)</i>			

1. BROAD PURPOSE OF COURSE

BIO 327 Marine Biology and Tropical Ecology

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2. COURSE OBJECTIVES/LEARNING OUTCOMES:

Liberal Arts Core General Outcomes
Analysis, Critical Reasoning, and Problem Solving - Students will practice critical reasoning and problem solving by working through natural science laboratory experiments. - Students will apply knowledge and experience gained in the course to solve complex and newly presented scientific problems.
Personal, Social and Civic Responsibility - Students will practice civic engagement related to natural science.

Liberal Arts Core Discipline-Specific Outcomes
1. Students will demonstrate an understanding of how science has shaped the modern world.
2. Students will demonstrate an appreciation of the beauty and the interconnectedness of the natural world.
3. Students will demonstrate scientific literacy by developing an interest in science news and articles.

Course-Specific Outcomes
Upon successful completion of this course, students will be expected to:
1. be able to explain the dynamic of an ecosystem, including food chains food webs, trophic levels, pyramids of biomass and of energy.
2. be able to catalog and identify common species (by scientific name) inhabiting the study sites, and know where they fit in the ecosystem.
3. become familiar with and be able to explain standard field techniques measuring and studying ecosystems.
4. describe the physical/chemical/geologic/oceanographic influences on tropical habitats, and how these differ from those in temperate as well other regions.
5. understand the problems regarding endangered species – particularly those of manatees and sea turtles.

6. gain an appreciation of the problems of tropical agriculture and forests, their preservation and management, and economic impact.
7. be able to describe interrelationships and behavioral ecology of organisms encountered.
8. have experienced the culture of a developing country.

Service Learning-Specific Outcomes
1. Students will demonstrate evidence of critical reflection on their own values and ideals in light of their service learning experience.
2. Students will demonstrate an ability to work with people of diverse backgrounds and to learn from this experience through effective communication, listening, and adaptation.

3. TEACHING METHOD

Classroom Work prior to the trip
 Classroom and Field Experiences in Belize
 Classroom presentations given to each other
 Critiques of Classroom presentations

Each evening there will be a review of the day's field work. Digital photos and videos of sites and specimens will be examined, identifications made, and interrelationship explored.

Students will be responsible for three 20 minute presentations on species of interest. The presentations will be given to the group in the evening.

4. GRADING POLICY

Exam 1 and Exam 2: 100 pts each =	200 points
Final Exam 100 points	100 points
Presentations 50 points each X 2 =	100 points
Presentation critiques	50 points
Service Learning Presentation	50 points
Short Reflections 25 points each X 3	75 points
Service Learning Reflection	25 points
Research Papers X 2 75 points each	150 points
Field Notebook 200 points	200 points
Lab Techniques 100 points	100 points
Service Learning Field Experience Participation	100 points
<u>Final Reflection (Including Service Learning Reflection)</u>	<u>100 points</u>
 Total	 1250 points

Students wishing to withdraw from the course may do so by the specified deadlines listed below:

July 5th: Last day to withdraw from a course without academic record.

July 12th: Last day to withdraw from a course with a grade of W.

The final course letter grade will be assigned based upon the following break-down:

93 - 100%	= A	75 - 79%	= C+
90 - 92%	= A-	70 - 74%	= C
87 - 89%	= B+	67 - 69%	= D+
83 - 86%	= B	63 - 66%	= D
80 - 82%	= B-	60 - 62%	= D-
	00 - 59%	= F	

5. CLASS SCHEDULE

Important Dates:

Students wishing to withdraw from the course may do so by the specified deadlines listed below:

July 5th: Last day to withdraw from a course without academic record.

July 12th: Last day to withdraw from a course with a grade of W.

DATE	Topic
Pre-trip meetings	Background on Belize; Course requirements; Safety: General Principles of Ecosystems and Oceanography – Overview of Service Learning
Days 1-5	Natural Resource Conservation: Overview - Chapter 1-3 NRC Marine Environments Extended - Chapters 1 and 2 IBML Presentation 1 Exam 1
Days 5-9	Diversity Explorations – Chapters 3-6 IBML Estuaries and Reefs – Chapters 7-9 IBML Presentation 2 Exam 2
Days 9-14	Environments and Management Issues Chapter 9-14 NRC Plant and Animal Extinction and Management – Chapters 14-16 Presentation 3 (Service Learning Proposal) Final Exam

6. REQUIRED TEXTS

Chiras, Daniel, and John Reganold, *Natural Resource Conservation: Management for a Sustainable Future*. 10th Edition, Prentice Hall, 2009 ISBN 9780132251389

