BI 100: Environmental Biology
Lecture Syllabus, Fanuchånan (Fall) 202x

Sections

BI 100-0x: **BI 100-0x**: MW 8:00–9:20 & 14:00–15:20 PM, Class room Sci 200 - (3 units)— Dr. Michael Orr

Instructor: Dr. Michael Orr

SC109; Ph: 735.2787, EMAIL: orrm@triton.uog.edu

Office hours: Via Moodle chat or can request direct online chat via BigBlueBox upon request at mutually agreed upon time. You are welcome to contact me via Moodle chat with questions regarding grades, instructions or advisement. M 11:00AM-1:00 PM, W 11:00AM-1:00 PM, TH 11:00AM-1:00 PM

Feedback Timeframes: To the best of my ability, Moodle message replies to coursework questions will be sent between 8AM on Mondays and noon on Thursdays.

Technical Support: For technical difficulties, try using the Help Forum to get help from classmates. Or you can contact the distance learning / information technology office. Contact the UOG Office of Information Technology (aka: the Computer Center) by email at helpdesk@uog.edu or by phone at (671) 735-2640.

Dr. Michael Orr

Michael Orr is motivated by a massive amount of inquisitiveness and the kinds of experiences that often result in wind-chapped hands and sunburn from long hours on the water or in the field. He believes every eager student, oceanic mass, threatened species, mountain range, pristine land track, whipping sail, developing eco-system, and unexplored route on the tip of the map deserves a champion…actually, a slew of them. That is why he has dedicated his career to the scientific subject matter that serves as his muse in the natural world – the fields of neurophysiology, marine biology and environmental science. In and out of the classroom, he values working and playing hard, often combining his passion for science with his personal endeavors.

Catalog course description

Students will gain an understanding of Pacific Island environments and their ecological principles: the diverse ecosystems; the biological, physical, and chemical processes and interactions that regulate these ecosystems; how scientists learn about and describe nature; and the ways in which humans affect and are affected by the natural environment. To meet General Education goals, students will develop science literacy and skills, coming to appreciate the values of science and how science affects their everyday life. The lab (BI 100L) must be taken concurrently.

Rationale for offering the course

Through environmental biology content, BI 100/L provides grounding in the ways of science and meets the goals of the General Education (GE) curriculum in either the Tier II STEM—Science and Math category or the Uniquely UOG Regional option. It also counts for credit toward the BS in Biology. The GE curriculum includes science courses because,

"Science permeates every facet of the human experience through intellectual and technological products. Educated citizens understand and are able to discuss the ways science and technology affect themselves. First-hand experience with the practices of science improves understanding of science's strengths and challenges. Individuals who have experience with the scientific practices of observing, identifying, describing, experimenting, and explaining natural phenomena better understand the scientific conceptual framework and its

implications for the human experience. They know more about discriminating scientific fact from error, constructing scientific principles, hypotheses testing, and solving problems scientifically."

In addition, knowledge of the natural environment, the processes that shape it, and how scientists study and model it, are important to all citizens in understanding and reacting to environmental issues, which range from local land use decisions to global questions of climate and resource sustainability, from consumer choices to international treaties. This course presents the science relevant to such discussions, and shows how science is one key element in policymaking, assisting students to be informed consumers of scientific information and to form their own conclusions on environmental issues.

The lab component is a co-requisite and an integral part of the learning process, even though students register for it as a separate course of 1 credit hour (an administrative process so that students may take any lecture section along with any lab section). As noted by the GE committee,

"A long history of experience shows that didactic courses augmented with hands on laboratories provides an effective structure for learning science. … The laboratory should provide students with the opportunity to conduct experiments [or make observations], analyze data, and write reports."

The lab component provides the experiential side of the course both to improve students' skills in observation and analysis; the lab also supports learning in the lecture part of the course, for example by showing real instances of the concepts students are learning. Essentially, the labs enable students to study nature and not just study books.

