

## ZOO 4926 / ZOO 6927

### Biodiversity: Life on Earth

Or - What we know and don't know about life on Earth

#### Synopsis:

The goal of this course is to give you an overview of life on Earth, engage you with biodiversity in natural settings, and introduce you to tools and databases on biodiversity. The first will focus on a broad-brush overview of the diversity and evolution of life, from bacteria to giant squid and kelp. The second will give you an introduction to the macroscopic biota of marine, terrestrial, and freshwater habitats, and ways to learn about them. The third will explore biodiversity through databases, and via image, specimen, and DNA sequence data to drill into knowledge about individual species. This course will open your eyes about the deep knowledge we have about some organisms, but also how little we know about the vast majority of species on Earth.

**Instructor:** Gustav Paulay

**Prerequisites:** BSC2010 & 2011 recommended

**Text / Materials:** no text; assigned research papers selected and reviewed by instructor

#### Lectures:

Wednesdays 3:00-4:55 pm in Carr 611

#### Field trips:

~7 field trips on Saturdays and Sundays. Students taking the course for 2 credits need to participate in three of these for full credit, including at least one each in marine, freshwater, and terrestrial habitats. Those taking it for 3 credits need to participate in five. All of you are welcome to participate in all field trips. Field trips will range in time from 2-3 hours to 7-8 hours for the coastal ones

#### Grading Policy:

- field trip participation: 30%
- iNat project: 30%
- Project: 40%
- Grad student: presentation and leading discussion on an assigned paper: 20% (other proportionately adjusted)

**Grading Scale:** (minimum grade; grading will be on a curve, with grade cutoffs usually adjusted downward)

90-100% = A; 80-89.9% = B; 70-79.9% = C; 60-69.9% = D; <60% = E

**iNat project:** record 10 species per field trip (30 or 50 for full credit) for undergrads, 15 species for grad students. No more than one third of these can be of animals or of vascular plants, and at least a third per trip should involve a symbiotic association/feeding interaction that you note in the record in iNat. We will discuss this assignment in the first class

**Project:** You will review species level knowledge on a clade of organisms based on online occurrence, taxonomic, and genetic data.

### **Tentative lecture schedule**

- 15-Jan Overview of biodiversity, biosphere, time, origins, ToL
- 22-Jan Prokaryotes and eukaryotes - origins, implications
- 29-Jan Eukaryotic complexity - photosymbiosis, chemosymbiosis, multicellularity
- 5-Feb Species diversity and DNA barcoding
- 12-Feb Habitats and diversity: opportunities and challenges
- 19-Feb Life in non-marine aquatic habitats
- 26-Feb Fungi, lichens
- 5-Mar Colonization of land, plants
- 12-Mar Species delineation and identification
- 19-Mar *Spring break*
- 26-Mar Animal origins and diversity
- 2-Apr Arthropods
- 9-Apr Unicellular eukaryotes, pelagic realm
- 16-Apr Multicellular eukaryotes, algae
- 23-Apr Overview & summary

### **Tentative field trip schedule**

- 18-Jan Sat Puddles, ponds, and forests
- 26-Jan Sun Gulf coast
- 22-Feb Sat River field trip
- 8-Mar Sat Fungal forests
- 30-Mar Sun Atlantic coast
- 6-Apr Sat Fields and forests
- 12-Apr Sat Plankton

**Course Website:** E-Learning (Canvas)

**Attendance Policy:** Attendance and participation in all lectures and appropriate number of field trips is required. If you miss a class or field trip due to illness, contact the instructor as soon as you are able to make arrangements for make-up work.

### **Accommodations**

Students who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### **Course Evaluations**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at [gatorevals.ua.ufl.edu/students/](http://gatorevals.ua.ufl.edu/students/). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via

[ufl.bluera.com/ufl/](http://ufl.bluera.com/ufl/). Summaries of course evaluation results are available to students at [gatorevals.aa.ufl.edu/public-results/](http://gatorevals.aa.ufl.edu/public-results/).

### **Academic Integrity**

“UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### **Resources Available to Students**

#### ***Health and Wellness***

- *U Matter, We Care*: [umatter@ufl.edu](mailto:umatter@ufl.edu); 392-1575
- *Counseling and Wellness Center*: <http://www.counseling.ufl.edu/cwc/Default.aspx>; 392-1575
- *Sexual Assault Recovery Services (SARS)*: Student Health Care Center; 392-1161
- *University Police Department*: <http://www.police.ufl.edu/>; 392-1111 (911 for emergencies)

#### ***Academic Resources***

- *E-learning technical support*: [Learningsupport@ufl.edu](mailto:Learningsupport@ufl.edu); <https://lss.at.ufl.edu/help.shtml>; 352-392-4357 (opt. 2)
- *Career Resource Center*: Reitz Union; <http://www.crc.ufl.edu/>; 392-1601
- *Library Support*: <http://cms.uflib.ufl.edu/ask>
- *Teaching Center*: Broward Hall; 392-2010 or 392-6420
- *Writing Studio*: 302 Tigert Hall; <http://writing.ufl.edu/writing-studio/>; 846-1138

### **Procedure for Conflict Resolution**

Any classroom issues, disagreements or grade disputes should be discussed first between the instructor and the student. If the problem cannot be resolved, please contact the Undergraduate Coordinator or the Department Chair. Be prepared to provide documentation of the problem, as well as all graded materials for the semester. Issues that cannot be resolved departmentally will be referred to the University Ombuds Office (<http://www.ombuds.ufl.edu>; 392-1308) or the Dean of Students Office (<http://www.dso.ufl.edu>; 392-1261). For further information refer to [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf) (for residential classes) or <http://www.distance.ufl.edu/student-complaintprocess> (for online classes).