Sumich, James, and John Morrissey. *Introduction to the Biology of Marine Life*. 11th Edition, Jones and Bartlet, 2016 ISBN 9781284090505

Allen, Gerald and Roger Steene. *Handy Pocket Guide to Tropical Coral Reef Fishes*. Tuttle Press, 2004. ISBN 9780794601867

ADDITIONAL READINGS

Lieske, Ewald, *Coral Reef Fishes: Caribbean, Indian Ocean, and the Red Sea*. Oxford. 2002 ISBN 9780691089959

Nee, Michael and Daniel Atha, *Annotated Checklist of the Vascular Plants of Belize, and their Uses*. Perennial Press. 2012 ISBN 9781889878348

Ferrari, A. and A. Ferrari, *A Diver's Guide to Reef Life*. Regan Books. 2006 ISBN 9789832731016

Davies, J. and Jan Parr, *An Introduction to Behavioral Ecology*. 4th Edition. Benjamin Cummings. 2012 ISBN 9781405114165

ATTENDANCE REGULATIONS

A. Lecture: All lectures must be attended unless illness or some other serious reason prevails. You, the student are responsible for all the instructions and material given in the lecture, whether you are present or absent. If more than two lectures are missed (either singly or in succession) you are required to meet with the professor to discuss your standing in the course. Attendance will be taken.

B. Laboratory and Field Experiences: Laboratory and/or Field Experience attendance is necessary to acquire the skills assigned. Therefore, you may not absent from the lab nor field experience. Labs and Field Experiences cannot be made up. Attendance will be taken prior to departure and prior to each return trip. Directions and warnings given by Field Experience Supervisors must be honored and obeyed at all times. Field Experience Supervisors will provide safety information as well.

COURSE REQUIREMENTS

A. Exams: The lecture material will be tested 3 times during the course. The tests will cover the material presented in lecture and material observed during field experiences.

B. Presentations and Critiques: Three presentations will be given by each student. The presentations will be evaluated by peers and the instructor. As advanced students, the additional responsibility to make sure that accuracy relative to biology is maintained is your responsibility. Presentations should involve original digital photos or video of the species described in the presentation. Presentations should be 20 minutes in length. Presentation Critique forms will be filled out after each performance and summarized by the instructor before a discussion with the instructor.

C. Service Learning Field Experience: In collaboration with the professor and the community of Gales Point Belize, service projects will be identified. Some possible projects might include small building projects, beach clean ups, village clean ups, engagement with the Hawksbill Hope Scholars, recycling programs, or similar programs. There will be one longer experience or several shorter experiences that will be planned over several days. The minimum number of hours spent directly on these service projects will be 30 hours. Additional time will also be spent on reflection on working with the community of Gales Point Belize and self-reflection of what the impact of service learning has on your own person as well as the community we serve. Your third presentation in this course will be a proposal of what types of community service you think can be accomplished within the short term or longer term with the community of Gales Point. Once the travel portion of the course has been completed, you will need to do one final reflection on the service aspect of this course evaluating it as a process and the good it does for the community partner. ***You will NOT be able to pass this course without completing the 30 hours of service learning and submitting the final reflection which includes your assessment of the service learning component of this course.***

D. Research Papers: Each student is responsible for two research papers. One will be on an environmental issue and one on an endangered species management plan. Each paper should be 15 to 20 pages in length and include at least 10 references.

E. Field Notebook: Each student is required to keep a field notebook with notes of the day's activities. The Notebooks will be collected each week and reviewed with the instructor. Notebooks should be supplemented with pictures or turned into an online journal.

F. Lab and Field Techniques: Several times over the duration of the course, field techniques will be observed by the instructor and evaluated. Lab Techniques Evaluation Forms will be filled out by the instructor and provided to students for discussion.

G. Participation: Each student is expected to engage in the activities of the day. Students will lose points for being an observer instead of an active participant.

H. Reflections: Periodically each student is expected to reflect on the experiences as well as their own personal condition and feelings. Particular attention will be made to the service learning aspects of the course. Upon completion of the course a Final Reflection will also be completed and again each student will include feelings on how the service learning component of this course effected them personally and the community of Gales Point.

FIELD EXPERIENCE SCHEDULE:

Lab/Field Destinations:

Mangrove Swamps (by canoe)

Coral Reef (snorkeling)

Estuary (by boat)

Tropical Forest (by boat and by foot)

Turtle Nesting Beaches (by foot, evening and morning walks, egg laying and hatching may be observed)

Service Learning Project (within Gales Point community)

Manatee Lagoon (by boat)

Savanna and Cave (by boat and by foot)

Mayan Ruins (by foot)

Each of the above locations will be visited at least once and the schedule will depend on weather and sea conditions.