ONLINE LEARNING ACCESS

Computer and online pre-requisites: To complete the work required students will need to be able to access and work within a UOG-hosted Moodle course and on the local BBB server using UoG Moodle login. **Technical problems with UOG Moodle system?** Contact the UOG Moodle Help team by email at moodlehelp@triton.uog.edu or by phone at (671) 735-2620/1

Required Computer Software:

1. Free Internet Browser: **Mozilla Firefox:** https://www.mozilla.org/en-US/firefox/new/
2. Or you can use the free **Google Chrome:** https://www.google.com/chrome/
3. Free .pdf File Reader: **Adobe Acrobat Reader DC:** https://acrobat.adobe.com/us/en/products/pdf-reader.html

Intended student learning goals

The following table lists the Student Learning Outcomes or goals for this course. The second column identifies the Biology Program Learning Outcomes (see 2016 UOG Catalog, pg. 98) that are associated with the goals of this course. The third column identifies the UOG Learning Outcomes (see 2016 UOG Catalog, pg. 12) that are associated with this course. Finally, the last column identifies the assessment methods that will be used. The details of how each instructor guides students to meet these objectives vary somewhat, but the common intended outcomes are as follows.

Course SLOs	Program SLOs (PLOs)	University SLOs (ILOs)	Assessment Method
1. Observe, describe, and compare-and-contrast structure and function of island ecosystems, and human interactions with them, within the context of current biological, ecological, and evolutionary paradigms.	PLO 1a	ILO 6	Pop quizzes, lecture exams, and class discussions
2. Demonstrate a basic grasp of key biological concepts relevant to environmental biology (as listed in the back of the textbook).	PLO 1a	ILO 6	Pop quizzes, lecture exams, and class discussions
3. Demonstrate basic knowledge that will provide the basis for your responsible use of natural resources and technology.	PLO 1b	ILO 5	Pop quizzes, lecture exams, and class discussions

4. Describe the ways in which scientists in various disciplines involved in environmental biology think and work—especially how scientists deal with uncertainty, and how these ways differ from and are useful to public policy making.	PLO 1d	ILO 3	Pop quizzes, lecture exams, and class discussions
5. Demonstrate a basic level of skill in evaluating the data in scientific graphs and tables.	PLO 3	ILO 2	Pop quizzes and lecture exams
6. In lab, demonstrate basic skills in problem solving through the process of a scientific study and report write-up.	PLO 1c	ILO 1	Lab report
7. In lab, use scientific literature and diagrams as a source of information, properly cite sources and avoid plagiarism, and use computer software to create text and graphics to communicate results effectively through a scientific report.	PLO 5	ILO 3	Lab report

Course content

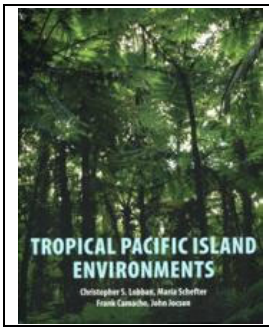
The course begins with an introduction to the methods of science, particularly hypothesis development and testing through experiment or observation, and explores the reasons for uncertainty in scientific conclusions. Subsequently, students are introduced to island ecosystems and the conceptual frameworks by which biologists make sense of the vast numbers of species—including humans—and their interactions with each other and with their physicochemical environment. Major ecosystems are explored in the classroom and in the field: terrestrial forests and grasslands, freshwater habitats, and the coral reefs. In the third part of the course students learn how populations grow and decline as a basis for understanding issues of pest control and endangered species protection. Finally, students learn about natural resources and their management and mismanagement, including the global atmosphere, in the context of sustainability. We generally treat the topics in the order in the textbook except for including basic climate information (Ch. 3) at the end as a lead-in to climate change.

Format and activities in the course

The schedule includes three hours of lecture each week and three hours of lab. Assessment activities in the lecture section include pop quizzes, in addition to periodic in-class tests. Students will be guided in lab to develop an environmental question, make observations that address the question, and write up the data in a lab report. (This is not part of your lecture grade.)

