

## COURSE CONTENT

Academic Year	:	2019/2020
Study Year (if applicable)	:	
Course Code & Title	:	ES2302 Introduction to Field Ecology
Academic Unit	:	2 AU
Pre-requisite	:	ES2003 E2S2 Biosphere
Course Description	:	

### **ES2302 Introduction to Field Ecology**

[Laboratory: 59 hours, Lecture: 6 hours; Pre-requisites: ES2003; Academic Units: 2.0]

#### **Learning Objective**

Technological innovation and enhanced methods of statistical analysis have allowed field ecologists to study phenomena that would have been largely inaccessible to researchers until recently. The basis of successful and innovative field studies, however, is an acquaintance with organisms and a mastery of tried and tested field techniques. In this field course we will acquaint ourselves with a variety of field techniques used to study aquatic and terrestrial organisms and ecosystems, both basic and tech-based methods. More fundamentally we will emphasise the most important, and often most elusive, component of all field ecology: how does one craft an ecological study worth conducting?

#### **Content**

The course will be a two-week intensive course conducted in the field. The course will comprise three components: (1) an introduction to field methods via lectures, demonstrations, and a class activity; (2) a group research project, and (3) an individual project. Through the duration of the course there will be the reading and evaluation of classic research papers, presentations by guest lecturers, and mini-workshops on experimental design and statistical analysis.

**Field Site(s):** to be announced

**Topics Covered:**

- Why study field ecology?
- How to carry out field studies
  - Experimental design
  - Basic plant survey methods
  - Animal survey techniques
  - Data analysis
- Technological innovations in field ecology
  - Tracking methods
  - Physiological studies
  - Molecular ecology
- Applications of field methods in nature conservation and environmental consulting

**Learning outcomes**

By the completion of the course, students should be empowered to formulate research questions, design field experiments, and carry out appropriate statistical analyses. All course participants should be able to understand field methods reported in the majority of published papers in ecology, and be able to fine tune field and analytical methods according to the research question and organism under study. Most importantly, course participants should come away with a sense of accomplishment, with a heightened appreciation of and interest in field biology.

**Student Assessment**

Students will be assessed by:

- a. Participation (10%)
- b. Field Notes (25%)
- c. Final Field Ecological Presentation (65%)

Evaluate understanding of the students during the field exercises. These will be followed by a final presentation. Students required to synthesis the data collection and the analysis in relationship to their experiment design.

In addition to documenting their field experiences and ideas through the maintenance of a field notebook or e-journal, students will be required to carry out a field project. The project will enable the students to apply what they have learned through the design and execution of a project that addresses ecological questions they will have generated whilst in the field. These will be followed by a final presentation, during which the following will be assessed: (1) originality of research topic and the context in which it was formulated, (2) appropriateness of experimental design, (3) execution of research methods, (4) data analysis and synthesis, and (5) teamwork.