

Syllabus: Summer 2022, June 30 – July 30.

Important! The GSU provost has mandated that this course will be in-person (face to face). Covid-related recommendations are detailed on “http://lorenzabeati.klacto.net/arthropod_swiss.html” under “Covid and GSU recommendations”. Please read carefully.

BIOL 5343 and 5343G: Biological Field Experience, Arthropod Diversity and Ecology of the Swiss Alps, 4 credit hours (1 lecture/3 lab hours; ~160 contact hours)

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Course Schedule and Locations (classes are given each week day from 8.30am to 5pm, with one hour lunch break):

Weeks One and Two: Georgia Southern University, Biological Sciences Bldg., Rm. 3376.

Weeks Three and Four: Alpine Biology Center, Piora (CBA), Ticino, Switzerland

No textbooks are required. Reading materials will be provided by instructors

Course Description:

Field expeditions are an important component of biologist/ecologist research programs. Field research, whereby organisms are collected, identified, and observed in their natural habitat, is the key method by which scientists gain a better understanding of the diversity and ecology of organisms in remote habitats. Field research in a foreign country, however, requires significant preparation, including understanding the biological and geographical features of the location, and learning how these aspects fit into a broader cultural, socio-economical, and political context. Other practical aspects such as preparation and packing of learning materials, of trapping materials, and of appropriate personal items, organization of travel schedules, and administrative organization are also considered.

The Swiss Alps are one of the richest environments, in terms of biodiversity and endemism of arthropods, in Europe. The Center for Alpine Biology in Piora, Switzerland (<http://www.piora.org/>) is a fully-equipped field station located at

2000m (6000ft) altitude on an alpine meadow on the Swiss-Italian side of the Alps. The station has modern laboratories, a seminar room, and living accommodations for over 50 researchers. Swiss alpine landscapes have been shaped by hundreds of years of interactions between humans and nature. Any field expedition in this type of environment requires a key understanding of local history and culture.

This course will consist of 2 components:

1) A 2-week course at Georgia Southern University focusing on the theoretical and practical steps required for the organization of a successful field expedition in a foreign country, in this case, an expedition aiming at exploring and documenting arthropod diversity and ecology in the Swiss Alps and

2) Direct application of the theoretical knowledge and practical skills acquired in the classroom during a 2-week field expedition in the Swiss Alps.

Course Objectives:

This course has 2 key objectives:

1) The first objective is to prepare and organize a biological field expedition. Preparation will include: a comprehensive literature search (e.g., library, online resources, maps) to obtain information on Swiss alpine ecology, alpine arthropod fauna, and Swiss sociocultural and historical events which have shaped the Alpine environment. In-class lectures will also be given to provide students with a better understanding of:

- a) the ecology (geology, hydrology, soil types, flora, climatic aspects) of the Southern Swiss Alps,
- b) the diversity of arthropod fauna students are likely to encounter in the Alps,
- c) modern techniques for collecting, identifying, preserving, and observing arthropods,
- d) how to use field equipment that will be used at the remote field site,
- e) selection and development of an individual field-based research project, and
- f) the administrative aspects of traveling abroad (assistance will be provided by "Study abroad" personnel).

2) The second objective is to conduct a hypothesis-driven field-based research project using experimental design principles and statistical analysis of results at the The Center for Alpine Biology, in Piora, Switzerland, culminating in preparation and presentation of an oral report on the findings of the research. Guest lectures on Swiss natural history also will likely be given by European researchers working on different aspects of Alpine biodiversity. Typical research activities include daily field collection or observation of specimens in terrestrial (alpine meadows or subalpine forests) or aquatic habitats (lakes, streams, rivers or snowpools), followed by identification of specimens in the laboratory using identification keys and guides provided by the instructors. Course-related activities typically take 8 to 12 hours per day.

In addition to course content, students will be provided with a variety of unique travel abroad opportunities, including:

- a) traveling across Switzerland (a small country, subdivided by different linguistic and cultural areas),
- b) exploring the nearby medieval Italian-Swiss town of Bellinzona, which is a UNESCO World Heritage Site,
- c) visiting the dairy and cheese-making facility on the Piora site,
- d) meeting with other local and international students in Piora,
- e) experiencing typical North Italian culture and cuisine. Students can also explore the region during off-hours and weekends; major towns in Switzerland (e.g., Lugano, Geneva, Bern, Zürich) and Italy (e.g., Como, Milano, Genova, Verona) readily can be reached by public transportation from the field site.

Learning Outcomes:

Upon completing the class, students will:

- 1) know how to identify diverse arthropod groups that can be found in the Swiss Alps,
- 2) know where to find information on ecological factors influencing arthropod distributions of the Alps,
- 3) have learned modern techniques for observing and recording arthropod behavior,
- 4) have learned modern methods for collecting (e.g., light traps, sweep nets, dip nets, pitfall traps, malaise traps), identifying, and preserving arthropod samples, and
- 5) have a better knowledge of the Swiss and Central European historical, cultural, political, and economic development and of its impact on the Alpine environment.

Attendance and Participation Policies:

Attendance is mandatory for this course. You are responsible for knowing the material covered, discussed, and presented in all parts of the course. If you miss a test/assignment for a valid reason, bring official documentation to the supervisors.