Labs are usually field trips but some are indoor practical or "vicarious field trips" via documentary videos or exercises. While the lab sections vary with instructor, tides and weather, each overall achieves the goals stated above and considers the variation (particularly in timing) when conducting assessment in the lecture section. Labs will be held rain or shine, unless the weather conditions are severe. *Come prepared.* If you are in doubt whether a trip is on, come to the science building, because instructors may make last-minute decisions to hold the lab indoors instead of going on a field trip. A cancelled field trip does not mean a cancelled lab period! Active participation in labs is required. Physical requirements will be explained in advance, and information on all the field trips will be posted. Students unable to meet the physical requirements of any or some field trips must discuss the situation with the instructor in advance and make arrangement for alternative support of the intended learning outcomes.

Textbook, readings, and additional materials or equipment



Tropical Pacific Island Environments, 2nd edition by C.S. Lobban M. Schefter, F. Camacho, and J. Jocson. This textbook is required for this course.

This is a required resource!

The textbook for the course is *Tropical Pacific Island Environments, 2nd edition* by C.S. Lobban M. Schefter, F. Camacho, and J. Jocson. This textbook is required for this course. The textbook was developed specifically for this course, to provide information in a local context. This book represents the most comprehensive review of the ecology and environmental challenges of insular (island) environments to date.

You are expected to use these learning resources as active learners. Read appropriate sections of the book *in advance*, and *again after* the topic is covered in class. We do not teach the textbook—we assist you to understand topics. The book is a convenient resource, but it is not the only one! Videos in class or lab, field trips, and information in the news and on the Internet, are all legitimate resources, though you must judge the reliability and currency of external sources.

For the lab, appropriate clothing, especially a hat, and appropriate footwear for field trips will be necessary. You should also have an ample supply of water for each field trip.

Pop quizzes, exams, species descriptions, lab notebook and mark-recapture study

Quizzes and tests will be accessed online through Moodle or via paper exams (instructors prerogative) —this means that you must have an electronic device to do so (phone, tablet, or laptop). Pop quizzes may be administered in lecture when you least expect them. To master these quizzes, you will need to review the material after each class and prepare for the next class by pre-reading the textbook. We recommend that you make questions from the specific learning objectives for each chapter and write answers to them. These quizzes will be short, but are designed to encourage you to keep up with learning the material.

There will be 3 in-class lecture exams (closed book, full class period) and a comprehensive final lecture exam (closed book, 2 hours) (which will cover all the material from the beginning of the course). The exams will challenge your thinking. They may include multiple choice, short (point-form) answer, graphs and figures to interpret, and drawings to label.

Evaluation and grades

Our course philosophy is to see that you have gone beyond memorizing facts, and have reached a level of understanding and applying key concepts. Your understanding will be tested through your skills in:

- *interpreting*—e.g., changing classification diagrams into text or vice versa; reading graphs;
- *exemplifying*—e.g., giving an example of …;
- *classifying*—e.g., being able to classify the trophic level of an animal from a food web diagram;
- *summarizing*—e.g., be able to *summarize* the process by which Darwin arrived at his hypothesis of atoll formation;
- *inferring*—e.g., draw a logical conclusion from presented information;
- *comparing*—e.g., determine how similar things are as a criterion for applying analogy; and
- *explaining*—e.g., explain the cause of drought during El Nino.

In addition to understanding, you will be expected to

- *apply knowledge*—e.g., apply argument by analogy to make strong predictions; and
- *evaluate*—e.g., establish criteria for judging the effectiveness of a proposed solution to an environmental problem.

You will begin with *factual knowledge* (i.e., terminology, specific details), but the goal is for you to end with *conceptual knowledge*, including:

- knowledge of principles and generalizations;
- knowledge of theories; and
- knowledge of classifications.
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This semester we will be attempting an in class-testing center on Fridays. Details will be discussed in class.

The grading for the lecture is as follows:

pop lecture quizzes	10%
3 in-class exams	60%
final exam (comprehensive)	30%
total	100%

This class uses criterion-referenced marking and generally grades are not placed on a curve. Note that lecture and lab grades are separate. We use criterion-referenced marking and generally do not grade on a curve. The percentages required for grades are usually: A+ = 98–100%; A = 93–97%; A- = 90–92%; B+ = 87–89%; B = 83–86%; B- = 80–82%; C+ = 77–79%; C = 70–76%; D =60-69%; F = <60%. NOTE: Grades may be tracked on Moodle for reference but are only an ***approximation*** to the final grade.

