

ECL 0390 E Quantitative Field Ecology

COURSE DESCRIPTION

This is an intensive hands-on course where students learn basic statistical methods, the basics for designing and conducting experiments in the field, and will collect and analyze their own data under the supervision of the professor. A good theoretical background is fundamental for ecological research. However, ecology cannot be done just in the computer lab. Real ecologists must get immerse in the field. An field-oriented coursed like this will provide students with a truly opportunity to learn the basics for scientific research which involves the process of formulating sound, interesting and relevant research questions, formulate hypothesis and design "experiments" or field studies for hypothesis testing. Furthermore, this course will take place in the Galapagos Islands a "perfect microcosm" for the study and understanding of the evolution of life-history strategies, animal behavior and ecological adaptations.

Through the course, students will be introduced into the fundamental concepts of hypotheses formulation, experimental design and hypothesis testing using real data collected by themselves as part of the course under the advice and supervision of the professor. The course will be a combination of in-the-classroom lectures (45% of the time) and in-the-field work (60%). However, be prepared because the time in the field may exceed that time stipulated for a 4-credit course. In the classroom, we will cover the fundamental concepts of experimental design, basic statistical methods (both parametric and non-parametric; time constraint prevent a foray into multivariate analyses and generalized linear models, etc.), learn or refresh the basic skills for data analyses (using a statistical program like PAST, or R) and scientific reporting and publication. All students will be part of one field research project and will present a research report.