Cultural Experiences:

Drum making and lessons

Creole Cooking and Language Lesson

Sambai - Dance

7. UNIVERSITY STATEMENTS

CLASS REGISTRATION REQUIRED

Students not officially enrolled in a course offered by the university may not attend class according to university policy. Faculty are responsible for upholding this policy and may not add students to a class roster in Canvas.

ACADEMIC INTEGRITY

By accepting this syllabus, you pledge to uphold the principles of Academic Integrity expressed by the Marymount University community. You agree to observe these principles yourself and to defend them against abuse by others. Items submitted for this course may be submitted to TurnItIn.com for analysis.

STUDENT COPYRIGHT INFORMATION

For the benefit of current and future students, work in this course may be used for educational critique, demonstrations, samples, presentations, and verification. Outside of these uses, work shall not be sold, copied, broadcast, or distributed for profit without student consent.

ACCOMMODATIONS AND ACCESSIBILITY CONCERNS

If you are seeking accommodations (class/course adjustments) for a disability, here are the steps to take:

- 1) Register as a student with a disability with [Student Access Services](#) (SAS) in the Center for Teaching and Learning (CTL). This process takes time, so engage with SAS as early as possible.
- 2) Once registered with SAS, you may be approved for accommodations by SAS. Approved accommodations will be listed on a "[Faculty Contact Sheet](#)" (FCS), and you will receive a copy of this FCS from SAS.
- 3) Meet with each of your instructors as soon as possible to review your accommodations as per the FCS, and have them sign the FCS. This document will help you and your instructors develop a plan for providing the approved accommodations.
- 4) Let SAS know if you have any concerns about how your accommodations are being implemented in the classroom.

Please remember that:

- 1) The steps above are required in order to be granted reasonable accommodations for disabling conditions.
- 2) Accommodations cannot be implemented retroactively. That is, accommodations can only be applied to a course *after* they have been approved by SAS, and *after* you have discussed your accommodations with your instructor and the instructor has signed the FCS.
- 3) Appointments with SAS staff are scheduled through the Starfish "Success Network" tab (you can access Starfish through Canvas). For more information, check the SAS website, e-mail access@marymount.edu, or call 703-284-1538.

Temporary Challenges

Temporary challenges due to accident, illness, etc. that may result in missing class or navigating general campus access do not necessarily fall under the purview of SAS. If you experience something of this nature, please start by alerting your instructors. The Dean of Student Success may be involved in alerting instructors in extreme cases.

EMERGENCY NOTIFICATION POLICY

When students are absent due to a crisis situation or unexpected, serious illness and unable to contact their individual instructors directly, the Division of Student Affairs can send out an Emergency Notification. To initiate an Emergency Notification, students should contact the **Division of Student Affairs 703-284-1615** or student.affairs@marymount.edu. Emergency Notifications are **NOT** appropriate for non-emergency situations (e.g. car problems, planned absences, minor illnesses, or a past absence); are **NOT** a request or mandate to excuse an absence, which is at the sole discretion of the instructor; and are **NOT** a requirement for student absences. If a student contacts instructors about an emergency situation directly, it is not necessary to involve the Division of Student Affairs as arrangements are made to resolve the absence.

For non-emergency absences, students should inform their instructors directly.

ACCESS TO STUDENT WORK

Copies of your work in this course including copies of any submitted papers and your portfolios may be kept on file for institutional research, assessment and accreditation purposes. All work used for these purposes will be submitted confidentially.

UNIVERSITY POLICY ON WEATHER AND EMERGENCY CLOSINGS

Weather and Emergency closings are announced on Marymount's web site: www.marymount.edu, through **MUAlerts**, area radio stations, and TV stations. You may also call the **Weather and Emergency Hotline at (703) 526-6888** for current status. Unless otherwise advised by local media or by official bulletins listed above, students are expected to report for class as near normal time as possible on days when weather conditions are adverse. Decisions as to inclement closing or delayed opening are not generally made before 6:00 AM and by 3:00 PM for evening classes of the working day. Emergency closing could occur at any time making **MUAlerts** the most timely announcement mechanism. **Students are expected to attend class if the University is not officially closed.** If the University is closed, course content and assignments will still be covered as directed by the course instructor. Please look for communication from course instructor (e.g., Canvas) for information on course work during periods in which the University is closed.