Course policies

You are responsible for your learning. Take full advantage of the resources available, including your textbook, lectures, library, internet, and office hours.

- We recommend that you attend and focus during every lecture period. Moreover, you will get the most out of lecture sessions if you have prepared for the lecture **before** class. You must take responsibility for your own learning.
- Attending exams is mandatory. You will be excused from a lecture exam only in the case of a major emergency (e.g. illness, family tragedy, etc.). These emergencies must be documented and medical excuses **require** a physician's note. If something stops you from attending class—go see your instructor. ***There will be no make-up quizzes or exams***—If you miss an exam for a reason your instructor considers valid, your instructor will average it out of your score, otherwise your score = 0.
- Do not leave an examination until you have finished the exam in its entirety.
- If something prevents you from attending class, or if your instructor cannot give a class because of absence, typhoon, etc., you are still responsible to keep up with the reading/study; contact a classmate for copies of new handouts if necessary.
- ***No extra-credit assignments or extra-credit exams of any kind will be given***.
- ***All exams and quizzes will be in-person (F2F) or ONLINE will be held via Moodle in the assigned classroom unless specified. One testing window is allowed and all other windows, desktops, screens, tabs or the like shall be closed on your testing device (laptop, phone, tablet) during quizzes or exams. Any of the aforementioned found to be opened during a quiz or exam will be considered unauthorized assistance and protocol for cheating will ensue.***
- ***Safe Exam Browser (SEB) will be used for all exams and can be downloaded onto your device using the following link:*** https://safeexambrowser.org/download_en.html
- ***Faculty and TAs reserve the right to adjust brightness of your screen or examine your testing device (laptop, phone, or tablet) during quizzes and exams to ensure that there are no additional windows open***.
- **Academic dishonesty**: All quizzes and exams must be your own work. The term "**plagiarism**" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. If you are not sure what plagiarism is and how to avoid it in using sources for your work, see www.indiana.edu/~wts/pamphlets/plagiarism.shtml—but be careful when paraphrasing not to change the meaning of scientific information. In this course, the use of **artificial intelligence (AI)** tools during tests and exams is strictly prohibited unless explicitly authorized by the instructor. It is crucial that tests reflect your own understanding and abilities. Any attempt to use AI to generate answers, write essays, solve problems, or otherwise influence your performance in assessments will be considered a violation of academic integrity. **Plagiarism will be punished with a final grade of "F" in this class.** Similarly, the answers that you write on exams must come from inside your head or the information supplied in the quiz or test; anything else is cheating. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes or exams, e.g., looking at other students' answers or getting information from another person via any kind of communication; (2) dependence upon the aid of sources beyond those authorized by the instructor in solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of quizzes, exams or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with your instructor in advance. **Cheating on any exam will be punished with a final grade of "F" in this class for all students involved, including those who allowed other students to obtain or read their answers.**

UOG Disabilities Policy Statement

For individuals covered under the ADA (Americans with Disabilities Act), if you are a ***student*** with a disability requiring academic accommodation(s), please contact the Disability Support Services Office to discuss your confidential request. A Faculty Notification letter from the Disability Support Services counselor will be provided to me. To register for academic accommodations, please contact or visit Sallie S. Sablan, DSS counselor in the School of Education, office 110, disabilitysupport@triton.uog.edu or telephone/TDD 671-735-2460.

No Unauthorized Recording:

Only the instructor may record class sessions. Unauthorized recording of online class meetings is not allowed, to include screen shots that include identifiable information of any person in the session. Not only is the delivery of course content the intellectual property of the instructor, but students enrolled in the course have privacy rights. No person shall publish, print, display or otherwise publicly use name, portrait, photograph, or other likeness of the instructor(s) for any reason whatsoever. Unauthorized recording and distribution of online courses may violate federal law.

Tobacco-free/Smoke-free/Vaping-free campus

UOG is a tobacco-free/smoke-free/vaping-free/e-cigarette-free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping to make UOG a healthy learning environment.

Schedule

You will be given the tentative schedule today and it will be updated regularly during class, so you can catch up if you miss class.