Participation is not only expected but required. Participation marks will be assigned on the basis of interactions with instructors, other students, guest lecturers, and local citizens. As the Center for Alpine Biology is a shared research facility, it is imperative that students show great courtesy to classmates and other researchers when using common areas (e.g., laboratories, kitchen, bathrooms). Furthermore, in Europe you will be representing Georgia Southern University and the United States, thus participation marks will also be based on your daily attitude/behavior. Participation includes (but is not limited to) regular (daily) participation in the cleaning and maintenance of the housing facility, and regular participation in field and laboratory activities, including collecting of specimens and field data, as well as processing (preserving, mounting, and labeling) and identification of specimens. Anyone failing to do their share of the various activities can expect their participation grade to suffer accordingly.

Tests and Assignments:

Pre-tests at GSU (2 tests)		100 points
Personal collections		25 points
Research presentation		125 points
Participation		100 points
<i>Personal additional project (Graduate Only)</i>		<i>50 points</i>
TOTAL	Undergraduate	350 points
	Graduate	400 points

Grading Scale:Undergraduate

A – 315 to 350 points
 B – 280 to 314 points
 C – 245 to 279 points
 D – 210 to 244 points
 F – Less than 209 points

Graduate

A – 360 to 400 points
 B – 320 to 359 points
 C – 280 to 319 points
 D – 240 to 279 points
 F – Less than 239 points

Diversity and Inclusiveness: The College of Science and Mathematics is fully committed to building an inclusive and just community of learners and scholars. Guided by our own strategic plan, centered on diversity and inclusion, the college has increased awareness, activity and action related to the improvement of our internal climate, our sense of belonging and our outreach to students and the community.

CARES (COVID-19 Answers, Resources, Evaluation and Self-reporting) Accommodations
 Any students self-reporting to CARES due to documented COVID exposure will be able to continue with class work through accommodations made by the Instructor (remote instruction) throughout the quarantine period. Please e-mail the Instructor if you are advised to miss classes following the CARES protocol.

Academic Honesty:

Everything handed in for marks is to be done independently (unless prior written consent has been obtained from the course instructors). Examples of inappropriate behavior would include: writing a test, submitting an assignment, or giving an oral presentation with figures, numbers, text, or any other information copied or otherwise obtained directly from books, journal articles, the internet, other students, or any other source without attribution. Such incidents will be treated as a violation of academic honesty.

Students found violating the conditions of academic honesty (see 'Code of Student Conduct' for definitions of academic dishonesty) for **ANY** assignment will be assigned a grade of 'F' for the course. The matter will also be reported to the Office

of Judicial Affairs and will become documented on your permanent record (<http://students.georgiasouthern.edu/judicial/>)!

Laboratory Safety

No food or drinks are permitted in labs at any time. Open-toed footwear is not permitted. Each student is required to sign and abide by a lab. safety agreement. Because of COVID, spacing of students in labs is recommended.

Students with Disabilities:

Any student with a physical disability can contact the instructor in confidence regarding special requirements needed to successfully complete the requirements of this course.

Campus Closure Policy

In the event of an official campus closure (due to inclement weather or other factors), class assignments and responsibilities for students during the closure will be posted on FOLIO or by e-mail.

“It is the policy of Georgia Southern University to operate in accordance with the approved University Calendar and to maintain full operations unless a decision to close is announced by University officials. In the event of emergencies (e.g., hurricanes, significant snow/ice, fires, power failures) changes will be communicated to all affected individuals as quickly as possible in accordance with established emergency notification procedures. If such emergencies require closing one or more of the Georgia Southern University campuses, students should continue to monitor email and/or Folio for additional information and/or assignments from their instructors so that students can complete course requirements.”

USG Campus Carry Policy:

Located at: https://www.usg.edu/assets/usg/docs/USG_HB_280_Guidance_%28003%29.pdf

Frequently asked questions: http://www.usg.edu/hb280/additional_information

No food in lecture room!! Screw-cap bottled drinks are acceptable in lecture room. No food or water in lab!!

***Students with military obligations** that may require their absence for more than the first day of class may request an exemption from the attendance policy by faxing their military orders to the COSM Associate Dean prior to the first week of class.

***It is GSU policy to permit students to observe those holidays set aside for their religious faith.** It is the responsibility of students who wish to be absent for these holidays to make arrangements in advance with the Instructor and to cover any missed class material.

CONDUCT AND CELLPHONES, ETC.

It is expected that all students will be respectful of other students during classes by not talking out of place, by not eating, and by turning off cellphones, and other electronic devices (laptops are okay); it is Biology Dept. policy that these items are not permitted during exams. No earphones or

ear inserts (except prescription hearing aids), or clothing covering ears, during exams are permitted.

The Study Abroad Program (Center for International Studies-GSU):

The Study Abroad Program will assist with organizing all administrative aspects of travel (e.g., insurance, financial, safety, student registrations, passport verifications). When a definitive list of participants has been established, personnel from the Study Abroad program will instruct all students on responsibilities, legalities, and safety aspects related to traveling abroad.

Changes and Modifications:

While this syllabus is as accurate as possible, it may be necessary to change things slightly as the field course progresses. For example, the schedule may be altered slightly in the event of unfavorable climatic conditions or unexpected travel-related delays. Every effort will be made to keep you advised of such changes, through verbal announcements and/or through email. It is your responsibility to know what changes, if any, have been made to the syllabus, so that you can successfully complete the requirements of this course.