

## Research Methods in Ecology and Environmental Science 7.5 credits

Forskningsmetodik i ekologi och miljövetenskap 7.5 hp

Second cycle

Main field: Environmental Science, Second cycle, has second-cycle course/s as entry requirements (AIF)

Syllabus is adopted by the Research and Education Board (2017-03-15) and is valid for students admitted for the autumn semester 2020.

### Placement in the Academic System

The course is included in Master's Programme (60 credits) in Applied Environmental Science). The course is given as a single subject course.

### Prerequisites and Conditions of Admission

Scientific Methods Oriented Towards Natural Sciences 7.5 credits.

Applicants must have written and verbal command of the English language equivalent to English course 6 in Swedish Upper-Secondary School.

### Course Objectives

This course aims for a deeper knowledge and ability to work scientifically within the subject area and adjacent ecological fields and applications.

Following successful completion of the course the student should:

#### Knowledge and Understanding

- understand and account for the principles of selecting a statistical method based on a set of scientific data
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#### Skills and Ability

- based on field- or literature surveys, identify and formulate a scientific problem and be able to provide argumentation for your choice of analysing methods for it
- be able to search for relevant scientific literature in databases and select suitable papers for a scientific presentation
- using a dataset perform a set of statistical analyses (parametric and non-parametric) and use PCA for data reduction on large data sets. Using statistical vocabulary in a correct way is included in this objective
- plan and optimise experimental setups within applied environmental science based on the choice of statistical analyses.

### Judgement and Approach

- in a discussion on ethics within applied environmental science identify different views and opinions a researcher within the field might face
- individually plan and perform scientific presentations in text or orally and critically evaluate such presentations from other students and from this reflect on and evaluate your own presentation skills.

### Primary Contents

Practical and theoretical exercises using scientific material, data analyses using statistical methods, scientific writing and ethical considerations within the field of applied environmental science and adjacent ecology.

### Teaching Formats

The teaching includes exercises, teacher advised discussions, lectures and seminars and supervision during project tasks where all parts contribute to the grade obtained.

Teaching is in English.

### Examination

The overall grades of Fail, Pass or Pass with distinction will be awarded for the course.

Examination is based on written reports, seminars and oral and written examinations.

| Name of the test    |             | Grading |
|---------------------|-------------|---------|
| Written Assignments | 5 credits   | U/G/VG  |
| Seminar Assignments | 2,5 credits | U/G/VG  |

If a disabled student has been granted learning support through a decision by Halmstad University, the examiner may decide on an adapted or alternative form of assessment for this student.

## Course Evaluation

made available to the students.

Course evaluation is part of the course. This evaluation should offer guidance in the future development and planning of the course. Course evaluations should be documented and

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## Course Literature

Harrad, S., Batty, L., Diamond, M. & Arhonditsis, G. *Student Projects in Environmental Science*. John Wiley & Sons Ltd, Chichester, 2008

Laake, P., Benestad, HB. & Olsen, BR. *Research Methodology in the Medical and Biological Sciences*. Academic Press, Elsevier, London, 2007

Scientific papers

Handouts

Internet resources