Drop dates

University policy sets the drop dates. You can withdraw from classes "voluntarily" until 3 October 2020 and as late as 6 December 2020 with your instructor's signature on a withdrawal form. Monitor your progress! If you perform poorly on an exam, find out why and make appropriate changes.

Student workload

Time outside the classroom—You should plan to spend at least 2 hours studying for every hour of **lecture** class time (as with every class. We suggest you structure those 6 hours per week as follows. (These times will vary from student to student, and from day to day depending on assignments and exams; the 6 hr/week and the allocation of that time are suggestions that you may need to adjust based on your experience in this course.)

2 hours pre-reading the textbook (*before* class).
- —Read the parts of the chapter that are assigned
- —Make note of new terms/key words, and write out definitions. (Key words are printed in boldface when first introduced. The definitions can be found in the Glossary at the back of the book.) You will be expected to know what the terms mean and be able to work with them.

2 hours re-reading the textbook and revising your notes after class.
- —Focus on the specific objectives in the syllabus. These are your study guide and test questions.
- —Note that you should take notes during lecture, the slides will NOT be available on Moodle.

2 hours doing assignments and testing yourself on the specific objectives.
- —The specific objectives can easily be converted to test questions. You should write out practice answers to all these questions. This way you will (a) be ready for whatever selection of them appears on the test; (b) become aware of any points which may need clarification in class or during office hours.

+ additional time working with other print/Internet sources.
- —If the textbook does not give clear, complete, or up-to-date information that will allow you to answer the specific objectives, or if you feel that you need different resources to understand the material better, you should seek additional information.
- —*Beware!* There is plenty of disinformation and well-intentioned misinformation on the web. Assess the sources and use only reliable ones.

Contact information for classmates

Write down the names and contact info for at least two or three classmates you can contact if you miss a session or want to study together. We encourage you to form study groups!

Other contact points:

- Contact Office of Information Technology at 735-2630 or oit@triton.uog.edu
- Contact the Triton Advising Center at 735 – 2271 or tac@triton.uog.edu
- Contact Uplift Counseling Services at 787-7978 or uplift@westcare.com
- Contact Project Tulaika Mental Health Services at 647-5317; 647-1901; 647-5440; 647-8833/34 or care@gbhwc.guam.gov

Tentative Schedule of lectures for BI 100 Fanuchånan (Fall) 202x

Week of	Topic
12, Aug	Introduction to BI 100 Syllabus, Timetable Course Policies
19 Aug	Introduction to Environmental Science Islands, People, & Knowledge Study Chapter 1
26 Aug	Environmental Biology Principles Physical Environment Study Chapter 2
2 Sept	Environmental Biology Principles Habitats Study Chapter 3
19 Sept	**Test 1 (Chapters 1–3)**
9 Sept	Environmental Biology Principles Diversity of Life Study Chapter 4
16 Sept	Environmental Biology Principles Island Populations & Communities Study Chapter 5
23 Sept	Environmental Biology Principles Ecosystems Study Chapter 6
30 Sept	**Test 2 (Chapters 4–6)**
7 Oct	Pacific Island Ecosystems Terrestrial Ecosystems Study Chapter 7
Oct 9-14	Fanuchånan Break (No Classes)
14 Oct	Pacific Island Ecosystems Freshwater Ecosystems Study Chapter 8
21 Oct	Pacific Island Ecosystems Marine Ecosystems Study Chapter 9
28 Oct	Pacific Island Ecosystems Marine Ecosystems Study Chapter 9
2 Nov	**All Soul's Day Holiday**
4 Nov	**Test 3 (Chapters 7–9)**
10 Nov	**Veteran's Day Holiday (Observed)**
11-18 Nov	Change & Sustainability Ecosystem Changes Study Chapter 10
Nov 24-25	**Thanksgiving Holiday - No classes**
28 Nov	Change & Sustainability Climate Change

	Study Chapter 11
2 Dec	Change & Sustainability Ecosystem Management & Sustainability Study Chapter 12
9 Dec	**Our Lady of Camarin Day**
12 Dec	**Last Day of Classes** **Today**—last day for Withdrawal by Petition
14-16 Dec	**Section 1—TBD Final Exam—Comprehensive** (Chapters 1–12)